

Table E18.1. Mean flow, in cubic feet per second, for station 06409000, Castle Creek above Deerfield Reservoir, near Hill City

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1948	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	9.26	8.52	8.47	(2)
1949	9.15	10.7	10.6	7.71	8.04	8.14	13.1	11.9	13.1	8.46	6.45	7.79	9.59
1950	8.06	7.85	6.16	6.44	6.01	7.16	18.7	15.5	9.84	7.87	7.98	8.32	9.17
1951	8.43	8.76	7.95	6.08	6.44	7.11	12.8	11.4	10.7	9.07	7.90	8.41	8.75
1952	8.36	8.03	7.13	5.84	6.97	7.03	15.0	30.5	16.9	10.4	8.25	7.63	11.0
1953	8.19	7.47	7.81	6.81	6.61	8.39	11.4	16.4	11.5	7.47	8.59	7.10	8.99
1954	7.68	7.46	7.73	7.37	7.48	8.76	12.1	8.33	7.47	5.60	6.57	6.78	7.77
1955	7.01	7.93	7.60	6.31	6.48	5.82	18.8	12.1	10.8	7.74	7.72	7.10	8.77
1956	6.84	5.93	6.42	5.74	5.79	6.69	11.9	13.3	8.74	7.29	6.48	5.98	7.60
1957	6.55	6.70	7.06	6.81	6.54	6.39	9.30	11.5	10.3	7.79	7.13	6.70	7.73
1958	6.17	5.46	6.40	6.10	6.83	7.26	10.2	10.2	7.55	7.74	5.91	5.04	7.08
1959	5.90	6.35	5.47	4.94	5.49	6.15	10.8	11.2	7.68	7.17	5.25	5.74	6.84
1960	6.37	6.10	6.45	5.19	5.85	10.5	9.59	7.45	6.24	4.60	4.63	4.42	6.45
1961	3.93	5.04	5.32	4.47	5.22	5.81	6.83	6.56	4.69	4.05	5.33	4.36	5.13
1962	4.10	3.85	2.74	3.98	5.06	6.03	11.9	11.8	12.2	7.56	5.95	5.13	6.69
1963	5.99	5.61	5.32	4.39	5.27	8.74	15.4	14.3	27.0	12.4	8.42	9.93	10.2
1964	8.75	8.42	6.76	7.48	6.82	6.48	15.3	16.8	21.0	14.0	11.0	9.96	11.1
1965	10.5	8.42	8.68	8.48	8.11	7.98	17.1	31.9	34.8	25.4	20.5	17.2	16.6
1966	16.6	14.9	12.4	11.2	11.5	15.7	21.2	18.0	11.8	12.9	14.0	12.5	14.4
1967	13.5	13.2	10.3	10.1	10.3	14.9	16.9	19.0	19.5	14.7	11.6	13.5	14.0
1968	12.6	12.1	11.0	11.5	10.1	13.3	13.5	12.5	12.2	10.5	8.80	10.0	11.5
1969	9.34	9.41	9.28	9.63	9.18	9.94	14.5	16.1	11.8	14.6	10.8	8.57	11.1
1970	11.0	10.0	9.94	8.71	8.48	9.07	16.2	28.0	15.6	11.1	11.2	11.0	12.6
1971	11.0	10.1	10.3	9.48	10.1	10.5	23.7	19.5	14.4	11.6	11.2	11.6	12.8
1972	12.3	11.5	12.0	10.8	9.50	14.6	16.1	16.3	12.7	11.4	11.8	11.3	12.5
1973	11.6	9.29	8.09	9.54	9.21	9.90	16.2	18.4	16.0	12.4	11.2	11.8	12.0
1974	11.6	10.3	8.61	8.76	8.67	12.9	13.7	11.5	8.60	8.90	9.26	8.37	10.1
1975	9.03	10.2	10.8	8.49	8.12	7.89	19.8	19.9	13.7	9.80	8.44	9.02	11.3
1976	9.50	8.58	9.14	8.39	8.54	9.60	12.5	10.4	13.3	10.4	9.06	8.84	9.85
1977	8.37	8.49	8.32	7.84	10.1	11.9	17.6	15.8	11.0	9.54	9.51	9.25	10.6
1978	10.8	8.56	8.19	9.11	9.73	11.7	13.7	30.8	22.5	16.4	12.9	12.6	13.9
1979	13.3	11.6	9.68	10.1	12.1	14.2	16.7	14.8	13.0	13.6	12.5	11.1	12.7
1980	9.94	10.7	6.88	8.70	9.60	10.8	16.7	15.9	11.4	8.54	9.27	9.42	10.6
1981	9.26	9.76	8.82	9.47	8.07	9.06	10.5	10.5	8.16	8.07	8.12	7.58	8.96
1982	8.12	7.21	6.85	6.37	6.66	8.04	12.2	14.7	14.6	10.9	11.5	10.1	9.78
1983	13.4	12.2	11.4	12.0	10.8	15.9	21.0	22.8	18.8	14.4	14.7	13.5	15.1
1984	13.5	11.9	10.1	10.9	11.5	13.2	17.0	29.3	22.0	33.9	15.7	13.3	16.9
1985	12.4	11.8	10.7	9.24	9.50	12.8	14.1	12.6	11.0	8.86	9.23	10.4	11.1
1986	11.9	10.8	11.0	11.3	11.0	15.0	17.3	18.3	15.6	12.1	11.0	11.7	13.1
1987	13.3	11.5	11.5	9.28	10.2	13.6	16.6	14.2	11.2	9.62	8.66	9.05	11.6
1988	10.7	10.9	10.9	8.97	9.56	11.2	15.3	15.1	11.2	10.3	9.35	8.52	11.0
1989	8.56	8.38	9.05	8.76	8.01	11.4	11.4	12.2	9.51	7.80	7.77	8.15	9.26
1990	8.51	8.75	7.72	9.19	8.68	9.54	15.5	13.7	9.80	8.41	7.69	7.20	9.56
1991	8.34	7.74	5.78	5.26	6.74	7.98	12.9	19.7	25.5	11.7	10.5	9.29	11.0
1992	9.65	9.70	9.74	9.58	9.52	11.3	11.8	11.0	10.5	11.2	9.59	9.52	10.3
1993	8.47	8.24	8.04	8.25	7.93	9.95	12.7	18.4	28.6	18.8	14.4	12.3	13.0

¹Indicates a no-value month.

²Incomplete water year.

Table E18.2. Statistics on mean flow, in cubic feet per second, for station 06409000, Castle Creek above Deerfield Reservoir, near Hill City (October 1948 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	45	45	45	45	45	45	45	45	45	45	45	45	45
Maximum	16.6	14.9	12.4	12.0	12.1	15.9	23.7	31.9	34.8	33.9	20.5	17.2	16.9
Percentile													
75th	11.6	10.7	10.3	9.51	9.66	12.3	16.8	18.4	15.8	12.4	11.2	11.2	12.5
50th	9.15	8.75	8.32	8.49	8.12	9.60	14.5	14.8	11.8	10.3	9.23	9.05	10.6
25th	8.09	7.60	6.86	6.34	6.63	7.57	12.0	11.6	10.1	7.84	7.74	7.39	8.97
Minimum	3.93	3.85	2.74	3.98	5.06	5.81	6.83	6.56	4.69	4.05	4.63	4.36	5.13
Mean	9.52	9.06	8.49	8.11	8.28	10.01	14.61	16.01	13.88	11.05	9.64	9.27	10.67
Standard deviation	2.71	2.33	2.12	2.08	1.89	2.94	3.45	6.14	6.28	5.12	3.09	2.71	2.62
Skewness	0.22	0.07	-0.27	-0.20	0.06	0.41	0.32	1.18	1.45	2.55	1.11	0.41	0.27
Coefficient of variation	0.28	0.26	0.25	0.26	0.23	0.29	0.24	0.38	0.45	0.46	0.32	0.29	0.25
Percent of annual flow	7.44	7.09	6.64	6.34	6.47	7.82	11.42	12.52	10.85	8.63	7.54	7.24	¹ 0.684

¹Serial correlation for annual mean flows.

Table E18.3. Serial correlation for 1-year lag for monthly mean flow for station 06409000, Castle Creek above Deerfield Reservoir, near Hill City (October 1948 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.743	0.678	0.574	0.648	0.705	0.537	0.286	0.143	0.185	0.280	0.613	0.671	

Table E18.4. Correlation matrix for monthly mean flow for station 06409000, Castle Creek above Deerfield Reservoir, near Hill City (October 1948 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.946	0.851	0.886	0.897	0.852	0.615	0.426	0.227	0.487	0.650	0.741
Nov.	*	1.000	0.895	0.881	0.875	0.807	0.606	0.302	0.108	0.372	0.518	0.635
Dec.	*	*	1.000	0.873	0.822	0.757	0.519	0.251	0.046	0.304	0.457	0.562
Jan.	*	*	*	1.000	0.923	0.830	0.528	0.322	0.127	0.446	0.591	0.668
Feb.	*	*	*	*	1.000	0.872	0.578	0.359	0.141	0.473	0.588	0.661
Mar.	*	*	*	*	*	1.000	0.446	0.197	0.089	0.330	0.474	0.576
Apr.	*	*	*	*	*	*	1.000	0.513	0.319	0.379	0.538	0.626
May	*	*	*	*	*	*	*	1.000	0.714	0.719	0.737	0.710
June	*	*	*	*	*	*	*	*	1.000	0.753	0.752	0.742
July	*	*	*	*	*	*	*	*	*	1.000	0.850	0.781
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.939
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E18.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06409000, Castle Creek above Deerfield Reservoir, near Hill City

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1949	5.00	16	5.00	13	5.00	9	5.43	12	5.80	11	6.04	9	6.19	10	6.44	11	6.96	11
1950	4.50	10	4.67	10	5.29	13	5.54	13	5.98	13	6.08	11	6.35	12	6.84	14	7.42	15
1951	4.00	5	4.00	4	4.43	5	5.14	8	5.83	12	6.17	13	6.49	13	6.69	12	7.23	13
1952	6.00	26	6.00	20	6.00	17	6.29	17	6.40	15	6.58	15	6.86	15	6.97	16	7.35	14
1953	4.50	11	5.67	17	6.00	18	6.46	19	7.03	18	7.24	17	7.42	17	7.40	17	7.43	16
1954	4.90	15	4.97	12	5.03	12	5.21	9	5.55	9	6.05	10	6.18	9	6.38	9	6.78	9
1955	4.00	6	4.00	5	4.43	6	4.71	5	5.23	7	5.34	5	5.79	6	5.80	5	6.15	6
1956	4.00	7	4.33	8	5.00	10	5.36	11	5.57	10	6.12	12	6.29	11	6.40	10	6.54	8
1957	4.80	13	5.00	14	5.00	11	5.21	10	5.37	8	5.78	8	5.97	8	6.04	7	6.26	7
1958	4.50	12	4.50	9	4.57	8	4.68	4	4.82	4	5.02	4	5.19	4	5.37	4	5.49	4
1959	4.00	8	4.17	6	4.49	7	4.80	7	4.92	5	5.38	6	5.71	5	5.83	6	5.84	5
1960	3.50	3	3.50	3	3.50	2	3.61	2	3.91	2	4.16	2	4.32	2	4.36	2	4.62	2
1961	2.00	1	2.03	1	2.16	1	2.21	1	2.64	1	3.27	1	3.40	1	3.59	1	3.98	1
1962	3.00	2	3.33	2	3.71	3	3.82	3	4.23	3	4.72	3	4.90	3	5.08	3	5.27	3
1963	5.50	22	5.83	19	6.07	19	6.21	16	6.40	16	6.63	16	6.92	16	6.87	15	7.45	17
1964	5.00	17	5.67	18	6.57	22	6.71	21	7.87	25	8.02	21	8.19	23	8.20	20	8.71	22
1965	7.50	39	7.83	39	8.50	40	9.25	43	10.5	44	11.0	44	11.3	44	12.2	44	13.6	44
1966	7.00	34	7.33	34	7.71	32	9.07	41	9.65	40	9.93	39	10.1	37	10.7	38	11.5	39
1967	8.00	41	8.50	43	8.89	44	9.06	40	9.90	41	10.7	43	10.7	40	11.2	43	11.6	41
1968	6.00	27	7.17	33	7.86	36	8.40	34	8.73	34	9.20	34	9.20	32	9.29	31	9.40	27
1969	5.80	25	6.90	30	7.64	30	7.86	29	8.34	30	8.51	29	8.64	28	8.99	29	9.43	28
1970	6.00	28	7.00	31	7.71	33	8.46	35	9.30	37	9.52	36	9.81	36	9.89	35	10.3	34
1971	7.00	35	7.67	37	8.64	42	8.66	37	9.35	38	10.1	40	10.7	41	10.9	40	11.2	37
1972	3.50	4	6.00	21	6.21	20	6.55	20	7.49	19	8.10	24	8.80	30	8.76	26	9.56	31
1973	7.40	38	7.60	36	7.67	31	7.74	28	8.10	28	8.42	28	8.57	27	9.06	30	9.94	33
1974	5.60	23	6.20	22	6.31	21	6.78	22	7.60	22	8.00	20	8.17	22	8.60	24	9.04	24
1975	5.00	18	6.73	28	7.07	27	7.32	26	8.27	29	8.39	27	8.49	25	8.53	22	8.81	23
1976	7.00	36	7.00	32	7.00	26	7.32	27	7.75	23	8.02	22	8.16	21	8.26	21	8.45	20
1977	6.20	31	6.40	25	6.57	23	7.14	24	7.53	21	8.26	25	8.54	26	8.85	27	9.19	26
1978	6.90	33	8.50	44	8.86	43	9.21	42	9.47	39	9.85	38	10.2	38	10.8	39	11.5	40
1979	4.80	14	4.93	11	5.47	14	6.09	15	6.77	17	7.66	18	8.12	20	8.75	25	9.43	29
1980	6.00	29	6.27	23	6.69	24	7.31	25	8.05	27	8.53	30	8.78	29	8.85	28	9.07	25
1981	5.00	19	5.30	16	5.67	15	5.81	14	6.22	14	6.50	14	6.59	14	6.76	13	7.14	12
1982	5.60	24	6.40	26	8.51	41	9.37	44	9.93	42	10.2	41	10.7	42	11.1	42	11.6	42
1983	8.00	42	8.00	40	8.14	37	8.77	39	9.98	43	10.4	42	10.7	43	10.9	41	11.7	43
1984	6.00	30	6.33	24	7.07	28	7.89	31	8.45	31	9.17	33	9.60	35	10.1	36	11.0	36
1985	7.50	40	7.70	38	7.79	35	8.14	33	8.61	33	9.01	32	9.45	34	9.84	34	10.3	35
1986	8.00	43	8.30	42	8.44	39	8.74	38	9.06	36	9.74	37	10.3	39	10.5	37	11.3	38
1987	8.00	44	8.17	41	8.41	38	8.46	36	8.59	32	8.79	31	9.08	31	9.34	32	9.86	32
1988	7.00	37	7.33	35	7.71	34	7.86	30	7.98	26	8.32	26	8.48	24	8.54	23	8.55	21
1989	5.00	20	5.17	15	5.86	16	6.43	18	7.50	20	7.73	19	7.89	18	8.04	18	8.10	18
1990	4.00	9	4.17	7	4.31	4	4.77	6	5.16	6	5.40	7	5.90	7	6.30	8	6.83	10
1991	6.50	32	6.83	29	7.14	29	7.89	32	8.96	35	9.31	35	9.32	33	9.47	33	9.49	30
1992	5.40	21	6.60	27	6.86	25	7.06	23	7.77	24	8.09	23	8.08	19	8.12	19	8.30	19

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E18.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06409000, Castle Creek above Deerfield Reservoir, near Hill City

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1949	28.0	21	20.3	29	16.4	34	14.8	35	13.6	34	13.0	32	12.7	32	11.8	32	10.4	34
1950	46.0	10	37.3	10	29.1	11	25.3	12	20.4	14	17.5	17	14.8	22	13.1	25	11.4	27
1951	22.0	30	18.0	35	14.4	38	13.9	36	13.2	36	12.2	35	11.6	37	11.1	36	10.1	36
1952	232	1	119	1	72.6	1	48.6	2	33.5	3	24.9	4	21.2	5	18.4	6	14.8	13
1953	20.0	33	19.0	31	18.1	28	17.3	24	16.8	22	14.8	26	13.3	27	12.1	30	10.7	32
1954	17.0	40	16.0	38	14.7	37	13.5	38	12.1	39	10.7	41	9.92	41	9.25	42	8.70	41
1955	40.0	12	34.0	13	26.9	13	24.1	13	19.6	18	15.5	22	13.9	26	12.4	28	10.7	33
1956	22.0	31	17.7	36	14.9	36	13.9	37	13.4	35	12.9	33	11.8	35	10.6	38	9.21	39
1957	20.0	34	15.7	39	13.6	39	12.1	42	11.5	43	11.3	39	10.4	39	9.78	39	8.85	40
1958	14.0	43	13.3	43	12.9	42	12.1	43	11.6	42	10.3	44	9.43	43	9.02	43	8.31	42
1959	16.0	41	13.7	42	12.9	43	12.4	41	12.0	40	11.1	40	9.92	42	9.33	41	8.14	43
1960	32.0	17	26.7	16	21.0	22	15.5	32	12.6	37	10.4	43	9.24	44	8.54	44	7.52	44
1961	9.40	45	8.00	45	7.81	45	7.38	45	7.15	45	6.74	45	6.44	45	6.13	45	5.70	45
1962	33.0	15	29.0	14	20.7	24	16.5	30	14.7	29	12.9	34	12.0	34	10.9	37	9.26	38
1963	52.0	8	44.3	7	37.9	8	32.2	8	27.5	8	20.8	10	19.0	10	17.8	9	14.9	11
1964	53.0	7	36.3	11	29.1	12	25.8	11	22.4	12	18.8	14	18.4	13	16.8	13	14.7	14
1965	89.0	3	68.7	3	50.6	3	43.4	3	38.2	1	35.1	1	31.5	1	28.5	1	24.5	1
1966	28.0	22	26.7	17	25.1	15	23.3	15	21.9	13	20.4	11	18.7	11	17.0	12	15.7	7
1967	33.0	16	28.7	15	25.6	14	22.8	16	20.1	16	19.7	13	18.7	12	18.3	7	16.3	6
1968	22.0	32	19.0	32	17.3	32	15.5	33	14.7	30	13.6	30	13.3	28	12.9	26	12.2	23
1969	32.0	18	25.0	19	22.9	18	19.4	21	16.8	23	15.4	23	14.4	23	14.3	19	13.0	19
1970	56.0	6	43.0	8	39.3	6	34.3	7	30.5	5	24.2	5	20.2	7	18.0	8	15.5	8
1971	40.0	13	35.7	12	33.7	10	30.6	9	26.5	9	22.3	8	19.4	9	17.4	11	15.3	9
1972	24.0	27	21.7	27	19.4	25	17.9	23	16.7	24	16.2	20	15.9	17	15.1	17	13.9	17
1973	26.0	24	24.3	22	22.9	19	21.3	18	20.4	15	18.4	15	17.2	16	15.9	15	14.4	15
1974	20.0	35	19.7	30	17.3	33	14.9	34	14.5	31	13.6	31	12.8	31	11.9	31	10.8	31
1975	43.0	11	40.0	9	34.3	9	27.6	10	24.5	10	20.2	12	18.0	14	15.9	16	13.4	18
1976	34.0	14	25.0	20	19.4	26	17.1	27	14.3	32	12.0	36	12.1	33	11.8	33	10.9	30
1977	23.0	29	22.7	25	21.3	21	20.4	19	18.9	20	16.9	18	15.3	18	14.2	20	12.7	20
1978	52.0	9	46.3	6	40.3	5	36.3	4	33.2	4	26.9	3	23.6	3	21.1	3	18.3	3
1979	24.0	28	24.0	23	21.7	20	19.2	22	17.4	21	15.9	21	15.3	19	14.7	18	14.2	16
1980	25.0	26	25.0	21	23.9	17	22.1	17	19.8	17	16.5	19	14.9	20	13.9	22	12.2	24
1981	13.0	44	12.0	44	11.1	44	10.8	44	10.6	44	10.6	42	10.1	40	9.76	40	9.45	37
1982	27.0	23	21.0	28	18.1	29	16.8	28	16.1	26	14.7	27	14.1	25	13.5	23	12.3	22
1983	29.0	20	26.7	18	24.6	16	24.1	14	23.7	11	22.0	9	21.1	6	20.0	5	18.0	4
1984	95.0	2	91.3	2	67.7	2	50.3	1	35.6	2	28.6	2	28.8	2	26.2	2	22.1	2
1985	20.0	36	17.7	37	16.4	35	15.6	31	14.3	33	14.0	29	13.3	29	12.7	27	11.6	26
1986	26.0	25	22.7	26	20.9	23	20.1	20	19.6	19	18.2	16	17.6	15	16.6	14	15.0	10
1987	19.0	38	18.7	33	17.7	31	17.2	26	16.7	25	15.4	24	14.9	21	14.0	21	12.7	21
1988	31.0	19	24.0	24	19.4	27	17.3	25	15.3	28	15.2	25	14.2	24	13.3	24	12.2	25
1989	16.0	42	14.3	41	13.4	41	13.0	39	12.6	38	12.0	37	11.8	36	11.2	34	10.3	35
1990	20.0	37	18.3	34	17.9	30	16.7	29	15.6	27	14.6	28	13.3	30	12.2	29	11.1	28
1991	62.0	5	51.3	4	43.9	4	35.2	5	28.5	7	22.7	7	19.5	8	17.5	10	14.9	12
1992	18.0	39	14.7	40	13.6	40	12.6	40	11.9	41	11.6	38	11.4	38	11.2	35	11.0	29
1993	71.0	4	51.0	5	39.0	7	34.5	6	29.0	6	24.1	6	22.0	4	20.1	4	17.6	5

Table E19.1. Mean flow, in cubic feet per second, for station 06410000, Castle Creek below Deerfield Dam

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1946	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	0.63	0.33	(2)
³ 1947	0.20	0.26	0.22	1.78	2.61	3.14	3.45	11.4	37.1	24.3	12.5	9.89	8.91
1948	3.81	2.58	2.72	3.05	3.06	8.29	23.4	15.5	8.37	12.0	9.42	8.00	8.36
1949	14.2	7.69	1.95	1.90	1.95	2.13	19.9	9.21	13.2	10.3	16.1	12.0	9.23
1950	10.2	4.74	1.90	1.90	1.98	2.07	16.4	21.2	13.9	28.9	9.42	12.5	10.5
1951	4.77	2.37	2.02	1.98	2.00	1.93	1.93	12.0	6.65	5.53	17.0	10.2	5.73
1952	3.28	2.50	2.50	2.50	2.46	4.62	16.5	33.0	15.8	20.2	21.8	20.0	12.1
1953	12.8	3.47	1.99	2.00	2.05	2.17	2.39	12.8	14.6	12.7	13.8	13.6	7.91
1954	8.07	2.21	2.16	2.21	2.22	5.22	11.1	19.1	17.4	38.5	28.9	17.5	13.0
1955	4.52	2.40	2.40	2.35	2.30	2.39	2.80	18.1	10.3	25.0	27.8	21.1	10.2
1956	3.53	2.24	2.06	2.43	3.03	3.05	2.79	6.40	25.3	30.6	24.6	10.0	9.71
1957	15.5	3.07	2.34	2.32	2.31	2.40	2.52	2.73	2.39	2.60	16.5	7.72	5.24
1958	1.85	2.00	2.06	2.04	2.12	2.17	2.21	13.9	21.3	14.0	23.0	25.1	9.33
1959	12.2	4.28	1.92	2.05	2.10	2.06	10.9	19.2	24.7	35.2	60.2	64.2	20.0
1960	2.85	.017	1.25	1.62	1.72	1.56	1.59	1.59	3.08	6.25	4.92	4.87	2.62
1961	20.6	1.70	1.52	1.71	2.12	2.19	1.85	1.68	6.12	6.13	6.06	5.20	4.77
1962	2.39	2.00	2.09	1.93	1.77	1.79	1.79	7.49	2.39	2.13	3.78	4.37	2.84
1963	2.39	2.17	2.19	2.02	2.11	2.26	2.00	2.17	9.17	8.29	7.66	7.65	4.18
1964	2.37	2.38	2.18	2.34	2.32	2.17	13.2	21.2	26.5	18.4	22.2	23.9	11.6
1965	12.8	2.20	2.47	2.34	2.13	1.99	21.2	41.9	50.0	27.0	22.2	32.0	18.2
1966	40.0	2.58	2.46	2.81	4.48	15.3	24.2	23.9	15.4	12.6	15.3	47.8	17.3
1967	9.40	2.33	1.89	2.19	2.35	10.9	23.1	21.6	26.5	19.6	27.0	33.4	15.1
1968	4.93	2.71	2.55	1.93	1.75	12.0	15.9	14.3	15.0	11.0	10.4	26.6	9.92
1969	18.5	2.16	2.02	2.04	2.10	4.91	18.4	19.8	11.8	15.2	22.0	37.7	13.1
1970	2.21	1.89	1.92	2.06	2.21	2.35	18.3	36.1	17.4	11.5	25.7	28.4	12.5
1971	2.15	1.88	2.13	2.14	1.26	6.28	33.7	24.7	18.2	9.68	13.2	34.2	12.5
1972	33.6	2.03	1.98	2.36	2.25	14.1	15.7	13.3	14.0	6.75	15.9	33.9	13.0
1973	25.1	2.43	2.34	2.40	2.48	2.31	11.5	24.7	16.1	14.8	20.6	24.8	12.5
1974	16.5	2.36	2.30	2.32	2.50	2.48	13.9	17.0	12.3	8.22	12.6	10.1	8.59
1975	11.0	3.02	2.38	2.66	2.59	4.76	24.6	27.5	14.6	12.2	8.74	14.5	10.7
1976	10.7	2.55	2.41	2.32	2.67	9.45	16.7	14.8	15.0	12.4	8.91	15.7	9.47
1977	25.0	2.61	2.28	2.20	2.22	3.70	19.6	21.7	12.5	15.4	22.3	11.2	11.8
1978	2.70	2.23	2.17	3.48	8.78	12.3	19.0	46.8	32.7	18.6	19.0	23.5	16.0
1979	18.6	2.04	2.22	2.14	12.6	15.5	19.1	17.6	15.9	16.3	14.9	26.6	13.6
1980	26.3	2.57	2.56	2.50	2.53	4.00	18.2	19.7	14.6	8.95	9.25	21.4	11.1
1981	19.5	2.26	2.37	2.40	2.40	5.28	9.52	12.8	9.92	12.3	24.3	17.0	10.1
1982	6.40	2.03	2.20	2.33	2.72	4.72	44.1	45.4	47.2	81.1	72.7	58.0	30.9
1983	2.03	.13	.89	1.53	5.18	10.3	19.5	32.3	6.57	4.97	4.31	4.05	7.67
1984	(1)	(1)	(1)	(1)	(1)	2.11	5.63	15.7	20.5	15.8	14.2	12.0	(2)
1985	(1)	(1)	(1)	(1)	(1)	22.9	15.6	12.0	12.1	13.6	25.1	16.7	(2)
1986	(1)	(1)	(1)	(1)	(1)	10.4	22.7	20.3	14.3	9.79	11.0	22.5	(2)
1987	(1)	(1)	(1)	(1)	(1)	7.98	21.6	17.6	10.7	8.85	19.7	15.8	(2)
1988	(1)	(1)	(1)	(1)	(1)	3.47	19.8	19.5	10.9	16.7	16.3	13.7	(2)
1989	(1)	(1)	(1)	(1)	(1)	5.11	17.2	14.0	10.1	13.7	15.4	11.9	(2)
1990	(1)	(1)	(1)	(1)	(1)	4.98	22.0	22.8	15.7	13.0	13.0	11.4	(2)
1991	(1)	(1)	(1)	(1)	(1)	(1)	17.5	19.5	44.0	15.5	17.9	15.7	(2)
1992	(1)	(1)	(1)	(1)	(1)	(1)	15.9	16.0	15.0	14.6	12.3	10.3	(2)
1993	(1)	(1)	(1)	(1)	(1)	6.90	16.7	21.5	38.4	28.5	23.5	26.6	(2)

¹Indicates a no-value month.²Incomplete water year.³Deerfield Reservoir effectively filled during water year 1947.

Table E19.2. Statistics on mean flow, in cubic feet per second, for station 06410000, Castle Creek below Deerfield Dam (October 1947 through September 1983)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	36	36	36	36	36	36	36	36	36	36	36	36	36
Maximum	40.0	7.69	2.72	3.48	12.6	15.5	44.1	46.8	50.0	81.1	72.7	64.2	30.9
Percentile													
75th	18.0	2.58	2.38	2.39	2.57	7.79	19.6	24.5	18.0	19.3	22.8	28.0	13.0
50th	9.80	2.34	2.17	2.20	2.28	3.37	16.1	18.6	14.6	12.5	16.3	18.7	10.6
25th	2.96	2.03	1.98	2.00	2.10	2.17	2.79	12.8	10.0	8.45	9.42	10.1	8.42
Minimum	1.85	0.017	0.89	1.53	1.26	1.56	1.59	1.59	2.39	2.13	3.78	4.05	2.62
Mean	11.47	2.50	2.13	2.24	2.86	5.31	14.43	19.25	16.30	16.54	18.96	21.35	11.15
Standard deviation	9.73	1.22	0.36	0.38	2.10	4.28	9.85	11.49	10.53	14.12	13.79	14.51	5.26
Skewness	1.15	2.16	-1.53	1.06	3.71	1.24	0.61	0.68	1.65	2.99	2.42	1.23	1.44
Coefficient of variation	0.85	0.49	0.17	0.17	0.74	0.81	0.68	0.60	0.65	0.85	0.73	0.68	0.47
Percent of annual flow	8.60	1.87	1.60	1.68	2.14	3.98	10.82	14.44	12.23	12.40	14.22	16.02	¹ 0.085

¹Serial correlation for annual mean flows.

Table E19.3. Serial correlation for 1-year lag for monthly mean flow for station 06410000, Castle Creek below Deerfield Dam (October 1947 through September 1983)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.055	0.214	0.222	0.134	0.402	0.317	0.423	0.246	-0.057	-0.129	-0.048	0.165	

Table E19.4. Correlation matrix for monthly mean flow for station 06410000, Castle Creek below Deerfield Dam (October 1947 through September 1983)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.168	0.204	0.163	0.093	0.307	0.123	-0.088	-0.099	-0.142	-0.046	0.243
Nov.	*	1.000	0.272	0.059	-0.152	-0.190	0.081	-0.103	0.050	0.091	0.135	0.088
Dec.	*	*	1.000	0.664	-0.009	0.100	0.208	0.141	0.212	0.124	0.106	0.190
Jan.	*	*	*	1.000	0.319	0.347	0.322	0.423	0.337	0.151	0.123	0.202
Feb.	*	*	*	*	1.000	0.615	0.181	0.276	0.127	0.020	-0.054	0.067
Mar.	*	*	*	*	*	1.000	0.433	0.231	0.073	-0.069	-0.122	0.280
Apr.	*	*	*	*	*	*	1.000	0.703	0.520	0.446	0.330	0.533
May	*	*	*	*	*	*	*	1.000	0.693	0.490	0.417	0.495
June	*	*	*	*	*	*	*	*	1.000	0.717	0.632	0.623
July	*	*	*	*	*	*	*	*	*	1.000	0.841	0.569
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.742
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E19.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06410000, Castle Creek below Deerfield Dam

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1948	.0000	1	1.90	16	1.90	16	1.90	14	1.90	12	1.90	8	1.93	7	1.95	6	5.02	25
1949	1.90	17	1.90	17	1.90	17	1.90	15	1.90	13	1.90	9	1.91	6	1.95	7	3.87	16
1950	1.90	18	1.90	18	1.90	18	1.90	16	1.93	14	1.96	11	1.97	10	1.98	8	2.58	8
1951	1.90	19	1.90	19	1.90	19	1.90	17	1.93	15	2.45	32	2.47	32	2.47	31	2.92	11
1952	1.90	20	1.90	20	1.91	24	1.96	23	1.98	20	1.99	13	2.01	11	2.04	12	4.20	18
1953	2.00	25	2.00	25	2.00	25	2.00	24	2.06	24	2.17	24	2.16	20	2.20	17	3.77	15
1954	2.30	34	2.30	33	2.30	33	2.30	33	2.30	31	2.31	29	2.34	28	2.36	28	2.81	10
1955	1.80	14	1.80	13	1.86	14	1.91	20	1.97	18	2.12	22	2.24	24	2.33	25	2.72	9
1956	2.10	27	2.10	27	2.11	27	2.16	27	2.21	28	2.29	27	2.32	27	2.31	23	4.76	23
1957	1.80	15	1.80	14	1.80	13	1.81	10	1.83	8	1.92	10	1.96	9	1.98	9	2.05	3
1958	1.70	8	1.70	7	1.76	10	1.78	9	1.86	10	1.97	12	2.01	12	2.03	11	4.24	19
1959	.0000	2	.0000	1	.0000	1	.0000	1	.0000	1	.13	1	.61	2	.88	1	1.51	1
1960	1.40	5	1.40	4	1.40	4	1.44	4	1.52	4	1.59	3	1.64	3	1.75	3	3.73	14
1961	1.60	6	1.60	5	1.66	5	1.67	5	1.68	5	1.71	5	1.83	5	1.90	5	2.02	2
1962	1.70	9	1.70	8	1.70	7	1.75	7	1.79	7	2.06	18	2.11	17	2.12	14	2.19	4
1963	1.90	21	1.90	21	1.90	20	1.90	18	1.95	16	2.08	19	2.17	21	2.21	18	2.29	6
1964	1.90	22	1.90	22	1.90	21	1.94	22	1.99	22	2.05	17	2.15	19	2.23	19	4.13	17
1965	2.10	28	2.30	34	2.30	34	2.36	34	2.43	34	2.51	35	2.59	35	2.74	34	11.6	35
1966	1.70	10	1.70	9	1.73	9	1.76	8	1.84	9	2.02	15	2.08	14	2.13	15	5.12	27
1967	1.70	11	1.70	10	1.70	8	1.70	6	1.72	6	1.84	6	2.08	15	2.24	20	4.35	21
1968	1.90	23	1.90	23	1.90	22	1.90	19	1.97	19	2.02	16	2.05	13	2.07	13	5.55	28
1969	1.70	12	1.77	12	1.79	11	1.81	11	1.87	11	1.89	7	1.95	8	1.99	10	2.23	5
1970	.67	4	.67	3	.67	3	.75	3	1.29	3	1.59	4	1.77	4	1.84	4	2.56	7
1971	1.80	16	1.83	15	1.86	15	1.89	13	1.98	21	2.01	14	2.08	16	2.16	16	9.51	34
1972	2.20	30	2.20	29	2.20	29	2.20	29	2.27	30	2.34	30	2.37	30	2.36	29	6.44	30
1973	2.00	26	2.00	26	2.03	26	2.04	25	2.15	26	2.24	26	2.29	26	2.32	24	4.90	24
1974	2.20	31	2.20	30	2.20	30	2.24	30	2.36	33	2.48	33	2.54	34	2.56	33	4.40	22
1975	2.20	32	2.23	32	2.27	32	2.28	32	2.30	32	2.36	31	2.40	31	2.44	30	5.06	26
1976	2.10	29	2.10	28	2.14	28	2.17	28	2.19	27	2.21	25	2.23	23	2.25	21	6.48	31
1977	1.60	7	1.63	6	1.69	6	2.04	26	2.11	25	2.15	23	2.26	25	2.33	26	4.25	20
1978	1.70	13	1.73	11	1.79	12	1.83	12	1.95	17	2.08	20	2.11	18	3.76	35	8.93	33
1979	2.40	35	2.47	35	2.49	35	2.49	35	2.50	35	2.50	34	2.53	33	2.54	32	6.81	32
1980	2.20	33	2.20	31	2.20	31	2.24	31	2.26	29	2.30	28	2.34	29	2.35	27	5.87	29
1981	1.90	24	1.90	24	1.90	23	1.93	21	2.01	23	2.10	21	2.18	22	2.30	22	3.36	13
1982	.060	3	.10	2	.11	2	.12	2	.13	2	.43	2	.53	1	1.05	2	3.00	12

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E19.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06410000, Castle Creek below Deerfield Dam

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1948	26.0	30	26.0	28	25.3	28	24.6	28	23.9	26	21.4	23	16.7	25	15.6	25	13.4	26
1949	41.0	18	41.0	18	41.0	15	31.7	23	20.0	28	14.9	29	14.2	30	13.5	29	13.4	27
1950	47.0	15	47.0	14	38.0	21	37.3	17	29.3	17	22.9	19	21.6	16	21.5	14	17.1	17
1951	22.0	33	22.0	33	21.4	33	17.1	33	17.0	32	14.3	31	11.1	31	11.1	31	8.92	31
1952	200	1	123	2	78.3	3	52.3	6	35.3	11	26.1	15	24.3	13	23.3	7	21.3	10
1953	30.0	27	25.0	30	22.1	31	19.9	31	17.3	31	14.9	30	14.8	28	14.6	28	11.7	30
1954	65.0	7	64.3	6	59.7	6	53.8	5	52.1	4	35.6	5	30.9	5	26.9	5	22.2	8
1955	57.0	12	50.7	12	44.4	12	36.3	18	32.4	16	27.0	12	25.0	10	21.4	15	17.6	15
1956	52.0	14	51.3	11	44.6	11	35.9	19	33.2	15	32.6	6	27.6	6	23.1	9	16.7	19
1957	24.0	32	24.0	32	24.0	29	23.4	29	18.1	29	12.4	32	9.11	32	7.43	33	5.78	33
1958	34.0	25	34.0	24	34.0	24	32.6	22	26.3	23	24.2	17	20.9	18	21.1	16	16.6	20
1959	125	2	124	1	120	1	98.3	1	64.2	2	62.4	2	53.6	2	46.7	2	35.8	2
1960	13.0	35	9.93	36	7.13	36	6.52	36	6.39	36	5.87	35	5.48	35	4.85	35	3.73	35
1961	60.0	10	59.3	8	58.9	7	37.5	16	21.2	27	11.5	33	8.15	34	6.54	34	5.02	34
1962	10.0	36	10.0	35	9.91	35	9.60	35	7.69	35	5.04	36	4.07	36	3.98	36	3.67	36
1963	14.0	34	14.0	34	14.0	34	13.5	34	11.6	34	9.77	34	9.04	33	8.29	32	6.16	32
1964	64.0	8	45.7	15	34.6	23	31.6	24	28.7	18	23.9	18	23.1	14	22.9	10	20.9	11
1965	90.0	3	72.7	5	66.1	4	59.4	3	53.1	3	48.4	3	40.1	3	35.8	3	32.3	3
1966	55.0	13	55.0	9	54.0	9	52.3	7	47.8	6	31.5	7	25.3	9	22.7	11	23.1	6
1967	59.0	11	47.7	13	37.6	22	34.9	21	34.4	13	30.4	9	26.6	7	26.6	6	25.2	5
1968	39.0	23	39.0	23	38.9	20	38.4	13	26.6	21	18.5	26	15.9	26	15.7	24	15.5	22
1969	40.0	20	40.0	20	40.0	17	39.9	10	37.9	8	30.0	11	25.0	11	21.8	13	20.8	12
1970	74.0	6	63.0	7	57.6	8	50.2	8	42.6	7	30.3	10	25.0	12	23.3	8	22.9	7
1971	61.0	9	54.0	10	49.4	10	43.9	9	37.4	9	30.5	8	26.1	8	22.0	12	22.2	9
1972	40.0	21	40.0	21	39.6	18	39.1	12	34.6	12	25.0	16	19.0	21	17.6	21	16.5	21
1973	40.0	22	40.0	22	39.6	19	39.2	11	27.5	19	22.9	20	20.2	19	19.1	18	18.8	13
1974	26.0	31	25.7	29	23.9	30	22.1	30	17.6	30	16.1	27	14.7	29	13.1	30	12.4	29
1975	46.0	16	44.3	16	42.7	13	38.3	14	34.0	14	26.6	14	22.9	15	19.9	17	17.0	18
1976	28.0	29	25.0	31	22.0	32	18.9	32	17.0	33	15.8	28	15.7	27	14.9	27	13.9	25
1977	42.0	17	42.0	17	42.0	14	35.1	20	25.6	24	21.9	22	18.3	22	18.5	19	17.4	16
1978	83.0	5	75.0	4	65.1	5	56.2	4	49.2	5	40.6	4	34.3	4	30.0	4	26.6	4
1979	37.0	24	31.0	25	29.0	25	28.5	25	26.6	22	20.7	24	19.3	20	18.4	20	18.4	14
1980	30.0	28	29.0	27	28.4	27	27.9	26	27.1	20	19.3	25	17.6	24	15.5	26	15.3	23
1981	33.0	26	29.7	26	28.6	26	27.3	27	25.5	25	22.9	21	18.2	23	16.3	23	14.4	24
1982	86.0	4	85.0	3	84.4	2	83.3	2	81.7	1	77.2	1	74.9	1	67.8	1	58.4	1
1983	41.0	19	40.7	19	40.3	16	37.6	15	35.6	10	26.7	13	21.6	17	17.6	22	13.2	28

Table E20.1. Mean flow, in cubic feet per second, for station 06410500, Rapid Creek above Pactola Reservoir, at Silver City

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1954	22.4	17.7	16.5	17.2	18.9	24.4	37.1	40.2	33.6	44.8	40.1	24.6	28.2
1955	15.2	13.7	13.3	12.2	12.8	18.1	60.4	57.6	50.6	55.5	43.8	33.7	32.3
1956	17.9	14.1	12.6	14.3	13.3	36.2	30.0	42.1	48.1	41.4	37.1	17.7	27.1
1957	26.3	19.0	14.3	11.4	13.6	19.2	31.4	62.1	73.1	34.5	38.7	22.3	30.6
1958	17.2	16.0	14.7	12.3	15.7	20.4	29.1	37.8	51.1	40.6	34.7	33.4	26.9
1959	24.9	17.8	13.2	13.4	16.6	23.0	45.7	47.4	45.0	50.5	63.7	68.6	35.9
1960	17.7	12.1	12.5	10.2	10.4	26.4	28.6	25.3	27.6	18.0	14.2	12.5	18.0
1961	30.5	12.4	12.5	11.2	13.5	17.3	16.5	14.5	14.7	15.2	11.5	10.5	15.1
1962	10.2	10.3	7.77	8.61	13.2	12.1	19.2	67.4	174	63.4	39.7	23.0	37.4
1963	20.4	15.7	13.5	9.94	11.2	29.3	67.6	105	266	82.5	39.1	35.3	58.0
1964	22.6	21.8	17.7	20.0	21.1	22.3	64.9	95.3	171	93.1	62.5	54.0	55.5
1965	39.6	25.0	24.3	25.0	26.1	22.6	61.6	274	291	156	80.1	71.4	91.7
1966	73.5	29.9	23.2	20.5	26.1	57.3	69.4	58.0	38.6	31.3	32.0	57.4	43.2
1967	29.6	21.0	17.2	19.5	18.8	42.1	53.8	70.8	188	111	59.9	61.9	57.8
1968	30.0	23.5	19.8	21.8	22.6	31.8	41.4	40.1	49.1	38.0	29.3	40.4	32.3
1969	33.2	16.3	16.2	18.5	18.3	25.7	59.9	67.1	40.7	47.5	39.4	54.4	36.5
1970	20.0	17.9	15.2	17.3	19.7	21.7	116	169	103	47.1	47.5	45.5	53.4
1971	19.1	16.6	14.1	16.2	22.3	30.4	172	151	119	44.5	33.8	53.5	57.7
1972	55.2	27.2	18.1	16.1	20.0	50.7	48.4	58.7	89.3	60.3	51.6	52.0	45.7
1973	45.5	20.8	18.2	18.9	18.3	24.5	75.8	110	67.0	41.7	42.0	43.5	44.0
1974	33.8	22.3	20.5	13.2	12.4	15.0	39.6	37.9	25.7	21.6	23.3	20.6	23.9
1975	21.2	15.9	13.6	9.81	8.91	14.5	89.4	119	76.6	44.1	24.5	25.6	38.7
1976	24.7	18.0	19.2	15.0	16.5	28.6	48.9	48.8	137	60.8	33.5	32.6	40.2
1977	39.1	18.7	15.8	14.3	23.0	28.1	113	96.0	41.1	32.4	40.0	26.2	40.7
1978	23.4	18.0	21.7	18.3	19.5	37.0	56.0	258	100	57.6	48.1	41.8	58.7
1979	38.5	22.7	19.9	15.0	34.4	44.8	53.2	46.1	47.1	53.4	46.8	46.9	39.1
1980	40.6	22.6	10.7	13.6	15.8	21.9	56.6	55.5	39.3	21.1	19.6	30.3	28.9
1981	34.3	13.5	12.3	10.3	9.61	13.6	21.9	41.4	24.5	28.1	38.8	30.9	23.4
1982	20.2	11.0	9.82	9.11	10.4	14.5	54.6	103	103	111	101	73.7	52.1
1983	35.9	34.2	20.3	21.5	25.9	38.8	84.5	162	87.5	42.7	36.2	25.0	51.3
1984	25.1	21.9	12.6	21.1	22.5	28.4	55.4	140	122	65.2	53.9	33.6	50.1
1985	34.2	23.7	18.8	18.7	20.7	35.5	51.4	33.2	25.5	22.9	33.7	27.4	28.8
1986	24.9	16.9	14.9	10.3	14.9	41.0	61.0	78.2	54.7	35.7	27.4	45.0	35.5
1987	57.4	36.6	20.7	18.6	22.4	46.3	73.1	62.7	35.3	22.8	31.0	23.7	37.6
1988	31.9	21.2	9.74	8.65	14.2	21.5	46.3	52.4	27.1	28.6	26.9	20.7	25.8
1989	18.5	17.4	10.2	9.58	8.77	21.7	35.0	38.6	24.9	23.5	23.1	21.6	21.1
1990	19.3	12.3	12.0	9.52	9.51	23.6	57.6	67.3	40.4	24.2	22.5	20.1	26.6
1991	16.5	12.7	9.38	13.6	12.1	17.0	42.5	98.4	200	53.4	38.6	31.9	45.5
1992	17.5	19.4	16.3	13.5	14.9	32.8	38.2	36.5	35.5	41.4	32.7	26.6	27.1
1993	18.1	14.0	11.1	10.5	8.34	20.7	55.9	151	223	102	60.7	51.8	60.8

Table E20.2. Statistics on mean flow, in cubic feet per second, for station 06410500, Rapid Creek above Pactola Reservoir, at Silver City (October 1953 through September 1993)

Statistic	Month												Annual	
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		
Number	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Maximum	73.5	36.6	24.3	25.0	34.4	57.3	172	274	291	156	101	73.7	91.7	
Percentile														
75th	34.3	22.2	18.6	18.6	21.0	34.8	64.1	104	115	59.6	47.3	50.6	51.0	
50th	24.9	18.0	14.8	13.9	16.1	24.5	54.2	62.4	50.8	43.4	38.6	33.0	37.5	
25th	19.1	14.5	12.5	10.3	12.5	20.5	38.5	41.6	36.3	29.3	29.7	23.9	27.4	
Minimum	10.2	10.3	7.77	8.61	8.34	12.1	16.5	14.5	14.7	15.2	11.5	10.5	15.1	
Mean	28.65	19.04	15.36	14.72	16.93	27.52	56.57	82.98	85.27	50.23	40.07	36.79	39.58	
Standard deviation	12.87	5.88	4.08	4.38	5.86	10.78	28.80	58.09	70.27	29.70	17.22	16.34	15.05	
Skewness	1.53	1.09	0.28	0.39	0.67	0.90	1.95	1.76	1.45	1.69	1.38	0.62	1.05	
Coefficient of variation	0.45	0.31	0.27	0.30	0.35	0.39	0.51	0.70	0.82	0.59	0.43	0.44	0.38	
Percent of annual flow	6.04	4.02	3.24	3.10	3.57	5.80	11.93	17.50	17.98	10.59	8.45	7.76	¹ 0.344	

¹Serial correlation for annual mean flows.

Table E20.3. Serial correlation for 1-year lag for monthly mean flow for station 06410500, Rapid Creek above Pactola Reservoir, at Silver City (October 1953 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.247	0.205	0.298	0.476	0.391	0.246	0.275	0.067	0.177	0.110	0.056	0.316	

Table E20.4. Correlation matrix for monthly mean flow for station 06410500, Rapid Creek above Pactola Reservoir, at Silver City (October 1953 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.761	0.605	0.476	0.552	0.609	0.134	-0.037	-0.218	-0.140	-0.041	0.201
Nov.	*	1.000	0.711	0.673	0.686	0.651	0.228	0.126	-0.084	-0.047	-0.008	0.122
Dec.	*	*	1.000	0.763	0.709	0.599	0.204	0.277	0.018	0.135	0.097	0.283
Jan.	*	*	*	1.000	0.782	0.487	0.291	0.408	0.190	0.283	0.270	0.391
Feb.	*	*	*	*	1.000	0.624	0.370	0.260	0.026	0.135	0.198	0.350
Mar.	*	*	*	*	*	1.000	0.195	-0.001	-0.099	-0.054	-0.042	0.210
Apr.	*	*	*	*	*	*	1.000	0.498	0.164	0.085	0.103	0.313
May	*	*	*	*	*	*	*	1.000	0.613	0.579	0.483	0.426
June	*	*	*	*	*	*	*	*	1.000	0.837	0.541	0.445
July	*	*	*	*	*	*	*	*	*	1.000	0.843	0.701
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.786
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E20.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06410500, Rapid Creek above Pactola Reservoir, at Silver City

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1954	9.00	23	9.33	21	11.0	23	11.6	23	11.9	18	12.4	17	12.6	15	13.0	13	14.2	9
1955	6.00	6	7.00	8	10.0	18	10.6	18	11.7	17	12.8	19	13.3	19	13.0	14	15.7	12
1956	10.0	25	10.0	24	10.3	22	10.7	20	11.3	16	12.5	18	13.0	17	14.1	16	17.0	15
1957	8.00	19	8.00	15	8.29	12	8.79	13	9.03	10	11.8	14	12.9	16	13.9	15	16.0	14
1958	10.0	26	10.0	25	10.0	19	10.6	19	12.7	21	12.8	20	13.5	20	14.6	18	18.2	17
1959	7.00	11	7.00	9	7.57	9	8.50	8	10.1	14	10.2	9	10.5	8	11.2	7	15.0	10
1960	6.00	7	7.33	12	8.14	11	9.07	15	10.9	15	11.6	13	11.8	13	12.3	12	15.3	11
1961	4.00	2	4.67	3	5.43	2	6.57	2	7.67	1	8.12	1	8.79	1	9.12	1	9.66	1
1962	7.00	12	8.33	17	8.71	16	9.36	16	9.83	12	10.4	10	10.6	9	11.6	10	14.0	8
1963	12.0	35	13.0	35	13.7	32	14.8	32	17.4	32	18.7	33	19.5	34	19.9	31	20.9	25
1964	10.0	27	12.0	30	15.6	39	17.4	38	21.4	39	23.1	39	24.2	39	24.2	37	27.3	34
1965	10.0	28	12.3	32	14.3	35	15.8	35	18.9	37	20.9	38	22.7	38	24.6	38	39.0	39
1966	10.0	29	12.0	31	12.4	28	13.4	27	15.8	30	18.0	30	18.2	29	18.9	27	24.5	31
1967	10.0	30	12.7	33	14.3	36	14.5	30	16.2	31	19.0	36	20.8	36	21.8	35	24.9	33
1968	11.0	33	11.7	29	13.3	30	14.4	28	15.6	28	16.1	26	16.7	26	17.1	24	21.6	28
1969	8.00	20	10.3	27	11.4	26	12.7	26	14.1	25	15.4	25	16.3	25	17.3	25	18.8	20
1970	7.00	13	8.67	19	11.3	24	11.8	24	12.9	22	13.4	21	14.9	22	15.9	22	18.9	21
1971	10.0	31	10.0	26	12.3	27	14.4	29	15.6	29	16.3	27	17.9	27	20.2	33	31.2	37
1972	10.0	32	13.7	38	14.6	37	15.4	34	17.4	33	18.3	32	18.3	30	19.0	28	24.7	32
1973	7.00	14	7.67	13	9.29	17	9.93	17	12.1	19	12.3	16	12.5	14	15.1	20	19.7	23
1974	6.00	8	6.33	6	7.14	7	7.86	6	8.18	4	9.07	3	9.29	2	11.2	8	13.8	7
1975	8.00	21	8.67	20	10.0	20	11.5	22	13.4	24	15.0	24	15.6	23	16.8	23	19.5	22
1976	9.00	24	9.33	22	10.1	21	11.1	21	14.1	26	14.6	23	15.9	24	17.6	26	23.1	29
1977	13.0	39	14.0	39	15.1	38	16.6	37	18.0	36	18.8	34	19.3	33	19.3	29	20.5	24
1978	12.0	36	13.0	36	14.0	33	14.5	31	15.0	27	17.0	29	18.7	31	21.6	34	28.7	35
1979	7.00	15	7.73	14	8.29	13	8.90	14	9.92	13	12.0	15	13.1	18	14.8	19	20.9	26
1980	7.00	16	7.27	11	7.80	10	8.67	10	9.64	11	9.89	8	10.7	10	10.9	5	15.8	13
1981	7.50	17	8.17	16	8.43	14	8.68	11	8.88	7	9.21	5	9.59	5	10.0	2	12.6	2
1982	8.00	22	9.93	23	13.1	29	17.7	39	19.3	38	20.4	37	22.4	37	24.6	39	28.8	36
1983	5.00	4	5.47	4	6.17	4	8.61	9	12.3	20	16.3	28	18.0	28	19.3	30	21.1	27
1984	12.0	37	12.7	34	13.3	31	14.8	33	17.4	34	18.0	31	19.1	32	20.1	32	24.2	30
1985	2.50	1	2.83	1	3.64	1	5.89	1	8.20	5	11.2	12	11.3	11	14.2	17	18.2	18
1986	12.0	38	13.0	37	14.1	34	16.4	36	17.9	35	18.9	35	20.2	35	23.6	36	33.3	38
1987	6.00	9	6.67	7	7.00	6	7.86	7	8.00	2	8.52	2	9.56	4	11.3	9	17.6	16
1988	4.00	3	4.33	2	6.00	3	7.81	5	8.73	6	9.09	4	9.43	3	10.9	6	13.7	6
1989	6.50	10	7.00	10	7.30	8	7.63	4	8.92	8	9.37	7	10.2	7	10.8	4	13.6	4
1990	7.80	18	8.47	18	8.67	15	8.76	12	8.98	9	10.7	11	11.5	12	11.9	11	13.6	5
1991	11.0	34	11.0	28	11.3	25	12.1	25	12.9	23	13.5	22	14.7	21	15.7	21	18.5	19
1992	5.00	5	5.50	5	6.43	5	7.21	3	8.13	3	9.31	6	9.98	6	10.5	3	13.0	3

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E20.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06410500, Rapid Creek above Pactola Reservoir, at Silver City

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1954	88.0	27	79.3	31	71.6	29	62.9	30	61.6	27	45.3	34	44.5	30	41.3	32	37.5	31
1955	228	13	139	20	102	21	74.2	25	68.9	25	61.8	26	57.3	24	56.9	21	50.3	21
1956	120	23	117	22	97.1	23	68.0	27	58.4	29	49.9	29	45.5	29	44.1	28	39.8	27
1957	159	20	142	19	130	18	107	19	89.8	19	69.1	21	58.4	23	52.4	25	43.8	26
1958	88.0	28	81.3	29	71.4	30	62.5	31	55.5	31	48.1	31	43.9	31	41.8	31	37.8	30
1959	142	21	136	21	130	19	103	20	68.6	26	66.2	23	60.7	22	57.2	20	53.5	19
1960	100	26	81.0	30	64.1	33	47.1	37	38.2	39	31.9	39	30.8	39	28.6	39	23.4	39
1961	70.0	34	69.3	32	68.6	31	48.1	36	31.5	40	21.9	40	18.7	40	16.8	40	16.5	40
1962	370	10	340	10	304	8	229	9	181	10	133	11	107	13	87.7	13	64.4	13
1963	683	3	607	2	487	2	363	2	269	2	188	3	157	3	132	3	101	3
1964	485	5	395	7	305	7	232	8	188	9	140	9	123	8	107	9	90.0	8
1965	1,330	1	810	1	536	1	439	1	347	1	307	1	247	1	203	1	156	1
1966	110	25	94.0	25	83.1	25	81.6	23	74.9	22	69.3	20	63.3	20	56.7	22	48.9	24
1967	559	4	462	3	373	3	288	5	208	7	150	8	125	7	108	8	91.1	7
1968	81.0	32	69.0	33	59.1	36	52.7	34	49.2	34	45.5	33	43.6	32	42.7	30	39.7	28
1969	130	22	109	23	94.1	24	82.8	22	71.2	23	64.1	24	56.2	26	54.1	24	51.5	20
1970	777	2	456	4	260	11	224	10	196	8	157	6	132	6	110	6	88.0	9
1971	286	11	271	11	264	10	244	7	211	6	175	5	149	4	124	4	95.8	4
1972	183	16	151	18	117	20	112	18	97.4	18	79.2	18	70.4	18	65.5	18	60.2	17
1973	160	19	157	17	152	17	138	17	128	16	103	16	86.2	15	74.6	15	63.4	14
1974	51.0	40	48.3	39	45.7	39	44.1	38	42.7	36	39.2	35	35.2	36	31.7	37	28.5	37
1975	180	17	174	15	164	16	149	15	139	15	108	14	97.4	14	83.2	14	63.1	15
1976	483	6	399	6	295	9	207	11	141	14	101	17	82.4	17	74.1	16	60.3	16
1977	179	18	171	16	166	15	158	14	142	13	106	15	84.4	16	71.2	17	59.2	18
1978	396	8	380	9	326	6	321	3	263	3	185	4	144	5	120	5	94.9	5
1979	88.0	29	82.7	28	76.0	28	64.5	28	56.2	30	51.2	28	49.6	28	50.1	26	49.1	23
1980	70.0	35	69.0	34	66.0	32	63.9	29	61.3	28	57.3	27	50.8	27	43.9	29	37.0	32
1981	78.0	33	68.7	35	58.9	37	50.7	35	44.6	35	39.1	36	33.0	38	34.1	36	31.0	36
1982	255	12	226	12	185	14	148	16	124	17	117	13	114	10	109	7	91.4	6
1983	222	14	216	13	207	12	189	12	169	11	136	10	113	11	96.0	12	75.4	12
1984	194	15	190	14	188	13	166	13	144	12	132	12	111	12	98.7	11	78.4	10
1985	66.0	37	64.0	37	60.1	35	58.3	33	55.5	32	46.4	32	41.2	34	36.9	35	34.5	35
1986	115	24	107	24	99.6	22	90.2	21	85.9	20	73.1	19	65.3	19	59.5	19	50.3	22
1987	88.0	30	85.0	26	82.1	26	81.1	24	75.9	21	68.6	22	62.8	21	55.0	23	45.3	25
1988	68.0	36	65.7	36	63.0	34	60.9	32	53.3	33	49.7	30	43.3	33	39.4	33	34.7	34
1989	53.0	38	51.0	38	47.1	38	43.6	39	41.1	38	37.0	38	33.6	37	31.2	38	28.3	38
1990	88.0	31	83.0	27	76.4	27	74.2	26	70.7	24	63.2	25	56.3	25	48.4	27	39.6	29
1991	390	9	381	8	350	5	284	6	222	5	153	7	119	9	101	10	77.2	11
1992	52.0	39	47.3	40	43.7	40	42.1	40	41.6	37	38.9	37	37.9	35	38.2	34	36.3	33
1993	434	7	414	5	353	4	289	4	224	4	193	2	160	2	136	2	107	2

Table 21.1. Mean flow, in cubic feet per second, for station 06411500, Rapid Creek below Pactola Dam

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1929	(1)	(1)	(1)	(1)	(1)	(1)	(1)	282	407	160	88.8	77.8	(2)
1930	67.9	57.6	60.0	60.0	55.0	62.4	134	106	71.6	46.8	46.9	41.0	67.5
1931	59.1	38.1	(1)	(1)	(1)	53.5	63.0	53.5	30.5	24.1	23.8	22.5	(2)
1932	28.9	29.4	(1)	(1)	(1)	32.3	72.3	97.9	86.8	(1)	(1)	(1)	(2)
1946	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	33.6	35.9	(2)
1947	41.4	30.6	21.5	19.8	22.6	30.6	76.1	82.8	225	150	59.5	36.6	66.5
1948	31.6	27.8	26.4	20.7	22.1	33.5	64.3	46.9	58.1	68.9	48.6	31.8	40.1
1949	35.4	29.7	18.5	19.4	20.6	34.0	84.9	66.6	106	44.9	34.9	29.2	43.7
1950	32.9	25.0	16.4	17.4	17.2	22.7	92.6	109	53.0	54.6	32.1	32.0	42.2
1951	25.5	17.2	16.9	13.3	14.8	18.3	28.1	43.3	56.7	35.5	39.4	33.8	28.6
1952	21.8	15.8	14.4	13.8	15.6	22.1	71.7	298	112	57.6	45.5	36.0	60.6
1953	30.6	18.2	15.8	21.3	23.6	30.8	38.6	82.0	74.7	41.2	37.3	26.2	36.8
1954	22.5	17.9	17.6	19.2	20.7	26.8	38.4	42.5	33.6	43.0	41.9	24.8	29.2
1955	15.3	15.5	12.8	12.1	13.4	17.4	59.7	58.8	50.4	53.5	43.5	29.6	31.9
1956	17.8	14.4	12.8	13.6	12.5	35.1	31.8	45.3	50.3	43.1	31.4	16.4	27.1
1957	22.4	11.6	11.0	11.0	10.9	7.13	7.83	24.4	6.10	10.1	31.6	29.7	15.4
1958	10.8	6.53	7.90	7.39	7.43	7.71	8.33	29.2	34.9	32.4	31.6	33.0	18.2
1959	25.1	15.5	7.94	8.58	8.82	8.48	26.1	48.9	41.9	52.7	65.1	33.2	28.7
1960	12.2	6.90	7.16	7.16	7.31	7.71	21.8	47.8	36.4	68.2	57.2	40.8	26.8
1961	25.5	17.9	9.10	8.58	9.36	9.42	27.6	43.3	83.3	71.7	36.3	29.7	31.1
1962	12.3	9.80	7.48	8.00	7.07	7.74	13.8	29.4	4.87	5.15	31.2	18.0	13.0
³ 1963	4.40	6.90	6.69	6.21	6.65	6.45	6.50	17.7	23.5	102	46.9	33.9	22.5
1964	23.2	15.6	15.6	16.3	15.0	18.7	64.9	101	191	119	72.4	39.9	57.8
1965	40.0	23.0	20.7	22.6	18.8	25.6	66.5	238	415	168	90.8	66.1	99.8
1966	78.5	36.8	27.4	23.5	25.3	62.5	68.0	74.8	57.8	53.7	29.5	27.0	47.2
1967	27.1	18.7	16.7	16.0	15.5	33.1	48.5	83.2	212	149	72.7	65.3	63.3
1968	32.0	20.2	20.0	20.1	19.5	29.9	26.7	45.1	46.1	53.8	50.3	28.6	32.8
1969	20.0	16.3	15.6	15.4	16.5	17.4	38.7	84.3	64.6	60.3	54.7	55.9	38.4
1970	16.2	17.9	15.5	15.0	15.0	15.1	37.4	150	116	76.8	63.0	61.9	50.2
1971	15.8	14.3	14.0	13.2	13.9	21.8	141	183	142	73.2	73.6	45.6	62.8
1972	15.1	18.1	18.0	18.4	18.8	64.2	39.5	47.3	79.2	127	88.8	58.0	49.5
1973	48.3	24.0	23.3	24.3	21.4	14.3	42.5	126	87.1	90.8	59.3	44.0	50.7
1974	19.9	18.1	15.2	15.5	16.0	15.2	15.4	56.9	49.2	89.8	62.9	33.4	34.2
1975	14.9	11.8	15.4	15.9	15.7	16.0	16.0	36.9	63.2	70.1	56.4	52.2	32.1
1976	15.7	16.0	15.8	15.3	16.5	20.0	20.7	37.3	130	67.6	55.2	45.4	37.9
1977	16.3	16.0	16.0	15.6	15.3	23.1	89.5	112	76.9	79.9	47.7	31.7	45.1
1978	12.7	14.8	14.0	14.8	13.8	14.6	14.8	223	161	62.4	47.5	37.0	52.8
1979	38.3	24.3	23.8	26.4	38.2	38.4	43.5	55.3	67.8	50.4	41.0	39.2	40.5
1980	25.2	28.9	27.1	24.6	18.2	18.6	34.2	68.8	48.6	83.1	66.0	30.1	39.6
1981	13.3	13.3	14.6	14.6	14.3	13.5	18.8	65.5	37.0	75.6	40.7	59.5	31.9
1982	12.9	9.07	12.9	12.6	13.3	12.4	13.0	28.4	26.7	127	107	75.6	37.8
1983	45.8	31.1	28.4	21.5	24.8	44.6	82.5	176	79.8	75.2	46.7	27.6	57.3
1984	14.2	15.0	18.5	21.3	18.0	19.9	54.7	142	114	79.3	84.1	43.5	52.2
1985	20.8	26.0	24.8	24.4	24.3	38.1	48.2	101	62.4	106	50.5	26.4	46.3
1986	14.7	15.4	14.3	14.5	15.0	14.4	20.8	20.3	40.9	37.4	49.9	29.9	24.0
1987	51.5	46.3	24.5	17.2	16.7	32.1	71.5	63.5	47.9	80.7	52.2	32.9	44.9
1988	15.9	13.8	14.0	14.5	14.9	14.5	27.5	60.3	88.6	105	75.3	60.1	42.1
1989	16.5	13.8	14.3	13.8	15.9	14.4	16.3	49.4	85.8	89.4	61.3	21.5	34.5
1990	15.9	14.9	14.5	15.0	15.2	12.3	14.2	43.6	29.0	76.5	45.5	27.7	27.2
1991	11.1	10.0	12.3	10.6	10.9	11.2	11.3	11.1	17.7	43.9	59.1	38.5	20.7
1992	16.4	15.8	16.3	15.5	16.3	17.1	17.0	64.9	36.0	30.5	62.5	35.5	28.7
1993	21.3	15.0	16.7	17.6	16.7	16.0	16.8	17.3	159	117	59.9	64.4	44.9

¹Indicates a no-value month.²Incomplete water year.³Pactola Reservoir filled during water year 1963.

Table E21.2. Statistics on mean flow, in cubic feet per second, for station 06411500, Rapid Creek below Pactola Dam (October 1963 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	30	30	30	30	30	30	30	30	30	30	30	30	30
Maximum	78.5	46.3	28.4	26.4	38.2	64.2	141	238	415	168	107	75.6	99.8
Percentile													
75th	28.3	23.2	21.3	21.3	18.8	30.5	57.2	115	119	105	72.5	58.4	51.1
50th	16.5	16.0	15.9	15.7	16.1	18.0	35.8	65.2	72.3	78.1	59.2	39.5	43.5
25th	15.0	14.7	14.4	14.7	15.0	14.5	16.7	44.7	47.4	61.9	49.3	30.0	33.8
Minimum	11.1	9.07	12.3	10.6	10.9	11.2	11.3	11.1	17.7	30.5	29.5	21.5	20.7
Mean	24.32	19.14	18.01	17.53	17.66	23.63	40.68	85.54	94.41	83.95	60.88	43.48	44.24
Standard deviation	15.26	8.08	4.72	4.16	5.13	13.88	29.45	59.49	78.29	32.08	16.72	14.88	15.18
Skewness	2.03	1.78	1.00	0.71	2.51	1.80	1.59	1.15	2.62	0.77	0.83	0.49	1.62
Coefficient of variation	0.63	0.42	0.26	0.24	0.29	0.59	0.72	0.70	0.83	0.38	0.27	0.34	0.34
Percent of annual flow	4.59	3.62	3.40	3.31	3.34	4.47	7.69	16.16	17.84	15.86	11.50	8.22	¹ 0.336

¹Serial correlation for annual mean flows.

Table E21.3. Serial correlation for 1-year lag for monthly mean flow for station 06411500, Rapid Creek below Pactola Dam (October 1963 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.084	-0.109	-0.029	0.227	-0.067	0.001	0.077	0.149	0.152	-0.093	-0.301	-0.166	

Table E21.4. Correlation matrix for monthly mean flow for station 06411500, Rapid Creek below Pactola Dam (October 1963 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.835	0.791	0.640	0.591	0.596	0.380	0.176	0.108	0.007	-0.343	-0.249
Nov.	*	1.000	0.871	0.630	0.525	0.591	0.400	0.169	-0.013	-0.019	-0.347	-0.379
Dec.	*	*	1.000	0.882	0.732	0.633	0.360	0.209	-0.003	0.007	-0.299	-0.370
Jan.	*	*	*	1.000	0.826	0.533	0.244	0.247	0.151	0.106	-0.179	-0.237
Feb.	*	*	*	*	1.000	0.599	0.204	0.072	-0.031	-0.107	-0.347	-0.263
Mar.	*	*	*	*	*	1.000	0.404	0.077	0.030	0.122	-0.140	-0.154
Apr.	*	*	*	*	*	*	1.000	0.568	0.316	0.141	0.034	-0.103
May	*	*	*	*	*	*	*	1.000	0.627	0.229	0.120	0.050
June	*	*	*	*	*	*	*	*	1.000	0.648	0.384	0.405
July	*	*	*	*	*	*	*	*	*	1.000	0.653	0.563
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.610
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E21.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06411500, Rapid Creek below Pactola Dam

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1964	14.0	17	15.0	20	16.7	25	17.6	25	18.5	26	20.2	25	20.6	25	20.7	22	25.3	24
1965	23.0	29	23.0	29	23.0	29	23.0	29	23.5	29	23.6	29	24.8	29	27.4	28	41.4	29
1966	14.0	18	14.0	17	14.0	15	14.0	15	14.7	16	15.2	15	15.8	18	16.3	17	19.3	19
1967	18.0	27	18.0	27	18.3	27	18.6	27	19.1	27	19.6	24	19.8	22	19.8	21	23.7	21
1968	8.40	4	11.8	9	15.0	19	15.0	19	15.1	22	15.5	18	15.6	14	15.9	16	16.9	15
1969	15.0	22	15.0	21	15.0	20	15.0	20	15.0	19	15.0	13	15.0	12	15.1	11	16.0	11
1970	13.0	14	13.0	13	13.0	11	13.0	10	13.0	7	13.5	7	13.7	5	13.8	3	15.3	10
1971	1.40	1	2.00	1	6.69	1	11.1	6	14.6	15	16.3	20	16.9	20	17.3	20	21.9	20
1972	5.00	2	5.20	2	14.0	16	14.0	16	14.0	12	17.7	22	19.9	23	20.8	23	26.2	25
1973	15.0	23	15.0	22	15.0	21	15.0	21	15.0	20	15.3	16	15.6	15	15.4	12	16.8	14
1974	8.80	5	9.10	4	10.2	6	10.6	5	11.4	5	12.9	4	13.8	7	14.3	9	15.1	9
1975	15.0	24	15.0	23	15.0	22	15.0	22	15.3	23	15.5	19	15.6	16	15.6	13	16.6	13
1976	14.0	19	14.0	18	14.4	17	14.7	17	14.9	18	15.4	17	15.6	17	15.7	14	17.2	16
1977	9.40	8	9.60	7	9.66	3	9.88	3	11.2	4	13.3	6	13.6	4	13.8	4	14.1	4
1978	14.0	20	14.0	19	14.6	18	14.8	18	14.8	17	23.4	28	24.6	28	27.7	29	31.1	27
1979	17.0	26	17.3	26	17.7	26	17.7	26	18.0	25	18.3	23	20.4	24	22.1	25	23.8	22
1980	11.0	9	11.0	8	11.6	7	12.6	9	13.1	9	13.2	5	13.7	6	13.9	5	14.0	3
1981	7.80	3	7.93	3	8.06	2	8.21	1	9.07	1	10.2	1	11.1	2	11.5	2	12.4	2
1982	12.0	10	12.0	10	12.0	8	12.2	8	13.0	8	20.8	26	22.4	26	26.0	27	31.8	28
1983	13.0	15	13.7	16	13.9	14	13.9	14	14.2	13	14.6	12	15.4	13	16.7	19	17.2	17
1984	19.0	28	19.0	28	19.0	28	19.0	28	20.6	28	23.3	27	23.8	27	23.9	26	25.1	23
1985	13.0	16	13.0	14	13.3	12	13.6	12	14.2	14	14.3	11	14.4	11	14.5	10	14.7	7
1986	14.0	21	15.0	24	15.0	23	15.3	24	15.7	24	16.7	21	17.7	21	21.4	24	30.2	26
1987	12.0	11	13.0	15	13.4	13	13.6	13	13.7	11	13.8	9	13.9	8	14.1	6	14.6	5
1988	12.0	12	12.0	11	12.3	10	13.0	11	13.5	10	13.9	10	13.9	9	14.2	7	14.8	8
1989	12.0	13	12.0	12	12.0	9	12.0	7	12.3	6	13.7	8	14.1	10	14.2	8	14.6	6
1990	9.00	6	9.30	5	9.67	4	9.84	2	9.99	2	10.3	2	10.9	1	10.9	1	11.1	1
1991	9.00	7	9.40	6	9.87	5	10.4	4	10.9	3	11.2	3	13.3	3	15.7	15	16.2	12
1992	15.0	25	15.0	25	15.0	24	15.0	23	15.0	21	15.1	14	16.0	19	16.4	18	17.5	18

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E21.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06411500, Rapid Creek below Pactola Dam

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1964	252	8	247	8	245	8	242	5	220	5	159	5	139	5	125	5	98.1	4
1965	515	1	513	1	511	1	505	1	421	1	353	1	280	1	231	1	174	1
1966	144	14	140	17	119	18	102	21	80.9	23	78.5	19	73.2	18	67.8	19	57.9	19
1967	406	2	398	2	397	2	385	2	272	3	182	4	150	4	131	3	105	3
1968	77.0	29	70.3	30	66.4	30	65.0	29	61.7	29	54.1	28	51.5	27	49.2	26	42.8	26
1969	142	16	142	14	139	14	108	19	86.2	21	75.1	21	70.5	20	66.0	21	59.8	16
1970	304	5	278	5	258	5	201	9	152	8	137	8	117	7	104	8	84.3	8
1971	338	4	317	4	282	4	262	4	230	4	193	3	157	2	136	2	111	2
1972	177	12	176	12	164	13	157	12	137	11	120	10	101	12	89.1	12	75.3	9
1973	168	13	168	13	167	12	158	11	132	12	109	12	104	11	94.9	10	75.3	10
1974	113	23	113	22	112	22	108	18	94.4	17	81.9	18	68.6	21	65.7	22	51.6	22
1975	85.0	27	85.0	27	84.1	26	77.4	27	72.3	26	67.7	23	65.9	23	63.9	23	49.2	25
1976	234	9	230	9	227	9	215	7	144	10	101	14	85.2	16	76.9	16	59.3	18
1977	188	11	188	11	182	11	139	13	128	14	105	13	97.2	13	91.2	11	73.1	11
1978	386	3	386	3	372	3	365	3	308	2	197	2	152	3	126	4	91.2	5
1979	101	24	99.3	24	97.4	24	86.9	25	75.3	25	63.6	24	58.9	25	55.6	24	49.7	23
1980	118	22	111	23	107	23	96.2	23	93.7	18	77.6	20	73.1	19	68.6	18	55.4	20
1981	142	17	140	16	125	17	113	16	88.6	20	58.9	26	61.6	24	54.4	25	49.7	24
1982	139	18	137	18	136	15	135	14	130	13	118	11	105	10	85.5	14	63.2	15
1983	268	7	268	6	253	6	210	8	189	7	138	7	118	6	105	7	85.2	7
1984	222	10	221	10	219	10	192	10	144	9	129	9	113	9	107	6	86.7	6
1985	144	15	142	15	131	16	130	15	109	15	89.3	16	91.6	14	81.1	15	68.6	14
1986	76.0	30	72.7	29	67.7	29	54.3	30	51.0	30	44.5	30	42.8	30	39.9	30	33.2	29
1987	97.0	25	96.0	25	93.0	25	88.3	24	81.6	22	70.9	22	66.1	22	67.5	20	59.5	17
1988	123	19	122	20	118	19	112	17	109	16	98.9	15	90.7	15	86.3	13	69.6	13
1989	123	20	120	21	114	21	106	20	92.4	19	88.1	17	85.1	17	72.9	17	54.1	21
1990	122	21	122	19	117	20	99.3	22	79.3	24	62.8	25	54.1	26	49.2	27	39.7	28
1991	78.0	28	78.0	28	77.0	28	72.2	28	62.3	28	57.6	27	47.9	28	40.5	29	30.4	30
1992	91.0	26	88.7	26	83.1	27	79.5	26	66.9	27	51.4	29	44.4	29	49.2	28	41.3	27
1993	270	6	254	7	250	7	236	6	202	6	145	6	116	8	101	9	72.4	12

Table E22.1. Mean flow, in cubic feet per second, for station 06412000, Rapid Creek at Big Bend

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1915	(1)	(1)	(1)	(1)	(1)	(1)	94.7	163	221	182	340	183	(2)
1916	95.5	61.1	53.5	(1)	(1)	(1)	94.2	134	(1)	89.4	61.6	47.7	(2)
1917	52.0	51.8	(1)	33.5	27.9	28.5	50.4	152	177	69.4	53.3	40.8	(2)
1932	(1)	(1)	(1)	(1)	(1)	(1)	81.1	98.7	79.9	47.0	49.9	34.2	(2)
1933	38.1	35.2	22.4	(1)	(1)	47.1	128	359	162	70.3	47.7	39.8	(2)
1934	43.5	43.3	39.2	40.0	39.2	41.6	45.8	30.1	29.2	17.1	19.7	20.1	34.0
1935	27.9	25.2	(1)	(1)	(1)	(1)	37.4	49.9	151	61.4	36.0	28.5	(2)
1936	27.7	30.6	26.0	(1)	(1)	29.9	45.3	31.9	21.8	4.12	9.55	8.01	(2)
1937	17.2	21.5	(1)	(1)	(1)	(1)	(1)	25.1	31.5	30.1	10.5	13.1	(2)
1938	13.4	11.9	10.2	13.9	(1)	(1)	37.3	36.9	24.0	15.9	7.65	9.73	(2)
1939	10.7	13.7	9.55	(1)	(1)	(1)	33.9	26.8	16.9	5.02	11.5	7.60	(2)
1940	11.7	11.9	13.2	10.6	14.8	15.1	25.8	19.5	13.0	6.68	6.65	6.35	12.9
1941	9.94	11.1	9.77	8.90	9.61	13.9	48.4	43.9	143	53.0	29.4	18.1	33.2
1942	21.3	20.2	13.3	9.32	11.1	17.3	78.6	229	150	58.3	33.9	25.9	55.9
1943	31.0	27.9	14.1	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)

¹Indicates a no-value month.²Incomplete water year.**Table E22.2.** Statistics on mean flow, in cubic feet per second, for station 06412000, Rapid Creek at Big Bend (October 1932 through September 1942)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	10	10	(1)	(1)	(1)	(1)	9	10	10	10	10	10	(1)
Maximum	43.5	43.3	(1)	(1)	(1)	(1)	128	359	162	70.3	47.7	39.8	(1)
Percentile													
75th	30.5	31.7	(1)	(1)	(1)	(1)	63.5	94.7	150	59.1	34.4	26.5	(1)
50th	19.2	20.8	(1)	(1)	(1)	(1)	45.3	34.4	30.3	23.6	15.6	15.6	(1)
25th	11.5	11.9	(1)	(1)	(1)	(1)	35.6	26.4	20.6	6.27	9.07	7.91	(1)
Minimum	9.4	11.1	(1)	(1)	(1)	(1)	25.8	19.5	13.0	4.12	6.65	6.35	(1)
Mean	22.14	22.46	(1)	(1)	(1)	(1)	53.39	85.21	74.24	32.19	21.25	17.72	(1)
Standard deviation	11.86	11.08	(1)	(1)	(1)	(1)	31.63	114.57	66.86	26.02	14.50	10.99	(1)
Skewness	0.74	0.73	(1)	(1)	(1)	(1)	2.00	2.05	0.48	0.32	0.68	0.89	(1)
Coefficient of variation	0.54	0.49	(1)	(1)	(1)	(1)	0.59	1.34	0.90	0.81	0.68	0.62	(1)
Percent of annual flow	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)

¹Statistic not computed.**Table E22.3.** Serial correlation for 1-year lag for monthly mean flow for station 06412000, Rapid Creek at Big Bend (October 1932 through September 1942)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.781	0.675	(1)	(1)	(1)	(1)	0.115	-0.106	-0.012	-0.144	0.186	0.309	

¹Statistic not computed.

Table E22.4. Correlation matrix for monthly mean flow for station 06412000, Rapid Creek at Big Bend (October 1932 through September 1942)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.979	0.915	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Nov.	*	1.000	0.946	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Dec.	*	*	1.000	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Jan.	*	*	*	1.000	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Feb.	*	*	*	*	1.000	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Mar.	*	*	*	*	*	1.000	(1)	(1)	(1)	(1)	(1)	(1)
Apr.	*	*	*	*	*	*	1.000	0.973	0.644	0.683	0.781	0.815
May	*	*	*	*	*	*	*	1.000	0.682	0.701	0.786	0.813
June	*	*	*	*	*	*	*	*	1.000	0.969	0.946	0.860
July	*	*	*	*	*	*	*	*	*	1.000	0.934	0.901
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.964
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

¹Statistic not computed.

Table E22.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06412000, Rapid Creek at Big Bend

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1939	2.20	2	2.40	2	2.63	2	3.22	2	4.50	2	7.48	2	7.99	2	8.68	2	10.0	2
1940	1.30	1	1.43	1	1.77	1	1.86	1	2.48	1	4.82	1	6.34	1	7.20	1	8.20	1
1941	8.00	3	8.00	3	8.00	3	8.36	3	9.00	3	9.68	3	10.6	3	11.8	3	14.9	3

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E22.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06412000, Rapid Creek at Big Bend

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1940	60.0	3	37.3	3	33.9	3	31.6	3	27.7	3	24.1	3	21.5	3	19.1	3	16.8	3
1941	486	1	418	1	326	2	221	2	152	2	98.5	2	84.6	2	72.4	2	56.1	2
1942	389	2	375	2	363	1	318	1	256	1	191	1	155	1	131	1	96.2	1

Table E23.1. Mean flow, in cubic feet per second, for station 06412500, Rapid Creek above Canyon Lake, near Rapid City

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1946	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	43.1	44.5	(2)
1947	54.8	37.9	24.5	26.2	26.7	37.8	92.1	90.7	251	191	66.7	41.1	78.5
1948	30.1	26.9	28.8	25.1	27.6	39.7	66.1	52.8	58.4	71.5	58.4	32.6	43.2
1949	35.9	29.6	18.4	17.3	18.8	31.7	81.2	64.8	105	44.0	29.1	24.5	41.7
1950	26.9	18.0	9.29	11.6	11.0	17.8	91.2	109	51.9	49.9	27.2	23.4	37.4
1951	19.3	12.2	14.1	12.3	13.0	18.1	24.5	36.8	51.6	33.9	34.0	29.9	25.0
1952	21.0	13.2	7.15	9.42	9.38	17.0	59.7	287	126	53.7	37.5	29.5	56.1
1953	25.8	14.0	13.0	17.7	17.8	26.7	33.5	83.4	73.3	38.4	34.3	19.2	33.2
1954	17.3	11.9	9.77	8.61	15.3	18.1	31.9	33.1	28.1	34.8	36.5	16.6	21.9
1955	8.72	7.10	4.35	3.42	5.39	8.42	50.5	53.7	46.2	46.5	40.3	25.9	25.1
1956	12.9	6.47	7.40	6.23	6.76	27.6	25.7	38.5	48.6	35.5	29.4	11.5	21.4
1957	16.5	5.33	4.10	2.81	2.57	1.89	1.36	42.3	27.0	23.1	32.7	28.2	15.8
1958	10.3	3.86	2.71	2.82	2.66	4.23	3.67	26.1	35.7	28.7	28.4	27.0	14.7
1959	19.5	11.7	4.23	1.55	2.96	6.84	22.7	42.1	33.7	47.5	51.5	25.2	22.6
1960	9.89	2.09	3.11	1.13	1.48	2.42	8.52	33.0	27.8	52.3	46.6	29.6	18.3
1961	20.7	14.4	2.47	2.19	2.62	2.40	15.1	31.4	67.7	64.6	23.9	20.5	22.4
1962	7.45	3.68	.64	.81	1.73	2.47	4.94	36.0	78.7	48.5	33.2	20.0	19.9
³ 1963	5.77	5.09	3.35	1.85	3.71	2.86	8.82	26.2	77.6	119	52.0	35.9	28.7
1964	27.5	14.8	8.84	6.94	12.0	15.4	56.5	95.3	181	112	70.0	35.9	53.0
1965	35.1	18.5	15.4	13.3	13.0	20.3	66.6	263	445	186	95.4	69.6	104
1966	89.7	36.3	24.2	19.1	20.0	62.4	70.5	76.1	61.7	50.6	27.0	23.3	46.9
1967	24.9	16.5	10.2	10.5	10.0	29.4	46.1	80.0	251	182	73.8	61.4	66.5
1968	29.3	17.2	12.6	15.6	12.0	26.7	27.3	43.3	48.0	50.2	41.6	22.4	29.0
1969	16.5	12.6	8.60	8.08	10.7	13.5	31.2	70.7	55.2	48.8	47.5	39.9	30.4
1970	12.5	11.1	8.60	8.50	12.7	10.7	32.8	140	131	80.2	62.7	56.8	47.5
1971	19.8	15.3	9.23	10.6	10.4	23.7	157	212	162	74.1	72.0	41.5	67.5
1972	14.1	16.5	12.1	10.9	16.3	56.5	38.0	49.5	330	149	90.5	57.0	69.8
1973	46.5	22.8	19.3	19.1	18.3	13.2	42.7	132	89.8	87.0	60.0	40.7	49.5
1974	14.9	14.0	9.29	7.54	10.4	9.09	10.1	52.9	42.9	84.5	52.8	23.0	27.8
1975	7.61	4.60	8.71	7.13	8.00	9.25	15.4	30.8	60.2	61.9	54.8	42.7	26.0
1976	10.2	7.79	9.90	11.7	11.5	13.2	13.5	33.1	165	71.2	49.6	41.9	36.5
1977	12.7	11.4	11.7	11.1	11.9	17.0	84.2	112	68.5	70.6	40.1	22.4	39.6
1978	7.16	7.05	6.51	7.06	10.3	17.6	14.1	266	177	63.7	44.8	34.6	55.0
1979	32.4	18.6	15.6	15.5	27.8	32.9	37.7	51.3	83.1	55.1	41.7	34.5	37.2
1980	18.3	20.9	20.7	19.4	13.3	9.77	30.3	70.5	48.3	81.9	57.1	22.6	34.6
1981	6.43	5.33	4.66	5.67	6.39	5.55	10.0	60.9	32.1	75.1	33.1	43.7	24.2
1982	3.82	.71	6.48	3.82	5.55	4.84	4.28	28.0	30.7	134	107	77.4	34.2
1983	42.6	19.6	15.1	20.4	21.1	36.5	78.7	186	96.4	75.8	42.7	24.6	55.2
1984	10.7	10.4	10.5	18.8	15.2	13.4	56.5	153	135	80.5	65.0	34.3	50.4
1985	15.1	23.2	23.9	26.7	20.9	37.4	42.8	87.7	48.5	93.3	42.0	21.4	40.5
1986	8.34	7.08	7.89	6.98	8.86	8.95	17.3	22.0	42.3	33.4	44.5	22.8	19.2
1987	49.2	44.2	21.6	13.5	14.5	24.9	61.9	55.1	44.7	65.8	45.1	24.8	38.9
1988	9.00	6.36	5.18	6.21	6.94	10.7	19.6	48.4	82.8	101	64.8	45.9	34.0
1989	6.67	6.01	6.81	6.44	5.15	5.96	8.67	47.5	77.3	75.5	55.3	14.1	26.5
1990	5.61	7.03	6.44	6.71	4.86	4.09	4.46	40.1	20.7	71.3	36.0	18.4	19.0
1991	1.38	1.20	.12	.094	.094	.29	3.55	30.2	45.9	42.3	54.2	29.2	17.5
1992	8.06	7.31	5.87	9.81	10.3	10.7	10.4	55.1	31.1	23.2	50.1	25.0	20.7
1993	13.0	5.49	6.54	8.89	9.27	11.6	11.6	31.2	217	142	60.5	62.5	48.3

¹Indicates a no-value month.²Incomplete water year.³Pactola Reservoir filled during water year 1963.

Table E23.2. Statistics on mean flow, in cubic feet per second, for station 06412500, Rapid Creek above Canyon Lake, near Rapid City (October 1963 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	30	30	30	30	30	30	30	30	30	30	30	30	30
Maximum	89.7	44.2	24.2	26.7	27.8	62.4	157	266	445	186	107	77.4	104
Percentile													
75th	27.9	18.5	15.2	15.5	14.7	25.3	56.5	117	163	95.2	64.8	44.2	51.0
50th	13.5	12.0	9.26	10.2	11.1	13.3	30.7	58.0	72.9	75.3	53.5	34.5	38.0
25th	7.95	6.86	6.53	6.97	8.65	9.21	11.3	42.5	45.6	60.2	42.5	22.9	27.5
Minimum	1.38	0.71	0.12	0.094	0.094	0.29	3.55	22.0	20.7	23.2	27.0	14.1	17.5
Mean	19.97	13.66	11.09	11.20	11.92	18.52	36.79	87.46	110.14	84.07	56.06	37.14	41.65
Standard deviation	18.39	9.60	5.97	5.89	5.70	14.69	32.79	67.68	97.63	39.69	18.29	16.42	18.77
Skewness	2.20	1.44	0.82	0.72	0.68	1.58	1.85	1.52	1.93	1.19	1.10	0.83	1.34
Coefficient of variation	0.92	0.70	0.54	0.53	0.48	0.79	0.89	0.77	0.89	0.47	0.33	0.44	0.45
Percent of annual flow	4.01	2.74	2.23	2.25	2.39	3.72	7.39	17.56	22.12	16.88	11.26	7.46	¹ 0.386

¹Serial correlation for annual mean flows.

Table E23.3. Serial correlation for 1-year lag for monthly mean flow for station 06412500, Rapid Creek above Canyon Lake, near Rapid City (October 1963 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.149	0.020	0.038	0.138	0.187	0.153	0.127	0.125	0.096	-0.140	-0.206	-0.108	

Table E23.4. Correlation matrix for monthly mean flow for station 06412500, Rapid Creek above Canyon Lake, near Rapid City (October 1963 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.845	0.748	0.567	0.630	0.680	0.480	0.202	0.087	0.010	-0.211	-0.127
Nov.	*	1.000	0.883	0.674	0.667	0.663	0.508	0.169	0.049	0.015	-0.211	-0.245
Dec.	*	*	1.000	0.873	0.781	0.644	0.427	0.172	0.029	0.058	-0.178	-0.222
Jan.	*	*	*	1.000	0.822	0.588	0.428	0.273	0.037	0.013	-0.219	-0.261
Feb.	*	*	*	*	1.000	0.711	0.428	0.264	0.134	0.001	-0.179	-0.120
Mar.	*	*	*	*	*	1.000	0.475	0.165	0.309	0.164	-0.070	-0.025
Apr.	*	*	*	*	*	*	1.000	0.576	0.285	0.108	0.091	-0.014
May	*	*	*	*	*	*	*	1.000	0.503	0.214	0.181	0.153
June	*	*	*	*	*	*	*	*	1.000	0.758	0.603	0.612
July	*	*	*	*	*	*	*	*	*	1.000	0.738	0.734
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.771
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E23.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06412500, Rapid Creek above Canyon Lake, near Rapid City

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1964	8.00	28	8.33	26	8.93	26	9.46	23	10.6	22	12.7	23	13.7	22	14.4	22	19.4	23
1965	5.00	16	12.7	29	15.0	29	17.5	29	19.1	29	19.4	29	20.2	28	23.7	29	41.3	29
1966	5.00	17	5.17	16	6.00	16	7.50	17	8.97	17	9.42	16	10.1	16	11.1	17	14.9	18
1967	5.00	18	6.00	18	6.57	18	7.50	18	9.43	19	12.3	22	13.0	21	14.0	21	19.0	22
1968	6.00	22	6.17	19	6.71	19	7.07	16	7.78	16	7.93	12	9.04	14	9.88	15	11.7	15
1969	5.00	19	5.50	17	5.79	15	6.36	15	7.47	14	8.18	14	9.09	15	9.68	13	10.8	13
1970	7.00	23	7.33	23	7.79	21	7.93	19	9.07	18	9.75	17	10.1	17	11.0	16	14.9	19
1971	.45	5	.95	5	6.15	17	9.29	21	10.6	23	11.1	19	12.7	20	13.2	20	18.1	21
1972	7.00	24	7.00	21	7.43	20	8.64	20	13.1	25	15.7	26	16.8	26	17.4	24	23.4	25
1973	2.40	11	2.50	10	2.69	7	2.77	6	5.62	12	8.06	13	8.63	12	9.02	12	11.0	14
1974	.10	4	2.87	12	3.77	12	4.13	12	4.50	9	5.67	8	6.57	9	6.64	8	7.63	7
1975	3.50	14	4.13	14	4.63	14	5.38	14	7.62	15	8.30	15	8.79	13	9.72	14	10.7	12
1976	5.60	20	7.10	22	7.99	22	10.3	26	10.9	24	11.3	20	11.3	19	11.4	18	12.8	16
1977	2.50	12	3.10	13	3.27	10	3.48	8	3.93	6	6.11	9	6.01	7	6.55	7	9.30	10
1978	7.30	25	9.50	28	10.1	27	10.8	27	13.3	27	14.7	25	16.2	25	19.1	27	23.8	26
1979	7.50	26	8.17	24	8.50	23	9.57	24	9.73	20	11.5	21	14.1	23	15.8	23	17.1	20
1980	1.00	9	1.43	7	2.04	4	2.36	4	3.57	4	4.62	4	4.83	3	5.30	3	5.68	3
1981	.040	3	.11	3	.15	2	.36	2	.60	2	1.19	2	3.12	2	3.28	2	4.34	2
1982	2.60	13	2.73	11	2.91	9	3.54	9	4.28	8	15.8	27	17.4	27	18.3	25	25.1	27
1983	7.60	27	8.27	25	8.86	25	9.38	22	9.92	21	10.3	18	10.4	18	12.2	19	12.8	17
1984	8.00	29	9.33	27	11.0	28	11.4	28	14.7	28	18.9	28	20.5	29	22.2	28	22.9	24
1985	4.00	15	4.20	15	4.54	13	5.29	13	6.14	13	6.71	11	6.93	11	7.25	10	8.01	8
1986	5.80	21	6.57	20	8.71	24	10.1	25	13.1	26	13.7	24	15.0	24	18.5	26	27.1	28
1987	2.00	10	2.00	9	2.07	5	2.46	5	3.58	5	4.99	5	5.45	5	5.75	5	7.40	6
1988	.87	8	1.09	6	2.10	6	4.07	11	4.72	10	5.49	6	5.83	6	6.03	6	6.28	5
1989	.78	7	.81	4	2.74	8	3.29	7	4.06	7	4.46	3	5.23	4	5.52	4	5.79	4
1990	.0000	1	.0000	1	.0000	1	.0000	1	.020	1	.061	1	.093	1	.15	1	.59	1
1991	.0000	2	.020	2	.16	3	1.47	3	3.55	3	6.40	10	6.91	10	7.66	11	8.66	9
1992	.66	6	1.72	8	3.39	11	4.05	10	4.92	11	5.54	7	6.30	8	7.16	9	9.32	11

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E23.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06412500, Rapid Creek above Canyon Lake, near Rapid City

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1964	261	9	247	9	239	9	228	8	208	7	149	7	131	7	117	7	91.6	6
1965	562	2	553	2	543	2	516	2	450	1	383	1	305	1	250	1	187	1
1966	134	15	133	15	124	15	118	15	91.4	17	79.8	16	75.4	18	69.7	16	58.2	17
1967	435	3	434	3	429	3	414	3	320	4	218	5	174	4	149	4	116	4
1968	76.0	29	67.3	30	60.1	30	60.0	29	53.9	29	49.6	28	48.6	26	46.2	27	40.2	26
1969	121	20	119	20	117	18	90.1	23	72.3	24	63.5	22	58.8	23	55.5	24	49.0	21
1970	240	10	236	11	226	11	175	11	142	11	137	10	121	10	107	10	84.1	10
1971	382	5	364	5	324	5	298	5	260	5	222	4	178	3	152	3	121	2
1972	2,600	1	1,705	1	902	1	529	1	349	3	250	2	191	2	158	2	119	3
1973	173	13	172	13	167	13	159	12	136	13	114	13	106	12	96.6	11	75.6	11
1974	113	24	101	23	101	23	97.5	20	88.2	19	75.3	19	62.4	21	59.5	20	44.7	23
1975	73.0	30	72.0	29	70.9	28	66.9	28	62.1	26	61.6	23	59.9	22	57.5	23	44.4	24
1976	376	6	284	7	276	7	262	7	182	9	120	12	97.3	13	84.8	14	62.2	14
1977	192	12	191	12	185	12	142	14	129	14	105	14	93.3	14	86.1	13	66.4	12
1978	433	4	430	4	427	4	412	4	354	2	227	3	172	5	140	5	100	5
1979	132	16	125	17	121	16	106	18	87.1	20	71.6	21	65.3	20	59.3	21	50.6	20
1980	114	23	111	22	104	22	95.4	21	91.3	18	72.8	20	72.2	19	68.0	18	52.1	18
1981	126	18	126	16	114	20	104	19	83.2	21	55.5	25	57.3	24	50.3	25	42.7	25
1982	155	14	149	14	147	14	146	13	138	12	122	11	109	11	88.9	12	64.0	13
1983	276	8	275	8	264	8	220	9	195	8	147	8	126	8	110	9	87.1	9
1984	240	11	237	10	228	10	202	10	155	10	145	9	126	9	111	8	87.9	7
1985	126	19	125	18	118	17	115	16	95.1	16	75.7	18	78.4	16	69.1	17	59.0	16
1986	83.0	27	76.0	28	69.1	29	51.8	30	45.5	30	39.7	30	40.1	29	36.4	30	30.4	30
1987	82.0	28	81.0	26	77.1	26	72.7	25	66.6	25	59.5	24	56.9	25	58.1	22	50.7	19
1988	121	21	120	19	116	19	107	17	106	15	95.7	15	84.4	15	77.4	15	60.6	15
1989	104	25	99.7	24	94.7	24	87.1	24	81.7	22	77.4	17	76.1	17	65.3	19	46.6	22
1990	116	22	114	21	111	21	93.2	22	73.5	23	55.3	26	46.4	28	42.8	28	32.1	29
1991	128	17	97.3	25	83.1	25	67.3	27	56.2	28	53.1	27	48.2	27	47.4	26	34.3	27
1992	91.0	26	78.7	27	73.3	27	70.6	26	58.6	27	44.5	29	37.2	30	40.8	29	32.6	28
1993	315	7	301	6	299	6	286	6	255	6	184	6	142	6	122	6	87.3	8

Table E24.1. Mean flow, in cubic feet per second, for station 06414000, Rapid Creek at Rapid City

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1903	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	163	117	75	73	(2)
1904	63	52	39	34	34	58	120	142	434	175	81.3	88.0	110
1905	86.8	85.5	71.6	55	55	72.5	83.2	173	131	359	195	102	123
1906	84.2	80	50	50	50	75	67.7	126	148	74.3	166	87.1	88.5
1907	81.7	70.5	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)
1942	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	78.5	50.7	42.5	(2)
1943	47.2	47.0	37.1	38.7	47.5	90.9	202	102	274	114	45.5	40.9	90.3
1944	42.0	47.5	36.7	35.5	43.0	46.0	95.4	98.8	131	77.8	40.9	38.0	61.0
1945	46.0	47.0	34.1	33.8	37.3	57.5	65.7	60.6	115	74.5	69.4	43.8	57.1
1946	43.1	40.2	33.6	37.3	32.6	43.5	54.4	225	296	177	65.0	69.0	93.3
1947	74.7	57.9	52.8	52.7	55.6	60.5	108	115	288	209	81.1	59.3	101
1948	52.6	54.8	53.2	44.8	47.9	62.3	85.5	72.5	83.6	95.4	78.4	52.6	65.3
1949	57.1	53.2	40.2	37.6	44.8	62.4	110	92.0	123	66.6	53.2	48.7	65.7
1950	50.7	47.8	36.3	35.1	35.5	40.9	110	136	68.9	68.0	46.7	47.9	60.4
1951	36.5	34.5	32.5	30.9	34.4	39.8	42.2	56.0	75.6	53.2	52.7	57.4	45.5
1952	48.0	37.0	33.1	33.6	34.9	40.5	77.1	303	139	67.3	49.7	40.9	75.6
1953	41.7	31.6	30.3	35.6	35.1	47.9	59.9	107	101	53.9	50.8	33.1	52.4
1954	35.4	32.2	29.6	25.9	36.3	42.0	52.3	49.2	48.8	43.9	49.7	27.8	39.4
1955	26.1	29.2	25.1	22.5	26.9	30.9	63.6	62.5	63.5	59.4	55.2	36.0	41.8
1956	32.8	25.5	26.5	29.9	24.0	41.0	41.0	51.2	53.1	43.5	41.2	22.3	36.1
1957	27.1	28.4	20.5	17.7	18.1	15.1	13.8	73.4	50.9	43.2	42.8	41.0	32.8
1958	25.7	21.5	23.3	24.6	19.9	21.9	20.0	38.1	53.7	46.3	33.3	33.5	30.2
1959	29.3	27.1	21.8	18.6	18.0	16.4	31.3	54.5	39.0	52.5	52.8	34.2	33.1
1960	25.9	13.6	15.7	15.4	16.2	19.3	21.7	43.6	41.2	54.6	49.7	33.7	29.3
1961	27.4	28.8	18.7	17.8	17.6	16.3	26.7	40.8	67.2	62.8	18.9	24.6	30.7
1962	16.4	17.1	11.7	10.5	13.5	16.3	13.0	52.4	120	86.8	34.4	27.8	35.1
³ 1963	24.6	22.8	17.3	16.3	19.0	21.2	27.6	40.1	106	121	55.1	54.8	43.9
1964	39.0	30.8	29.6	29.8	27.6	31.1	65.6	107	190	115	73.8	46.0	65.5
1965	49.6	33.8	32.5	32.5	32.7	37.7	78.9	321	487	198	95.6	82.8	124
1966	98.4	58.5	45.8	36.0	40.0	75.7	90.4	83.5	65.0	62.7	42.4	36.3	61.4
1967	41.9	35.2	27.2	26.6	25.1	43.2	64.9	94.5	293	185	77.8	74.3	82.5
1968	46.9	39.1	36.2	34.4	36.3	45.5	43.7	54.0	69.4	52.8	52.0	35.3	45.5
1969	29.0	32.4	20.4	26.0	29.2	31.5	42.4	85.4	65.7	62.1	45.3	52.2	43.5
1970	26.8	26.8	23.7	20.8	27.6	27.7	47.1	157	154	80.2	68.2	66.7	60.7
1971	32.0	32.2	24.8	23.1	31.4	32.9	182	230	175	83.2	73.3	58.6	81.6
1972	34.4	38.5	32.9	30.5	31.2	72.9	55.1	63.0	449	169	101	72.3	95.5
1973	65.7	41.9	37.4	38.1	36.4	31.7	66.8	158	98.7	98.1	62.2	61.9	66.6
1974	35.5	35.5	33.3	28.2	28.7	27.7	28.7	59.9	47.3	90.9	64.7	36.4	43.3
1975	24.6	22.3	23.3	21.5	21.5	24.8	33.5	46.9	86.5	71.1	60.3	51.2	40.7
1976	25.2	26.3	27.1	26.4	26.6	29.4	30.5	52.6	191	98.1	67.9	55.4	54.6
1977	29.9	30.1	34.1	20.9	29.1	43.6	120	119	78.6	79.7	54.2	37.2	56.4
1978	30.3	27.8	33.0	15.9	15.9	31.7	31.3	253	196	77.6	59.3	44.5	68.4
1979	49.8	40.1	36.4	34.5	48.9	48.5	56.9	65.7	83.5	65.1	61.7	40.1	52.6
1980	34.7	38.2	36.3	37.7	28.9	29.1	49.3	79.6	52.3	71.4	66.5	34.7	46.7
1981	23.0	25.5	24.8	24.0	25.7	22.8	17.6	90.8	36.0	84.5	39.5	56.6	39.4
1982	22.1	20.8	23.5	22.6	23.5	23.8	23.1	54.2	52.9	153	126	95.5	53.7
1983	67.0	36.1	38.4	37.8	36.0	52.0	97.9	199	106	80.8	54.6	37.2	70.5
1984	30.1	35.1	34.9	40.2	32.9	32.8	74.5	166	153	93.4	90.6	60.3	70.4
1985	38.8	35.5	39.9	44.8	44.9	57.6	61.0	98.3	57.7	90.5	54.3	34.4	55.0
1986	27.6	26.1	26.2	27.8	30.3	30.2	40.7	42.7	53.3	45.8	51.2	48.3	37.5
1987	72.3	65.9	43.6	34.6	30.5	41.4	79.4	76.7	51.7	66.7	62.7	44.9	56.0
1988	26.0	28.2	24.8	26.2	26.7	27.5	30.8	61.5	67.2	85.9	59.4	42.2	42.3
1989	15.4	23.0	24.1	23.2	21.1	25.1	22.5	49.5	77.1	74.3	60.0	26.5	36.9
1990	24.0	23.3	20.8	18.8	19.1	19.8	18.1	55.1	28.0	73.5	46.4	28.4	31.5
1991	17.2	21.6	20.1	19.3	20.7	18.3	24.5	60.5	68.9	53.6	65.7	42.9	36.2
1992	24.4	26.5	25.1	27.5	31.2	30.5	28.7	69.5	45.0	46.0	63.7	42.6	38.5
1993	31.3	21.8	20.8	24.5	26.1	29.6	40.0	62.7	261	160	77.9	81.5	69.8

¹Indicates a no-value month.

²Incomplete water year.

³Pactola Reservoir filled during water year 1963.

Table E24.2. Statistics on mean flow, in cubic feet per second, for station 06414000, Rapid Creek at Rapid City (October 1963 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	30	30	30	30	30	30	30	30	30	30	30	30	30
Maximum	98.4	65.9	45.8	44.8	48.9	75.7	182	321	487	198	126	95.5	124
Percentile													
75th	43.2	36.6	36.2	34.5	32.7	43.3	68.7	128	179	98.1	73.4	60.7	68.7
50th	30.8	31.5	28.4	27.0	29.0	31.3	45.4	78.1	77.9	80.5	62.4	45.4	54.8
25th	25.0	25.9	24.0	23.0	25.5	27.6	30.0	58.7	53.2	66.3	54.3	37.0	41.9
Minimum	15.4	20.8	20.1	15.9	15.9	18.3	17.6	42.7	28.0	45.8	39.5	26.5	31.5
Mean	37.10	32.63	30.03	28.47	29.53	35.87	54.86	103.89	127.99	92.27	65.94	50.91	57.57
Standard deviation	18.27	10.16	7.21	7.20	7.20	14.02	35.01	69.00	114.61	40.45	18.39	17.25	20.10
Skewness	1.77	1.68	0.42	0.40	0.70	1.52	1.90	1.73	1.98	1.41	1.46	0.90	1.41
Coefficient of variation	0.49	0.31	0.24	0.25	0.24	0.39	0.64	0.66	0.90	0.44	0.28	0.34	0.35
Percent of annual flow	5.38	4.73	4.36	4.13	4.28	5.20	7.96	15.07	18.56	13.38	9.56	7.38	¹ 0.364

¹Serial correlation for annual mean flows.

Table E24.3. Serial correlation for 1-year lag for monthly mean flow for station 06414000, Rapid Creek at Rapid City (October 1963 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.125	0.091	0.167	0.358	-0.021	0.099	0.070	0.079	0.059	-0.101	-0.301	-0.069	

Table E24.4. Correlation matrix for monthly mean flow for station 06414000, Rapid Creek at Rapid City (October 1963 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.866	0.807	0.615	0.603	0.676	0.446	0.224	0.045	0.006	-0.177	-0.101
Nov.	*	1.000	0.844	0.641	0.574	0.652	0.427	0.090	-0.009	-0.088	-0.148	-0.187
Dec.	*	*	1.000	0.754	0.657	0.708	0.402	0.220	-0.009	-0.077	-0.115	-0.282
Jan.	*	*	*	1.000	0.807	0.556	0.270	0.077	0.002	0.019	0.001	-0.128
Feb.	*	*	*	*	1.000	0.659	0.415	0.074	-0.032	-0.090	-0.111	-0.127
Mar.	*	*	*	*	*	1.000	0.429	0.077	0.298	0.156	-0.016	-0.065
Apr.	*	*	*	*	*	*	1.000	0.536	0.219	0.077	0.051	0.043
May	*	*	*	*	*	*	*	1.000	0.487	0.285	0.179	0.257
June	*	*	*	*	*	*	*	*	1.000	0.807	0.566	0.614
July	*	*	*	*	*	*	*	*	*	1.000	0.722	0.773
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.758
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E24.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06414000, Rapid Creek at Rapid City

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1964	10.0	5	13.3	7	27.4	25	29.2	25	30.3	24	31.5	22	32.2	21	32.2	19	36.6	21
1965	23.0	23	23.0	22	26.0	24	30.1	27	34.6	28	37.7	29	39.8	29	43.8	29	58.9	29
1966	20.0	19	21.0	20	22.4	18	23.5	18	24.9	17	25.6	16	25.8	14	27.2	16	31.5	17
1967	25.0	26	29.7	28	30.4	28	32.6	28	33.4	27	34.5	25	35.3	24	36.0	24	39.8	23
1968	15.0	12	16.0	13	17.4	12	18.2	10	20.1	9	23.0	10	24.7	10	26.3	14	28.1	14
1969	15.0	13	15.3	10	16.4	10	17.7	8	19.3	8	22.1	8	23.3	8	24.1	8	25.7	7
1970	13.0	10	15.3	11	19.6	14	20.6	14	21.2	11	22.5	9	25.2	11	26.0	11	29.2	15
1971	18.0	16	19.3	18	24.3	20	25.8	20	29.0	22	30.6	20	31.5	19	33.1	21	36.8	22
1972	22.0	22	23.3	23	25.1	22	25.9	21	30.7	25	34.1	24	35.4	25	35.8	23	42.1	24
1973	20.0	20	20.7	19	22.0	17	22.6	16	26.8	19	28.0	18	28.1	18	29.4	18	31.7	18
1974	9.20	4	15.3	12	15.9	9	16.6	6	18.8	6	20.4	5	21.4	5	21.9	4	23.1	5
1975	18.0	17	18.7	16	20.0	15	22.9	17	24.6	16	25.5	15	25.9	15	26.1	12	26.8	11
1976	12.0	7	12.7	6	14.7	7	15.6	5	19.1	7	24.7	12	27.8	17	28.1	17	31.4	16
1977	8.60	3	8.60	2	8.60	1	9.05	1	12.5	1	15.8	1	20.4	3	23.0	6	25.9	8
1978	23.0	24	23.3	24	24.3	21	25.9	22	31.3	26	35.2	26	36.4	26	39.5	28	42.2	25
1979	23.0	25	24.0	25	25.9	23	26.8	23	28.0	20	28.6	19	31.9	20	32.8	20	34.2	20
1980	12.0	8	12.0	4	13.9	5	16.6	7	22.8	13	24.1	11	24.2	9	24.3	9	24.3	6
1981	6.70	1	8.53	1	10.7	2	14.2	3	17.6	4	20.8	6	21.8	6	22.0	5	22.8	4
1982	16.0	15	19.0	17	20.6	16	21.5	15	22.9	14	36.3	28	36.6	27	36.5	25	44.1	27
1983	25.0	27	26.0	26	27.4	26	28.6	24	28.9	21	31.1	21	32.2	22	33.6	22	33.8	19
1984	27.0	29	31.7	29	32.6	29	33.5	29	35.1	29	35.9	27	37.6	28	39.4	27	42.6	26
1985	21.0	21	22.7	21	23.0	19	23.9	19	24.9	18	26.1	17	26.4	16	26.9	15	28.0	13
1986	25.0	28	26.3	27	28.7	27	29.4	26	30.2	23	31.8	23	33.3	23	37.5	26	47.0	28
1987	15.0	14	16.0	14	17.0	11	20.0	13	22.1	12	24.7	13	25.6	13	26.2	13	26.6	10
1988	7.30	2	9.43	3	10.8	3	11.9	2	15.2	2	18.9	2	20.7	4	21.4	3	22.0	3
1989	12.0	9	13.3	8	15.6	8	17.9	9	18.7	5	19.0	3	19.3	1	19.6	2	21.0	2
1990	11.0	6	12.0	5	13.3	4	14.9	4	16.9	3	19.3	4	19.4	2	19.5	1	19.5	1
1991	13.0	11	13.7	9	14.3	6	18.6	11	24.3	15	25.3	14	25.2	12	25.5	10	27.4	12
1992	18.0	18	18.3	15	19.0	13	19.5	12	20.4	10	21.1	7	22.3	7	23.2	7	25.9	9

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E24.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06414000, Rapid Creek at Rapid City

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1964	250	12	246	11	241	11	237	8	215	8	157	10	140	8	123	8	99.6	8
1965	628	2	605	2	595	2	575	2	506	1	433	1	342	1	279	1	210	1
1966	142	23	139	19	128	18	119	16	101	16	95.2	15	87.4	15	80.0	15	70.4	16
1967	487	4	483	3	473	3	452	3	356	3	241	4	193	4	164	4	131	4
1968	110	28	93.3	30	79.4	30	72.4	29	70.2	29	62.9	27	59.6	27	57.4	27	53.0	25
1969	147	22	146	17	143	16	109	19	87.2	22	76.1	23	71.7	22	65.4	24	58.9	20
1970	332	9	318	8	299	8	217	10	162	12	159	9	135	10	118	10	95.7	10
1971	440	5	426	4	373	5	340	5	288	6	244	3	197	3	169	3	134	3
1972	5,600	1	2,500	1	1,321	1	745	1	478	2	322	2	241	2	199	2	152	2
1973	195	16	194	14	190	12	187	12	164	11	136	13	121	13	111	11	91.1	11
1974	163	18	128	21	116	19	111	18	94.8	17	81.4	18	69.2	25	66.7	22	54.9	23
1975	215	13	142	18	115	20	103	20	90.3	20	80.8	19	76.4	17	71.0	17	58.3	21
1976	488	3	390	6	343	6	301	7	219	7	150	11	125	12	107	13	82.4	14
1977	200	15	200	13	189	13	160	14	149	14	121	14	108	14	100	14	83.0	13
1978	408	6	399	5	388	4	382	4	334	4	228	5	178	5	148	5	111	6
1979	211	14	135	20	109	21	102	21	88.4	21	79.0	20	75.0	19	70.7	18	63.7	18
1980	125	25	118	23	108	23	95.6	22	85.2	23	72.3	24	71.3	23	70.7	19	59.4	19
1981	176	17	154	15	145	15	114	17	92.3	18	63.9	26	71.8	21	63.0	26	54.5	24
1982	370	8	230	12	183	14	162	13	157	13	141	12	126	11	108	12	84.5	12
1983	261	11	257	10	249	9	224	9	207	9	160	8	136	9	122	9	99.3	9
1984	273	10	269	9	246	10	216	11	168	10	161	7	141	7	129	7	106	7
1985	151	21	149	16	137	17	130	15	103	15	82.3	16	84.8	16	77.2	16	70.5	15
1986	154	20	94.3	28	84.3	29	65.9	30	54.9	30	51.2	30	50.6	30	49.8	30	47.0	29
1987	116	26	112	26	109	22	93.3	24	80.0	26	78.8	21	70.7	24	70.3	20	64.9	17
1988	134	24	120	22	103	24	94.6	23	91.4	19	81.5	17	75.6	18	69.4	21	58.0	22
1989	115	27	114	25	97.9	27	85.3	27	81.4	24	77.0	22	74.5	20	66.2	23	52.0	27
1990	108	29	104	27	98.0	26	86.5	25	74.2	27	60.7	28	53.4	29	51.5	29	41.9	30
1991	159	19	115	24	102	25	86.2	26	80.5	25	65.8	25	64.6	26	64.8	25	52.8	26
1992	104	30	94.0	29	89.9	28	84.9	28	72.9	28	59.4	29	54.2	28	56.9	28	49.4	28
1993	376	7	352	7	338	7	329	6	299	5	214	6	168	6	146	6	114	5

Table E25.1. Mean flow, in cubic feet per second, for station 06418900, Rapid Creek below Sewage Plant, near Rapid City

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1982	20.6	23.7	35.5	31.4	36.1	39.7	37.1	74.0	63.8	163	153	96.5	64.8
1983	99.3	64.8	60.7	52.2	52.9	75.3	120	237	89.5	57.7	39.4	25.8	81.5
1984	33.5	42.1	41.2	55.5	48.9	49.4	103	177	180	87.9	62.3	28.8	75.8
1985	33.7	53.1	50.4	54.1	54.6	75.5	71.4	53.8	32.7	54.3	38.0	26.3	49.8
1986	31.7	36.4	38.6	43.5	54.0	48.5	74.7	62.5	59.1	41.8	33.4	58.9	48.4
1987	98.9	91.3	60.4	50.9	46.1	71.8	98.3	68.3	46.1	43.8	41.1	25.1	61.9
1988	21.8	37.4	36.4	43.8	42.5	44.4	31.1	41.4	40.9	46.2	38.7	25.7	37.5
1989	27.7	37.1	36.9	36.5	33.5	41.2	32.9	30.5	36.2	41.4	40.8	30.7	35.5
1990	36.4	37.3	34.6	35.7	35.7	35.7	35.3	55.1	63.4	44.7	34.1	22.2	39.2
1991	18.7	27.8	31.5	28.8	32.7	32.3	51.4	86.5	97.8	32.3	37.5	47.4	43.7
1992	34.7	41.4	46.4	53.3	45.5	50.3	39.7	50.5	34.8	44.0	35.1	30.5	42.2
1993	28.5	26.9	32.6	38.2	44.7	58.7	64.6	89.6	293	193	107	100	89.7

¹Indicates a no-value month.²Incomplete water year.**Table E25.2.** Statistics on mean flow, in cubic feet per second, for station 06418900, Rapid Creek below Sewage Plant, near Rapid City (October 1981 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	12	12	12	12	12	12	12	12	12	12	12	12	12
Maximum	99.3	91.3	60.7	55.5	54.6	75.5	120	237	293	193	153	100	89.7
Percentile													
75th	36.0	50.3	49.4	53.0	51.9	68.5	92.4	88.8	95.7	80.3	57.0	56.0	73.1
50th	32.6	37.3	37.7	43.7	45.1	48.9	58.0	65.4	61.2	45.4	39.0	29.6	49.1
25th	23.3	29.9	34.8	35.9	35.8	40.1	35.7	51.3	37.4	42.3	35.7	25.7	39.9
Minimum	18.7	23.7	31.5	28.8	32.7	32.3	31.1	30.5	32.7	32.3	33.4	22.2	35.5
Mean	40.46	43.27	42.10	43.66	43.93	51.90	63.29	85.52	86.44	70.84	55.03	43.16	55.83
Standard deviation	27.99	18.87	10.19	9.45	7.94	15.18	30.66	60.62	76.95	52.30	37.12	27.83	18.52
Skewness	1.86	1.71	1.04	-0.19	-0.11	0.59	0.66	1.89	2.16	1.85	2.20	1.53	0.70
Coefficient of variation	0.69	0.44	0.24	0.22	0.18	0.29	0.48	0.71	0.89	0.74	0.67	0.64	0.33
Percent of annual flow	6.04	6.46	6.29	6.52	6.56	7.75	9.45	12.77	12.91	10.58	8.22	6.45	¹ 0.361

¹Serial correlation for annual mean flows.**Table E25.3.** Serial correlation for 1-year lag for monthly mean flow for station 06418900, Rapid Creek below Sewage Plant, near Rapid City (October 1981 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
-0.303	-0.264	-0.270	0.103	0.502	-0.042	0.288	0.372	-0.232	-0.032	-0.148	-0.255	

Table E25.4. Correlation matrix for monthly mean flow for station 06418900, Rapid Creek below Sewage Plant, near Rapid City (October 1981 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.898	0.891	0.506	0.423	0.720	0.736	0.519	-0.110	-0.215	-0.261	-0.372
Nov.	*	1.000	0.915	0.639	0.461	0.749	0.647	0.251	-0.289	-0.390	-0.413	-0.556
Dec.	*	*	1.000	0.751	0.617	0.850	0.705	0.424	-0.299	-0.303	-0.320	-0.482
Jan.	*	*	*	1.000	0.817	0.731	0.624	0.368	-0.087	-0.247	-0.382	-0.526
Feb.	*	*	*	*	1.000	0.778	0.701	0.400	0.069	-0.053	-0.232	-0.165
Mar.	*	*	*	*	*	1.000	0.722	0.387	0.051	0.028	-0.136	-0.195
Apr.	*	*	*	*	*	*	1.000	0.791	0.282	-0.013	-0.139	-0.180
May	*	*	*	*	*	*	*	1.000	0.399	0.145	0.060	-0.070
June	*	*	*	*	*	*	*	*	1.000	0.714	0.445	0.550
July	*	*	*	*	*	*	*	*	*	1.000	0.916	0.854
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.847
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E25.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06418900, Rapid Creek below Sewage Plant, near Rapid City

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1982	24.0	11	27.0	11	31.0	11	33.4	11	36.0	11	51.9	11	53.8	11	56.8	11	66.6	11
1983	17.0	6	18.0	6	18.9	5	22.2	7	24.7	6	28.4	6	32.7	6	34.6	7	39.2	7
1984	20.0	10	20.7	10	22.4	10	26.9	9	28.7	8	30.6	8	37.3	8	40.6	9	45.0	9
1985	16.0	4	17.0	5	18.1	3	18.5	3	24.6	5	26.7	5	30.4	5	31.6	5	35.2	6
1986	17.0	7	18.3	7	21.3	9	23.9	8	33.3	10	36.7	10	41.2	10	46.1	10	54.9	10
1987	18.0	8	18.3	8	18.6	4	18.9	4	21.3	3	23.2	2	26.5	2	29.5	4	33.2	4
1988	19.0	9	19.7	9	20.0	6	21.7	5	22.9	4	23.7	3	26.6	3	29.3	3	31.6	3
1989	16.0	5	16.3	3	20.0	7	21.7	6	25.9	7	29.3	7	32.7	7	33.9	6	34.7	5
1990	12.0	2	12.7	2	13.4	1	15.3	2	17.8	1	20.3	1	22.6	1	24.9	1	26.8	1
1991	15.0	3	16.7	4	20.7	8	29.9	10	32.0	9	34.4	9	38.9	9	37.8	8	39.8	8
1992	11.0	1	11.7	1	14.6	2	15.1	1	19.8	2	26.4	4	27.8	4	29.1	2	30.0	2

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E25.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06418900, Rapid Creek below Sewage Plant, near Rapid City

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1982	636	1	342	4	238	4	214	4	181	4	160	4	139	4	120	4	98.4	4
1983	386	4	340	5	309	3	280	2	248	2	181	3	151	3	133	3	106	3
1984	462	2	401	1	316	2	254	3	191	3	182	2	158	2	140	2	110	2
1985	119	12	105	11	102	9	93.9	8	87.4	8	75.6	7	68.2	7	64.5	8	60.3	6
1986	229	6	162	7	109	8	88.9	9	83.1	9	72.1	8	66.6	8	64.7	7	57.3	8
1987	167	11	131	10	122	7	112	7	101	6	95.8	5	84.1	5	75.9	5	71.3	5
1988	178	10	144	8	90.1	10	64.1	11	57.6	10	50.8	11	45.6	11	43.5	11	43.0	11
1989	206	8	100	12	75.0	12	51.9	12	44.4	12	41.7	12	40.8	12	38.9	12	37.4	12
1990	349	5	343	3	225	5	142	6	90.6	7	63.8	9	55.7	9	50.5	9	45.4	10
1991	200	9	185	6	174	6	143	5	125	5	95.0	6	79.3	6	67.9	6	58.7	7
1992	223	7	137	9	88.1	11	70.5	10	56.2	11	52.1	10	50.4	10	49.1	10	47.8	9
1993	401	3	384	2	364	1	354	1	323	1	247	1	199	1	174	1	141	1

Table E26.1. Mean flow, in cubic feet per second, for station 06421500, Rapid Creek near Farmingdale

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1946	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	37.5	68.1	(2)
1947	106	70.2	53.0	54.5	53.7	71.2	123	77.4	378	199	47.0	17.5	104
1948	41.8	49.7	55.5	43.0	55.4	69.2	74.2	47.7	92.8	75.2	46.2	10.8	55.1
1949	23.5	58.4	46.4	20.8	45.9	145	151	78.8	129	24.3	17.2	27.7	63.9
1950	45.6	48.3	39.9	35.8	40.1	57.4	158	144	11.3	11.0	20.3	25.6	53.1
1951	41.6	40.7	38.6	33.6	37.8	45.7	33.2	8.71	56.7	44.6	26.0	53.0	38.3
1952	53.5	42.1	36.2	37.4	44.6	48.6	82.7	235	139	44.3	2.22	2.87	64.1
1953	19.0	24.4	39.9	43.5	45.8	75.0	71.7	109	101	19.9	40.4	2.45	49.4
1954	6.92	35.2	37.5	32.1	44.4	52.4	58.2	9.87	24.9	1.84	9.95	.000	25.9
1955	7.35	31.4	30.6	27.0	31.9	37.0	58.1	2.88	33.3	8.02	13.4	14.9	24.5
1956	24.8	33.5	35.0	37.4	36.8	60.1	43.3	19.0	9.32	18.4	23.7	2.48	28.7
1957	2.84	43.0	33.6	25.4	34.1	30.1	38.7	195	96.4	37.5	9.56	23.4	47.6
1958	27.0	32.1	35.5	32.7	28.1	33.9	41.8	11.9	56.5	56.5	6.43	2.11	30.4
1959	9.42	33.0	30.0	25.0	28.0	24.0	40.0	30.0	20.0	20.0	3.52	17.3	23.3
1960	19.4	23.5	22.3	22.1	23.5	49.7	25.7	6.64	7.76	4.17	3.49	5.70	17.8
1961	1.07	16.5	26.8	27.3	28.6	18.2	1.33	4.31	12.9	8.56	2.95	2.56	12.5
1962	5.51	21.2	15.4	11.7	19.8	29.7	9.19	134	128	205	27.5	8.19	51.7
³ 1963	29.6	32.9	26.3	25.7	30.5	69.1	53.7	45.3	111	76.5	20.4	47.3	47.3
1964	38.1	35.1	30.1	34.9	37.1	44.5	74.9	65.6	173	83.4	15.6	26.4	54.8
1965	36.2	44.9	40.8	48.2	44.0	47.4	82.5	338	500	202	61.1	72.2	127
1966	97.6	57.3	49.8	41.8	43.4	125	122	73.2	13.1	26.0	40.3	42.1	61.1
1967	51.7	47.0	38.6	40.1	40.9	55.8	96.2	152	543	221	35.0	59.6	115
1968	57.5	53.9	53.7	55.2	54.6	60.6	61.4	23.1	121	36.1	43.9	33.8	54.4
1969	24.3	38.3	30.6	29.7	41.4	75.0	53.2	52.6	33.6	61.9	17.1	11.2	39.1
1970	25.7	46.6	38.5	34.5	40.7	49.4	150	202	129	14.1	15.4	69.9	67.8
1971	49.2	46.4	34.2	33.7	55.4	73.2	230	284	192	43.2	21.6	56.8	93.2
1972	42.0	59.8	48.4	35.3	47.2	90.4	66.7	77.5	387	171	98.0	47.5	97.4
1973	69.9	64.7	50.5	50.9	49.6	71.1	102	159	68.5	33.3	21.1	43.5	65.5
1974	34.6	49.4	31.1	34.8	44.6	43.8	36.6	26.8	24.2	29.3	29.5	31.4	34.6
1975	23.3	33.1	38.4	39.6	40.3	46.0	75.6	40.7	111	39.7	13.1	14.0	42.8
1976	23.5	30.4	39.1	39.6	44.5	40.5	48.0	67.4	220	64.5	30.3	26.1	56.0
1977	34.2	45.5	44.9	35.1	50.0	54.9	212	107	47.7	25.4	24.9	25.6	58.7
1978	45.1	40.9	34.9	21.8	33.2	114	55.1	285	186	58.0	35.5	19.9	77.8
1979	46.4	49.8	44.4	31.1	43.4	83.1	65.2	17.2	48.5	64.3	45.8	14.0	46.1
1980	23.3	49.9	38.8	44.6	44.8	53.2	50.6	23.2	61.7	23.6	31.3	26.9	39.2
1981	25.8	36.0	32.0	33.5	33.8	30.9	11.5	44.0	24.6	63.8	18.5	19.6	31.2
1982	23.9	31.8	32.6	34.8	34.0	44.5	37.7	112	95.1	131	151	99.0	69.3
1983	134	74.9	68.9	58.6	61.1	75.8	122	243	74.7	48.7	39.8	31.7	86.4
1984	42.2	49.3	42.1	72.5	80.8	55.7	112	190	183	65.7	34.1	32.5	79.8
1985	45.1	61.1	68.8	64.1	47.7	97.9	75.8	23.6	28.2	27.3	31.0	28.8	50.0
1986	35.8	42.0	42.4	49.7	128	117	129	73.0	73.5	43.9	23.4	69.4	68.4
1987	99.1	100	65.4	58.7	55.0	92.9	105	91.6	57.2	22.3	44.1	30.8	68.6
1988	23.9	32.6	31.0	17.7	15.0	134	26.8	30.7	14.1	17.3	23.2	17.5	32.1
1989	25.3	36.5	27.2	22.7	29.5	36.0	26.7	18.0	14.8	15.5	16.5	29.1	24.8
1990	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
1991	21.9	29.1	32.8	29.5	33.6	32.5	36.4	94.2	111	18.3	17.6	37.8	41.2
1992	34.0	44.0	48.2	47.8	47.5	52.7	43.2	27.9	31.2	46.5	17.8	15.0	38.0
1993	17.3	38.0	38.7	28.2	36.4	64.9	68.6	129	242	165	79.1	78.4	82.2

¹Indicates a no-value month.²Incomplete water year.³Pactola Reservoir filled during water year 1963.⁴Record collected during WY 1990 at station 06422000, Rapid Creek at Creston.

Table E26.2. Statistics on mean flow, in cubic feet per second, for station 06421500, Rapid Creek near Farmingdale (October 1963 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	29	29	29	29	29	29	29	29	29	29	29	29	29
Maximum	134	100	68.9	72.5	128	134	230	338	543	221	151	99.0	127
Percentile													
75th	47.8	51.9	48.3	48.9	49.8	86.7	108	155	184	65.1	42.1	52.2	78.8
50th	35.8	45.5	38.8	35.3	44.0	55.8	68.6	73.2	74.7	43.9	30.3	31.4	58.7
25th	24.1	36.2	32.7	32.3	36.7	45.2	45.6	29.3	32.4	25.7	18.1	22.7	40.2
Minimum	17.3	29.1	27.2	17.7	15.0	30.9	11.5	17.2	13.1	14.1	13.1	11.2	24.8
Mean	43.13	47.18	41.96	40.30	46.81	67.68	81.96	105.91	131.33	64.21	37.09	38.29	62.16
Standard deviation	26.78	14.97	11.24	12.99	19.43	28.57	51.58	90.57	138.01	57.29	29.19	22.25	25.33
Skewness	2.04	1.76	1.15	0.62	2.77	0.89	1.37	1.18	1.84	1.66	2.63	1.09	0.79
Coefficient of variation	0.62	0.32	0.27	0.32	0.42	0.42	0.63	0.86	1.05	0.89	0.79	0.58	0.41
Percent of annual flow	5.78	6.33	5.63	5.40	6.28	9.07	10.99	14.20	17.61	8.61	4.97	5.13	¹ 0.206

¹Serial correlation for annual mean flows.

Table E26.3. Serial correlation for 1-year lag for monthly mean flow for station 06421500, Rapid Creek near Farmingdale (October 1963 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
-0.047	-0.073	-0.104	0.371	0.166	0.205	0.148	0.017	-0.102	-0.107	-0.121	-0.077	

Table E26.4. Correlation matrix for monthly mean flow for station 06421500, Rapid Creek near Farmingdale (October 1963 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.806	0.735	0.500	0.241	0.390	0.354	0.269	-0.075	-0.118	0.013	-0.060
Nov.	*	1.000	0.819	0.606	0.276	0.345	0.323	0.128	-0.068	-0.122	0.064	-0.046
Dec.	*	*	1.000	0.739	0.336	0.351	0.283	0.047	-0.085	-0.113	0.085	-0.065
Jan.	*	*	*	1.000	0.598	0.017	0.259	0.107	0.028	-0.046	-0.003	0.036
Feb.	*	*	*	*	1.000	0.222	0.441	0.111	-0.010	-0.076	-0.082	0.208
Mar.	*	*	*	*	*	1.000	0.183	0.032	-0.156	-0.145	0.037	-0.068
Apr.	*	*	*	*	*	*	1.000	0.498	0.109	-0.095	-0.149	0.260
May	*	*	*	*	*	*	*	1.000	0.532	0.346	0.129	0.441
June	*	*	*	*	*	*	*	*	1.000	0.863	0.311	0.454
July	*	*	*	*	*	*	*	*	*	1.000	0.581	0.523
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.620
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E26.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06421500, Rapid Creek near Farmingdale

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1964	0.60	3	1.10	3	1.29	3	2.06	1	9.87	4	17.4	10	23.4	8	28.2	12	33.2	12
1965	4.00	16	4.33	12	7.43	13	23.9	25	33.9	26	36.9	24	40.3	23	45.0	23	58.4	25
1966	1.30	6	1.67	5	4.03	6	8.31	8	10.3	6	13.6	3	20.7	7	27.0	9	34.9	14
1967	6.00	20	21.7	27	24.9	27	25.9	26	30.0	25	46.5	25	49.9	26	50.9	26	52.1	23
1968	5.80	19	7.53	19	12.7	22	13.5	16	19.9	19	25.2	19	31.1	17	30.2	14	32.8	11
1969	.0000	1	.0000	1	.0000	1	2.54	2	4.27	1	9.71	1	16.8	4	24.3	6	28.2	7
1970	.0000	2	.0000	2	.90	2	3.39	4	11.8	9	14.4	5	30.9	16	36.5	18	38.0	19
1971	1.60	10	6.17	14	6.67	10	9.01	10	14.6	11	24.0	14	33.8	21	36.8	19	42.0	21
1972	3.20	15	16.7	26	23.7	26	34.7	27	43.0	27	47.2	26	48.9	25	49.8	25	54.3	24
1973	2.20	11	3.10	9	8.26	14	9.93	12	19.2	17	27.0	20	31.3	18	32.4	17	35.4	16
1974	3.00	14	5.27	13	7.19	12	9.41	11	17.3	14	21.9	12	26.0	14	27.0	10	27.0	6
1975	1.50	8	1.77	7	1.93	4	2.76	3	8.16	2	12.2	2	15.5	1	19.0	2	24.6	3
1976	6.20	23	8.23	21	9.50	17	11.2	15	21.2	21	25.1	18	29.1	15	32.0	16	35.8	17
1977	7.80	25	9.13	23	12.6	21	14.4	18	17.4	15	22.7	13	23.4	9	29.6	13	32.2	10
1978	10.0	27	11.0	24	13.1	23	17.4	21	19.8	18	25.0	17	33.2	19	37.3	20	37.2	18
1979	6.10	21	7.43	18	8.83	16	10.6	13	13.7	10	17.6	11	25.9	13	30.7	15	35.0	15
1980	7.20	24	8.13	20	8.27	15	10.8	14	17.4	16	24.4	16	25.5	12	26.6	8	28.9	8
1981	.80	4	1.73	6	2.17	5	3.99	5	9.95	5	16.9	8	20.2	6	23.1	5	26.7	5
1982	9.90	26	12.0	25	16.6	24	21.3	23	28.4	23	59.2	27	60.2	27	64.3	27	78.2	27
1983	1.40	7	6.47	15	18.4	25	23.8	24	29.4	24	35.2	23	37.3	22	38.4	22	41.4	20
1984	4.40	17	8.30	22	11.4	20	17.7	22	19.9	20	28.2	21	33.4	20	38.0	21	47.6	22
1985	2.30	12	3.93	11	6.94	11	13.5	17	16.8	13	24.1	15	24.8	11	27.0	11	28.9	9
1986	6.10	22	7.27	17	10.2	19	14.4	19	23.7	22	31.1	22	41.3	24	49.7	24	63.2	26
1987	1.50	9	2.00	8	4.29	8	7.43	7	8.93	3	13.6	4	16.4	2	20.6	4	22.8	2
1988	2.80	13	3.33	10	6.11	9	8.50	9	10.7	7	15.7	7	17.5	5	17.2	1	20.3	1
1989	(2)		(2)		(2)		(2)		(2)		(2)		(2)		(2)		(2)	
1990	(2)		(2)		(2)		(2)		(2)		(2)		(2)		(2)		(2)	
1991	5.00	18	6.77	16	9.99	18	14.5	20	16.1	12	17.1	9	24.1	10	26.5	7	33.2	13
1992	.85	5	1.30	4	4.06	7	7.41	6	11.4	8	15.4	6	16.5	3	20.5	3	25.7	4

¹Low-flow water year is Apr. 1 to Mar. 31.

²Low-flow statistics not computed for water year 1989-90.

Table E26.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06421500, Rapid Creek near Farmingdale

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1964	281	22	260	20	250	15	242	14	216	11	130	16	118	15	102	13	80.8	15
1965	858	4	646	5	605	3	590	3	539	2	460	1	354	1	285	1	209	1
1966	300	21	281	18	247	16	199	15	166	16	143	14	111	16	93.2	16	78.8	17
1967	1,210	2	981	2	870	2	692	1	608	1	386	2	310	2	255	2	185	2
1968	337	20	299	16	194	20	153	20	131	19	79.9	22	69.2	21	66.5	21	63.9	19
1969	381	18	235	22	154	23	108	23	79.6	24	78.3	23	66.8	22	58.5	22	53.7	23
1970	502	11	485	7	380	9	289	10	265	7	201	7	162	8	134	8	101	10
1971	484	13	461	8	423	7	389	5	340	5	286	4	237	3	200	3	148	4
1972	2,860	1	1,788	1	949	1	626	2	429	3	295	3	224	4	187	4	149	3
1973	226	25	204	24	202	19	199	16	186	14	138	15	119	14	102	14	84.4	12
1974	118	28	90.0	28	73.6	28	54.3	28	50.5	28	47.6	27	46.1	27	40.3	27	41.1	27
1975	435	16	257	21	175	22	169	19	123	20	81.6	21	77.1	19	70.7	19	60.4	20
1976	924	3	667	4	482	5	384	6	248	9	165	10	122	13	101	15	81.2	14
1977	441	15	386	13	337	10	297	8	223	10	160	11	125	12	107	12	84.4	13
1978	430	17	414	10	404	8	390	4	345	4	241	5	183	5	163	5	123	6
1979	241	24	152	26	117	26	102	24	89.4	23	74.9	24	64.3	24	56.0	23	54.7	22
1980	533	9	324	15	175	21	100	25	61.7	26	52.2	25	49.6	26	48.5	26	47.0	25
1981	363	19	220	23	141	24	94.7	26	65.8	25	46.0	28	45.7	28	38.6	28	35.0	28
1982	534	8	338	14	273	14	195	17	171	15	143	13	134	10	131	10	105	9
1983	760	6	456	9	318	12	283	11	253	8	184	9	150	9	132	9	107	8
1984	503	10	390	12	318	11	267	13	206	12	194	8	163	7	143	7	119	7
1985	180	26	153	25	138	25	125	22	113	21	91.5	19	76.6	20	73.9	18	69.8	18
1986	800	5	713	3	513	4	309	7	194	13	148	12	133	11	118	11	95.0	11
1987	461	14	288	17	203	18	141	21	110	22	100	18	98.3	17	89.3	17	80.7	16
1988	579	7	549	6	466	6	271	12	152	17	90.1	20	66.8	23	53.9	24	44.4	26
1989	134	27	77.0	29	53.6	29	44.3	29	39.8	29	34.3	29	31.3	29	29.3	29	30.0	29
1990	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
1991	265	23	261	19	228	17	179	18	143	18	106	17	82.2	18	69.1	20	56.2	21
1992	115	29	107	27	74.6	27	63.1	27	55.0	27	51.5	26	50.0	25	49.5	25	47.4	24
1993	494	12	399	11	302	13	294	9	271	6	206	6	180	6	156	6	127	5

¹High-flow statistics not computed for water year 1990.

Table E27.1. Mean flow, in cubic feet per second, for station 06422500, Boxelder Creek near Nemo

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1945	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	20.9	13.2	8.17	(2)
1946	6.03	4.92	3.08	3.14	2.91	11.5	12.1	138	140	51.2	18.3	19.3	34.4
1947	19.4	13.9	10.0	6.48	9.93	20.2	46.2	35.7	77.6	61.6	(1)	(1)	(2)
1966	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	9.65	6.76	8.11	5.17	(2)
1967	6.62	5.14	3.54	3.38	5.00	15.0	17.2	39.0	157	48.1	19.2	13.5	27.7
1968	11.1	9.77	5.90	6.89	7.40	9.42	10.1	9.74	14.8	8.24	5.60	5.49	8.70
1969	3.97	4.49	2.74	1.78	2.40	5.17	18.3	23.7	13.3	16.1	6.38	3.70	8.55
1970	5.30	5.70	3.41	2.65	3.37	5.26	30.9	77.3	77.9	23.3	19.3	9.61	22.1
1971	7.73	9.04	6.39	3.51	10.0	11.0	84.4	93.7	64.7	23.3	10.5	10.9	27.9
1972	10.7	9.75	5.31	3.78	3.05	11.8	11.4	22.5	489	57.5	29.2	14.0	55.1
1973	12.7	9.47	7.11	7.95	7.71	9.00	40.1	57.0	29.1	15.6	10.2	8.33	17.9
1974	7.71	7.77	6.30	5.87	5.99	8.30	9.31	6.20	4.09	3.84	3.48	2.96	5.98
1975	3.14	3.88	2.71	2.45	2.14	5.31	32.1	50.2	39.1	24.5	11.1	4.94	15.2
1976	5.49	5.49	6.12	5.49	9.05	9.59	14.2	20.6	114	36.3	14.0	9.26	20.7
1977	7.43	6.34	6.42	5.73	6.02	10.9	86.7	49.1	20.4	10.2	7.89	7.34	18.7
1978	8.86	5.96	4.75	4.03	3.71	14.5	16.2	126	33.4	19.9	15.7	9.41	22.0
1979	8.19	7.89	6.39	4.19	6.02	12.4	13.3	8.63	7.32	10.3	7.05	4.09	7.99
1980	3.80	3.92	3.46	2.28	3.44	7.50	12.8	10.7	7.47	3.45	3.10	2.92	5.40
1981	3.15	3.22	4.70	4.21	3.39	2.66	3.03	7.08	6.45	5.75	3.05	2.86	4.14
1982	3.06	2.79	2.02	1.42	2.12	5.97	6.79	43.6	27.4	14.2	11.1	8.57	10.8
1983	26.8	22.3	10.5	8.50	9.47	17.6	50.4	76.5	36.1	19.0	9.88	6.55	24.5
1984	7.90	7.10	5.27	6.52	7.66	9.86	20.5	71.0	72.1	35.5	23.2	11.7	23.2
1985	8.70	7.74	7.79	5.17	3.72	15.0	11.3	7.31	5.22	2.67	2.11	2.31	6.61
1986	3.39	2.59	2.25	3.45	6.36	11.2	25.6	33.9	24.3	14.8	8.16	11.1	12.3
1987	11.9	8.40	5.73	3.34	7.23	15.0	29.1	16.9	12.2	5.78	3.28	3.93	10.2
1988	4.46	4.59	3.40	1.72	2.03	7.29	11.6	11.7	3.92	1.70	1.65	1.17	4.61
1989	1.85	1.66	1.65	1.60	1.36	7.64	6.46	12.0	6.41	2.58	.76	1.51	3.81
1990	1.88	2.56	2.57	3.14	3.79	10.1	13.5	15.3	7.60	3.25	2.11	1.52	5.62
1991	2.07	2.33	1.65	1.64	1.44	4.45	10.6	39.4	64.3	16.4	8.80	8.91	13.5
1992	7.25	8.05	7.39	6.64	5.80	8.58	8.28	6.58	8.91	7.69	3.79	3.62	6.88
1993	3.02	3.88	2.64	3.05	3.82	11.9	18.7	64.2	90.0	49.7	22.1	13.4	24.0

¹Indicates a no-value month.²Incomplete water year.

Table E27.2. Statistics on mean flow, in cubic feet per second, for station 06422500, Boxelder Creek near Nemo (October 1966 through September 1993)

Statistic	Month												Annual	
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		
Number	27	27	27	27	27	27	27	27	27	27	27	27	27	27
Maximum	26.8	22.3	10.5	8.50	10.0	17.6	86.7	126	489	57.5	29.2	14.0	55.1	
Percentile														
75th	8.70	8.05	6.39	5.73	7.23	11.9	29.1	57.0	64.7	23.3	14.0	9.61	22.1	
50th	6.62	5.70	4.75	3.51	3.82	9.59	14.2	23.7	24.3	14.8	8.16	6.55	12.3	
25th	3.15	3.88	2.71	2.45	3.05	7.29	10.6	10.7	7.47	5.75	3.28	2.96	6.61	
Minimum	1.85	1.66	1.65	1.42	1.36	2.66	3.03	6.20	3.92	1.70	0.76	1.17	3.81	
Mean	6.97	6.36	4.74	4.09	4.94	9.72	22.70	37.03	53.20	17.76	9.73	6.80	15.34	
Standard deviation	5.08	4.04	2.21	2.02	2.54	3.73	21.13	31.43	95.17	15.49	7.50	4.04	11.19	
Skewness	2.37	2.38	0.51	0.60	0.42	0.18	2.17	1.14	4.00	1.23	1.00	0.28	1.78	
Coefficient of variation	0.73	0.64	0.47	0.49	0.51	0.38	0.93	0.85	1.79	0.87	0.77	0.59	0.73	
Percent of annual flow	3.79	3.46	2.58	2.22	2.69	5.28	12.33	20.12	28.91	9.65	5.29	3.69	¹ 0.337	

¹Serial correlation for annual mean flows.

Table E27.3. Serial correlation for 1-year lag for monthly mean flow for station 06422500, Boxelder Creek near Nemo (October 1966 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.022	-0.010	-0.173	0.025	-0.143	0.170	-0.080	0.035	0.012	0.049	0.027	0.074	

Table E27.4. Correlation matrix for monthly mean flow for station 06422500, Boxelder Creek near Nemo (October 1966 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.975	0.832	0.729	0.624	0.646	0.348	0.259	0.120	0.076	0.118	0.097
Nov.	*	1.000	0.861	0.730	0.644	0.585	0.375	0.231	0.140	0.096	0.123	0.082
Dec.	*	*	1.000	0.857	0.722	0.546	0.361	0.067	0.000	-0.061	-0.045	-0.061
Jan.	*	*	*	1.000	0.743	0.420	0.256	0.094	-0.037	0.015	0.055	0.069
Feb.	*	*	*	*	1.000	0.508	0.515	0.220	-0.052	0.111	0.085	0.247
Mar.	*	*	*	*	*	1.000	0.266	0.249	0.173	0.236	0.198	0.259
Apr.	*	*	*	*	*	*	1.000	0.522	-0.044	0.075	0.097	0.260
May	*	*	*	*	*	*	*	1.000	0.085	0.404	0.551	0.596
June	*	*	*	*	*	*	*	*	1.000	0.785	0.754	0.630
July	*	*	*	*	*	*	*	*	*	1.000	0.935	0.867
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.892
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E27.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06422500, Boxelder Creek near Nemo

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1967	4.00	21	4.00	21	4.43	21	4.96	21	5.18	20	5.94	23	6.57	24	7.22	24	8.42	24
1968	.70	3	.80	3	.91	4	1.06	3	1.49	5	1.97	6	2.22	5	2.71	7	3.30	8
1969	1.60	11	1.70	12	1.79	12	1.83	10	2.33	11	2.65	10	2.97	11	3.61	12	3.98	12
1970	1.00	5	1.00	5	1.29	7	1.86	11	2.98	14	3.93	16	5.69	19	6.26	20	7.39	22
1971	1.50	10	1.57	10	1.74	10	1.76	9	2.29	10	3.35	13	4.00	13	5.35	14	7.07	20
1972	5.00	25	5.17	26	5.57	26	6.00	26	6.99	26	7.48	25	7.56	25	7.73	25	9.03	25
1973	4.50	23	4.83	24	5.07	24	5.32	25	5.84	24	5.89	22	6.03	21	6.41	21	6.92	17
1974	1.30	8	1.40	8	1.41	8	1.53	7	1.91	7	2.26	8	2.43	8	2.64	6	2.83	6
1975	3.00	18	3.50	19	3.93	19	4.29	19	4.86	19	5.13	19	5.29	17	5.43	15	6.02	14
1976	5.00	26	5.00	25	5.07	25	5.25	23	5.67	23	5.86	21	5.94	20	6.03	17	6.75	15
1977	2.40	16	2.57	16	2.91	17	3.27	17	3.40	16	3.79	15	4.12	14	4.51	13	5.72	13
1978	3.00	19	3.33	18	3.46	18	3.58	18	4.13	18	4.83	18	5.52	18	6.11	19	6.95	18
1979	1.80	13	1.93	13	2.09	13	2.11	12	2.26	9	2.48	9	2.93	10	3.17	11	3.50	11
1980	1.60	12	1.60	11	1.77	11	2.33	14	2.36	12	2.94	12	2.80	9	2.99	9	3.39	10
1981	1.00	6	1.10	6	1.20	6	1.32	6	1.33	3	1.49	3	1.74	4	2.08	4	2.30	4
1982	4.00	22	4.17	22	4.66	22	5.26	24	6.32	25	8.67	26	9.07	26	11.4	26	14.4	26
1983	3.50	20	3.77	20	4.07	20	4.64	20	5.26	21	5.75	20	6.26	22	6.55	22	6.80	16
1984	2.20	15	2.37	15	2.57	15	2.91	15	3.74	17	4.30	17	5.16	15	5.84	16	6.99	19
1985	1.40	9	1.40	9	1.46	9	1.64	8	1.93	8	2.11	7	2.31	7	2.56	5	2.52	5
1986	2.50	17	2.67	17	2.71	16	3.11	16	3.29	15	3.78	14	5.22	16	6.06	18	7.86	23
1987	.60	2	.73	2	.89	2	1.26	5	1.62	6	1.70	5	2.28	6	2.73	8	3.33	9
1988	.84	4	.86	4	.90	3	.93	2	1.03	2	1.21	2	1.43	2	1.51	1	1.51	1
1989	.10	1	.11	1	.14	1	.28	1	.76	1	.97	1	1.29	1	1.53	2	1.97	3
1990	1.10	7	1.10	7	1.10	5	1.21	4	1.41	4	1.52	4	1.58	3	1.75	3	1.77	2
1991	4.70	24	4.70	23	4.80	23	5.16	22	5.45	22	6.11	24	6.56	23	6.90	23	7.30	21
1992	2.00	14	2.20	14	2.23	14	2.31	13	2.52	13	2.79	11	3.07	12	3.09	10	3.29	7

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E27.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06422500, Boxelder Creek near Nemo

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1967	556	3	499	3	368	2	265	2	167	2	103	2	82.8	2	66.9	3	49.5	2
1968	36.0	20	25.3	19	19.1	20	15.9	21	14.9	20	12.3	22	11.6	19	11.0	19	10.0	18
1969	85.0	15	57.3	16	41.9	17	33.3	17	25.4	17	21.3	17	18.6	17	18.0	17	13.9	17
1970	375	4	263	4	175	5	113	8	81.5	9	80.7	5	64.0	5	53.6	5	39.7	5
1971	182	8	159	7	153	6	142	5	117	5	100	3	82.8	3	67.5	2	48.3	3
1972	6,700	1	3,533	1	1,646	1	897	1	507	1	275	1	192	1	150	1	103	1
1973	98.0	13	83.3	13	77.3	13	72.7	13	67.5	12	53.7	11	43.0	11	35.9	12	27.0	12
1974	18.0	27	17.3	25	14.4	26	11.6	25	9.50	25	8.82	25	8.09	26	7.58	26	7.28	24
1975	92.0	14	75.3	14	70.3	14	62.1	14	54.0	14	45.2	13	42.3	12	37.2	11	27.2	11
1976	829	2	501	2	328	3	199	3	119	4	76.1	7	57.3	8	47.0	8	34.7	9
1977	140	10	137	9	130	8	124	6	103	6	68.9	9	52.5	10	42.6	10	30.8	10
1978	261	5	243	5	200	4	165	4	128	3	83.3	4	62.2	6	50.7	7	38.2	7
1979	39.0	19	24.0	20	18.1	22	15.3	22	13.7	22	13.1	20	11.6	20	10.8	20	9.88	19
1980	25.0	22	23.0	22	20.3	19	16.3	20	14.6	21	12.1	23	10.6	22	9.69	22	7.59	23
1981	23.0	26	15.7	27	12.7	27	10.7	27	8.80	27	7.15	27	6.59	27	5.73	27	4.77	27
1982	165	9	129	10	107	12	77.8	12	55.9	13	38.0	14	29.6	14	24.8	15	18.7	15
1983	134	12	119	12	110	10	95.8	10	88.2	8	68.8	10	55.5	9	46.8	9	35.1	8
1984	138	11	120	11	107	11	95.7	11	72.8	11	72.5	8	60.1	7	51.3	6	39.2	6
1985	68.0	16	50.0	18	36.3	18	24.6	18	18.4	18	13.7	19	11.6	21	9.92	21	8.53	21
1986	68.0	17	55.7	17	48.1	16	43.7	15	41.2	15	33.6	15	28.7	15	24.9	14	19.9	14
1987	67.0	18	61.0	15	48.7	15	38.7	16	30.1	16	23.5	16	20.9	16	18.5	16	14.3	16
1988	29.0	21	23.7	21	18.3	21	14.9	23	13.0	23	12.5	21	10.6	23	8.82	23	6.45	25
1989	24.0	23	21.7	23	16.8	24	14.5	24	12.2	24	9.63	24	9.28	24	8.32	24	6.12	26
1990	24.0	24	19.7	24	17.7	23	16.9	19	15.9	19	14.4	18	13.3	18	11.8	18	8.94	20
1991	199	6	158	8	129	9	101	9	80.9	10	53.7	12	40.5	13	33.1	13	24.7	13
1992	24.0	25	16.7	26	14.6	25	11.5	26	8.96	26	8.44	26	8.27	25	8.18	25	7.64	22
1993	188	7	171	6	143	7	121	7	95.2	7	79.9	6	68.9	4	57.4	4	43.6	4

Table E28.1. Mean flow, in cubic feet per second, for station 06423010, Boxelder Creek near Rapid City

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1978	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	5.44	1.85	0.57	0.043	(2)
1979	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1980	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1981	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1982	.000	.000	.000	.000	.000	.000	.000	1.13	.000	.000	.000	.000	.096
1983	.000	.000	.000	.000	.000	.000	4.67	34.7	4.10	1.13	.000	.000	3.76
1984	.000	.000	.000	.000	.000	.000	.000	15.8	21.7	7.06	3.82	.33	4.06
1985	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1986	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1987	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1988	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1989	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1990	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1991	.000	.000	.000	.000	.000	.000	.000	.000	27.9	.000	.000	.000	2.29
1992	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1993	.000	.000	.000	.000	.000	.000	.000	1.82	40.3	.36	.000	.000	3.50

¹Indicates a no-value month.

²Incomplete water year.

Table E28.2. Statistics on mean flow, in cubic feet per second, for station 06423010, Boxelder Creek near Rapid City (October 1978 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	15	15	15	15	15	15	15	15	15	15	15	15	15
Maximum	0.000	0.000	0.000	0.000	0.000	0.000	4.67	34.7	40.3	7.06	3.82	0.33	4.06
Percentile													
75th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.13	4.10	0.000	0.000	0.000	2.29
50th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.31	3.56	6.27	0.57	0.25	0.02	0.91
Standard deviation	0.00	0.00	0.00	0.00	0.00	0.00	1.21	9.52	12.82	1.82	0.99	0.09	1.59
Skewness	(1)	(1)	(1)	(1)	(1)	(1)	3.87	3.01	1.98	3.71	3.87	3.87	1.34
Coefficient of variation	(1)	(1)	(1)	(1)	(1)	(1)	3.87	2.67	2.05	3.19	3.87	3.87	1.75
Percent of annual flow	0.00	0.00	0.00	0.00	0.00	0.00	2.83	32.43	57.03	5.19	2.32	0.20	² 0.179

¹Statistic not computed.

²Serial correlation for annual mean flows.

Table E28.3. Serial correlation for 1-year lag for monthly mean flow for station 06423010, Boxelder Creek near Rapid City (October 1978 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
(1)	(1)	(1)	(1)	(1)	(1)	-0.077	0.310	-0.175	0.064	-0.077	-0.077	

¹Statistic not computed.

Table E28.4. Correlation matrix for monthly mean flow for station 06423010, Boxelder Creek near Rapid City (October 1978 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Mar.	*	*	*	*	*	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Apr.	*	*	*	*	*	*	1.000	0.905	-0.047	0.085	-0.071	-0.071
May	*	*	*	*	*	*	*	1.000	.131	.499	.356	.356
June	*	*	*	*	*	*	*	*	1.000	.364	.333	.333
July	*	*	*	*	*	*	*	*	*	1.000	.986	.986
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	(1)
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

¹Statistic not computed.

Table E28.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06423010, Boxelder Creek near Rapid City

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1979	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
1980	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2
1981	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3
1982	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4
1983	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5
1984	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6
1985	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7
1986	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8
1987	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9
1988	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10
1989	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11
1990	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12
1991	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13
1992	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E28.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06423010, Boxelder Creek near Rapid City

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1979	0.0000	6	0.0000	6	0.0000	6	0.0000	6	0.0000	6	0.0000	6	0.0000	6	0.0000	6	0.0000	6
1980	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7
1981	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8
1982	15.0	5	11.2	5	5.02	5	2.34	5	1.17	5	.59	5	.39	5	.29	5	.19	5
1983	87.0	3	75.0	3	65.6	3	52.3	3	36.9	2	21.9	1	15.2	2	11.4	2	7.50	2
1984	60.0	4	57.0	4	51.1	4	38.5	4	23.0	4	19.8	3	15.7	1	12.3	1	8.13	1
1985	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9
1986	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10
1987	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11
1988	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12
1989	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13
1990	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14
1991	114	1	108	1	84.6	1	54.1	2	27.9	3	13.9	4	9.29	4	6.97	4	4.57	4
1992	.0000	15	.0000	15	.0000	15	.0000	15	.0000	15	.0000	15	.0000	15	.0000	15	.0000	15
1993	102	2	87.3	2	72.0	2	69.3	1	40.7	1	21.3	2	14.2	3	10.6	3	6.98	3

Table E29.1. Mean flow, in cubic feet per second, for station 06423500, Cheyenne River near Wasta

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1914	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	632	111	(2)
1915	238	156	102	(1)	101	850	1,465	4,388	7,551	(1)	(1)	(1)	(2)
1928	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	161	(2)
1929	167	255	140	110	129	1,744	1,803	1,551	3,285	1060	457	531	937
1930	365	327	200	125	800	750	694	745	489	68.6	719	401	471
1931	798	180	150	165	256	240	563	159	599	102	497	66.3	315
1932	193	117	110	100	150	1,340	1,262	1,599	683	(1)	(1)	(1)	(2)
1933	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)
1934	(1)	(1)	(1)	(1)	(1)	(1)	243	46.3	752	596	373	47.7	(2)
1935	346	119	56.5	54.5	303	294	1,108	1,820	4,245	348	65.5	58.7	731
1936	60.4	112	69.5	70.8	60.4	565	346	86.4	115	29.9	117	56.6	141
1937	31.2	104	94.2	61.1	38.9	244	517	99.6	1,417	1,852	78.7	116	389
1938	54.3	64.6	66.7	152	150	491	269	298	939	994	380	664	378
1939	63.2	59.1	66.5	64.2	32.9	289	160	951	589	258	212	139	242
1940	112	55.2	45.7	64.3	153	451	875	363	595	88.5	37.9	47.3	240
1941	113	49.5	49.3	41.8	78.7	159	953	368	1,700	974	479	145	426
1942	218	117	105	66.1	69.5	197	634	6,912	1,704	384	325	116	914
1943	165	141	47.2	36.3	587	907	669	233	2,428	338	61.5	30.1	466
1944	58.5	131	76.0	60.2	69.5	327	736	674	1,268	871	73.8	43.4	365
1945	83.9	197	80.2	70.6	106	672	259	149	745	442	525	105	287
1946	96.8	122	68.2	80.5	212	237	168	1,960	1,947	722	112	544	523
1947	325	199	145	144	312	331	361	249	3,878	1,291	224	74.7	625
1948	118	146	177	95.2	227	811	282	201	926	603	383	44.2	335
1949	94.5	146	77.6	49.8	119	2,240	652	528	570	154	142	62.3	406
1950	105	76.8	31.8	21.1	55.7	348	391	613	80.7	149	193	135	184
1951	101	89.7	67.4	66.1	84.6	121	79.8	39.9	479	189	105	277	141
1952	86.2	94.6	49.4	23.1	322	739	394	1,090	567	255	150	151	327
1953	143	118	147	189	231	718	444	767	502	143	282	69.3	314
1954	50.1	65.2	71.6	72.4	142	151	103	105	119	53.7	51.3	22.4	83.5
1955	91.3	63.2	74.4	52.9	46.1	296	229	350	526	258	225	852	255
³ 1956	135	94.5	215	143	138	302	225	357	122	121	231	85.1	182
1957	65.3	227	114	66.6	265	228	378	2,217	1,283	332	139	108	453
1958	154	145	149	184	190	258	385	151	497	636	341	100	266
1959	138	139	105	124	137	177	155	283	122	107	67.9	146	142
1960	107	94.6	120	60.5	92.9	355	115	71.8	99.1	34.7	78.4	34.2	106
1961	44.8	57.7	71.9	82.4	72.9	125	54.8	92.3	129	85.3	71.0	33.4	76.8
1962	50.9	90.4	31.2	36.4	87.5	181	73.5	1,463	4,002	1,739	264	93.5	677
1963	183	108	88.9	54.5	133	328	284	437	2,180	350	85.4	165	365
1964	106	109	77.2	65.0	110	139	257	248	1,736	286	115	74.8	275
1965	97.6	148	90.0	116	109	160	363	2,363	2,428	810	272	208	599
1966	251	141	150	76.9	82.5	945	629	180	70.5	212	330	190	273
1967	181	149	125	122	134	413	452	839	5,270	869	140	172	735
1968	158	129	104	87.7	161	243	277	116	1,302	184	179	108	252
1969	85.9	101	59.5	50.3	70.0	181	187	165	113	1,528	83.7	79.1	228
1970	128	121	96.6	55.7	149	122	1,595	468	395	74.9	56.6	168	284
1971	127	124	71.0	52.1	151	696	878	2,428	1,907	139	108	227	577

Table E29.1. Mean flow, in cubic feet per second, for station 06423500, Cheyenne River near Wasta—Continued

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1972	188	187	109	63.2	81.4	207	194	410	1,468	406	322	123	312
1973	140	148	127	93.2	175	504	447	641	191	194	108	147	244
1974	159	174	130	448	669	334	335	90.2	71.3	94.0	96.6	108	223
1975	92.2	129	92.8	66.1	78.9	290	552	184	499	96.6	40.0	49.0	180
1976	80.3	93.2	106	46.3	129	123	313	283	899	202	116	65.8	204
1977	94.6	116	91.6	61.9	80.5	225	1,103	232	158	196	199	139	224
1978	203	112	89.6	76.4	79.5	1,199	239	2,527	386	372	313	94.9	481
1979	116	112	91.8	30.0	44.9	607	313	136	468	425	363	78.0	233
1980	127	128	133	40.5	94.8	292	244	97.6	174	49.3	133	85.1	133
1981	149	98.7	86.3	135	149	90.8	68.4	170	96.5	355	105	68.0	131
1982	102	97.7	51.5	21.4	62.8	278	128	1,660	571	724	309	261	359
1983	639	125	139	165	210	262	301	1,038	348	149	111	86.5	299
1984	119	136	70.0	83.7	219	216	738	1,465	850	259	134	107	366
1985	136	151	117	126	102	324	166	70.2	74.9	74.8	114	117	131
1986	120	100	67.7	235	352	618	1,044	493	1,338	253	91.0	305	416
1987	351	232	176	128	184	1,158	618	936	293	105	111	99.8	368
1988	96.5	113	74.6	59.8	84.5	322	157	316	99.5	88.2	96.5	67.8	132
1989	83.6	81.4	51.0	48.9	53.0	185	104	65.8	36.9	34.9	25.4	202	81.0
1990	90.7	93.1	77.4	102	155	190	72.1	309	181	125	89.3	60.2	129
1991	58.6	88.3	38.4	5.04	25.1	116	203	1,746	2,998	139	144	125	473
1992	99.0	220	142	107	159	214	98.3	132	263	230	73.5	79.2	151
1993	67.4	94.9	83.7	80.0	85.9	424	480	1,273	1,025	676	343	293	412

¹Indicates a no-value month or year.²Incomplete water year.³Pactola Reservoir closed during 1956.

Table E29.2. Statistics on mean flow, in cubic feet per second, for station 06423500, Cheyenne River near Wasta (October 1956 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	37	37	37	37	37	37	37	37	37	37	37	37	37
Maximum	639	232	176	448	669	1,199	1,595	2,527	5,270	1,739	363	305	735
Percentile													
75th	156	146	122	119	160	384	466	1,155	1,320	389	231	166	390
50th	119	121	91.8	76.4	110	258	284	309	395	202	114	108	266
25th	91.4	98.2	73.2	53.3	80.9	181	156	143	125	101	87.3	78.6	146
Minimum	44.8	57.7	31.2	5.04	25.1	90.8	54.8	65.8	36.9	34.7	25.4	33.4	76.8
Mean	140.25	127.41	97.26	93.42	141.06	344.05	378.41	697.21	919.53	341.48	155.90	126.17	297.05
Standard deviation	102.54	39.73	33.01	75.79	110.29	270.96	333.54	765.59	1184.33	383.46	99.67	67.98	167.03
Skewness	3.57	1.16	0.19	3.13	3.36	2.01	1.92	1.27	2.11	2.35	0.96	1.09	0.92
Coefficient of variation	0.73	0.31	0.34	0.81	0.78	0.79	0.88	1.10	1.29	1.12	0.64	0.54	0.56
Percent of annual flow	3.94	3.58	2.73	2.62	3.96	9.66	10.62	19.57	25.81	9.59	4.38	3.54	¹ -0.031

¹Serial correlation for annual mean flows.

Table E29.3. Serial correlation for 1-year lag for monthly mean flow for station 06423500, Cheyenne River near Wasta (October 1956 through September 1993)

	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
	-0.055	0.075	-0.080	0.003	0.015	0.154	0.162	-0.227	0.062	-0.116	0.099	-0.076

Table E29.4. Correlation matrix for monthly mean flow for station 06423500, Cheyenne River near Wasta (October 1956 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.279	0.543	0.278	0.188	0.358	0.074	0.031	-0.115	-0.175	0.025	-0.047
Nov.	*	1.000	0.691	0.307	0.382	0.256	0.116	0.109	-0.027	-0.121	0.030	-0.052
Dec.	*	*	1.000	0.386	0.309	0.358	0.098	-0.271	-0.277	-0.340	0.032	-0.198
Jan.	*	*	*	1.000	0.897	0.088	0.076	-0.187	-0.148	-0.143	-0.135	0.063
Feb.	*	*	*	*	1.000	0.049	0.202	-0.046	-0.092	-0.175	-0.229	0.073
Mar.	*	*	*	*	*	1.000	0.224	0.273	-0.098	-0.110	0.302	0.209
Apr.	*	*	*	*	*	*	1.000	0.116	0.011	-0.180	-0.045	0.424
May	*	*	*	*	*	*	*	1.000	0.429	0.266	0.317	0.358
June	*	*	*	*	*	*	*	*	1.000	0.501	0.166	0.246
July	*	*	*	*	*	*	*	*	*	1.000	0.416	0.129
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.266
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E29.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06423500, Cheyenne River near Wasta

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1957	65.0	35	68.7	35	79.7	35	86.2	35	103	36	106	30	126	33	133	33	144	32
1958	60.0	33	63.3	33	74.3	34	82.1	34	94.3	35	107	32	117	31	120	29	123	26
1959	30.0	17	35.0	21	45.0	24	50.3	23	54.5	20	66.3	15	79.8	17	87.2	16	98.4	18
1960	8.00	4	12.0	5	14.4	5	18.1	5	32.7	6	38.8	6	45.7	5	46.8	3	51.8	3
1961	1.00	1	3.27	1	9.11	3	13.9	3	23.9	4	32.4	4	41.9	3	50.0	4	48.7	2
1962	18.0	10	22.0	9	25.9	11	28.0	9	37.5	9	68.8	20	81.5	19	90.2	20	109	23
1963	25.0	14	28.3	15	34.3	18	42.9	20	61.2	22	69.2	21	82.7	21	88.4	18	97.5	17
1964	50.0	30	55.0	32	58.0	31	63.1	30	74.7	28	85.2	26	94.8	26	103	25	105	22
1965	40.0	27	41.7	26	54.3	29	59.6	27	70.0	25	77.7	23	93.1	25	108	26	149	33
1966	36.0	25	42.0	27	47.3	26	53.1	25	67.3	24	89.4	27	126	32	132	32	150	34
1967	40.0	28	43.3	28	52.9	28	63.2	31	75.0	29	92.2	28	104	27	115	27	129	28
1968	25.0	15	28.3	16	33.6	15	38.6	14	47.0	14	49.6	9	59.6	9	69.3	9	79.0	8
1969	35.0	22	38.3	23	42.0	22	43.7	21	53.4	18	65.7	14	80.1	18	88.8	19	90.7	13
1970	35.0	23	38.3	24	44.0	23	45.6	22	49.0	15	50.3	10	68.3	11	82.4	13	99.0	19
1971	30.0	18	31.3	18	33.7	17	34.3	12	41.9	11	67.9	17	82.3	20	102	24	131	29
1972	75.0	36	76.7	36	80.0	36	87.1	36	92.7	34	110	33	116	30	126	31	128	27
1973	25.0	16	25.0	14	30.0	13	42.1	17	71.3	26	115	34	129	34	138	34	142	31
1974	31.0	20	31.7	19	33.6	16	42.1	18	50.8	17	67.3	16	77.4	14	87.6	17	91.3	14
1975	21.0	11	22.3	10	24.6	9	31.3	11	34.3	7	43.5	7	48.0	6	60.5	7	69.0	6
1976	35.0	24	35.3	22	37.7	20	40.3	15	53.6	19	68.0	18	77.9	15	87.0	15	82.1	11
1977	17.0	9	23.3	12	40.3	21	61.5	28	72.4	27	77.8	24	79.4	16	86.6	14	117	24
1978	23.0	12	23.7	13	25.0	10	27.1	8	28.6	5	36.0	5	55.5	8	68.4	8	81.4	10
1979	23.0	13	23.0	11	23.4	8	24.4	6	38.4	10	60.9	11	87.7	22	98.4	23	100	21
1980	16.0	8	16.7	7	20.0	7	29.7	10	42.8	12	83.8	25	87.8	23	92.4	21	96.9	16
1981	12.0	6	13.0	6	14.7	6	17.1	4	20.7	3	25.3	2	43.5	4	56.7	6	64.1	5
1982	51.0	31	52.7	30	58.7	32	66.9	32	90.4	31	128	36	142	35	159	35	257	36
1983	32.0	21	33.7	20	37.4	19	42.5	19	55.3	21	68.1	19	91.6	24	98.1	22	99.8	20
1984	46.0	29	48.7	29	52.3	27	62.3	29	91.9	33	107	31	114	29	123	30	121	25
1985	9.60	5	10.2	4	12.9	4	25.6	7	35.0	8	62.0	12	68.2	10	81.1	11	94.9	15
1986	61.0	34	65.0	34	68.1	33	72.1	33	91.4	32	117	35	158	36	175	36	212	35
1987	30.0	19	30.0	17	32.1	14	41.8	16	49.3	16	65.0	13	71.7	12	81.3	12	87.6	12
1988	15.0	7	19.3	8	28.6	12	37.7	13	44.3	13	46.4	8	48.2	7	54.6	5	63.5	4
1989	7.10	3	7.33	3	7.99	2	12.0	2	15.7	2	28.5	3	29.6	2	35.7	2	73.5	7
1990	3.00	2	3.53	2	4.00	1	4.28	1	4.95	1	10.7	1	21.9	1	35.5	1	45.8	1
1991	51.0	32	54.0	31	56.6	30	58.4	26	75.9	30	106	29	106	28	119	28	132	30
1992	38.0	26	41.3	25	47.0	25	52.4	24	65.8	23	73.1	22	72.7	13	77.7	10	79.4	9

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E29.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06423500, Cheyenne River near Wasta

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1957	15,800	5	9,310	6	6,536	5	4,463	5	3,015	6	1,830	6	1,331	7	1,075	7	792	7
1958	3,610	25	1,832	28	1,310	25	1,110	24	778	24	627	24	501	25	462	22	388	19
1959	4,520	20	1,885	26	880	30	573	30	338	32	245	33	214	31	195	31	170	31
1960	2,000	32	1,833	27	1,171	28	659	28	381	29	242	34	191	35	165	35	141	35
1961	820	37	616	37	465	36	238	37	160	37	121	37	110	37	106	36	96.5	36
1962	16,600	4	14,830	1	10,590	2	6,506	3	4,535	2	3,433	1	2,501	1	1,902	1	1,290	2
1963	11,500	10	8,057	9	4,660	10	3,710	8	2,245	8	1,330	10	1,020	10	849	11	617	12
1964	12,100	8	6,653	10	3,975	13	2,993	12	1,845	10	1,018	15	796	16	638	16	460	16
1965	18,200	3	8,790	8	4,999	8	4,048	7	3,042	5	2,567	3	1,925	3	1,518	3	1,075	3
1966	3,890	23	2,300	24	1,914	22	1,450	22	1,095	20	826	18	597	18	467	20	398	17
1967	19,200	1	13,360	2	11,660	1	8,403	1	5,454	1	3,162	2	2,349	2	1,869	2	1,322	1
1968	4,890	18	3,910	17	2,820	18	1,795	18	1,359	17	747	19	583	19	488	19	382	22
1969	6,540	16	5,320	14	4,447	12	3,032	11	1,593	13	857	17	619	17	506	17	382	21
1970	7,290	15	6,290	11	4,726	9	3,053	10	1,819	12	1,099	13	823	14	655	15	463	15
1971	11,300	11	9,007	7	6,360	6	5,417	4	3,500	4	2,478	4	1,786	4	1,501	4	1,035	4
1972	9,240	12	6,240	12	3,613	15	2,495	15	1,581	14	1,023	14	817	15	674	14	500	14
1973	3,990	22	2,421	23	1,302	26	938	26	752	26	599	25	549	21	463	21	359	23
1974	2,290	29	1,667	29	1,314	24	1,173	23	797	23	674	22	531	22	446	24	341	25
1975	2,470	28	1,960	25	1,189	27	828	27	556	27	433	27	412	27	382	27	283	27
1976	3,480	26	3,273	20	2,300	20	1,575	20	956	22	641	23	528	23	433	25	330	26
1977	4,450	21	3,790	18	3,113	16	1,874	17	1,103	19	680	21	524	24	432	26	351	24
1978	19,100	2	12,940	3	6,854	4	4,087	6	2,670	7	1,533	7	1,414	6	1,122	6	851	6
1979	5,150	17	2,564	22	1,579	23	1,026	25	769	25	556	26	428	26	449	23	387	20
1980	1,520	35	657	36	417	37	349	36	306	34	271	29	218	29	206	29	166	32
1981	1,560	34	981	33	666	32	554	31	366	30	242	35	215	30	186	32	161	34
1982	12,400	7	9,663	5	5,173	7	3,122	9	1,865	9	1,378	8	1,033	8	845	12	621	11
1983	8,470	14	4,027	16	1,931	21	1,566	21	1,063	21	706	20	573	20	496	18	391	18
1984	3,680	24	3,553	19	3,043	17	2,733	13	1,831	11	1,354	9	1,031	9	860	10	627	10
1985	900	36	747	35	625	33	458	33	335	33	251	31	202	34	182	34	165	33
1986	11,700	9	5,093	15	4,611	11	2,519	14	1,446	15	1,132	12	973	12	926	8	695	9
1987	4,650	19	2,967	21	2,652	19	1,714	19	1,321	18	910	16	934	13	768	13	556	13
1988	2,050	30	1,432	30	711	31	525	32	365	31	303	28	271	28	236	28	183	28
1989	2,630	27	1,237	31	584	34	358	34	206	36	154	36	123	36	104	37	88.1	37
1990	2,050	31	1,197	32	902	29	656	29	411	28	253	30	213	33	202	30	173	30
1991	15,000	6	12,540	4	8,866	3	6,795	2	4,115	3	2,417	5	1,682	5	1,302	5	891	5
1992	1,660	33	770	34	481	35	355	35	287	35	248	32	213	32	183	33	183	29
1993	8,640	13	5,813	13	3,813	14	2,326	16	1,401	16	1,159	11	1,005	11	874	9	706	8

Table E30.1. Mean flow, in cubic feet per second, for station 06425100, Elk Creek near Rapid City

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1979 (1)		4.39	1.15	0.97	1.31	13.4	11.6	4.89	2.73	1.43	7.14	0.13	(2)
1980	0.000	.40	1.07	1.15	1.85	1.98	1.66	.68	4.67	.054	.000	.000	1.12
1981	.000	.000	.000	.000	.000	.000	.000	.000	.000	1.19	.000	.000	.10
1982	.000	.000	.000	.000	.000	.000	.047	90.5	5.37	3.45	.87	.000	8.49
1983	31.9	1.91	4.01	6.78	3.01	4.33	11.7	41.9	6.39	4.11	1.22	.91	9.95
1984	3.06	3.44	1.53	3.58	4.68	4.59	8.00	46.0	89.2	17.4	8.75	5.88	16.3
1985	7.47	7.46	5.72	5.15	5.53	14.7	5.92	2.57	1.43	.10	.000	.000	4.68
1986	.000	.000	.000	.000	51.8	13.8	31.4	13.7	7.33	5.28	.88	2.80	10.2
1987	4.93	5.54	3.75	2.87	5.70	11.7	10.9	27.0	6.33	.70	.000	.000	6.64
1988	.000	.94	1.28	.73	.057	9.14	5.47	2.20	.15	.000	.000	.000	1.67
1989	.000	.000	.000	.000	.000	.000	.000	2.35	.000	.000	.000	.000	.20
1990	.000	.000	.000	.000	.000	.000	.000	.088	.002	.000	.000	.000	.008
1991	.000	.000	.000	.000	.000	.000	.000	22.0	1.76	.000	.000	.000	2.01
1992	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1993	.000	.000	.000	.000	.000	11.2	1.27	31.4	7.67	2.32	.11	.000	4.56

¹Indicates a no-value month.²Incomplete water year.**Table E30.2.** Statistics on mean flow, in cubic feet per second, for station 06425100, Elk Creek near Rapid City (October 1978 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	14	14	14	14	14	14	14	14	14	14	14	14	14
Maximum	31.9	7.46	5.72	6.78	51.8	14.7	31.4	90.5	89.2	17.4	8.75	5.88	4.56
Percentile													
75th	3.53	2.29	2.08	0.05	4.89	11.3	8.72	34.0	6.62	3.61	0.87	0.23	8.85
50th	0.000	0.000	0.000	0.000	0.028	3.15	1.46	8.13	3.21	0.40	0.000	0.000	3.29
25th	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.53	0.001	0.000	0.000	0.000	0.17
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mean	3.38	1.41	1.24	1.45	5.19	5.10	5.45	20.03	9.31	2.47	0.84	0.68	4.71
Standard deviation	8.53	2.40	1.89	2.25	13.60	5.76	8.59	26.09	23.19	4.65	2.31	1.68	5.00
Skewness	3.30	1.79	1.48	1.49	3.57	0.61	2.38	1.68	3.63	2.89	3.54	2.77	1.03
Coefficient of variation	2.52	1.71	1.52	1.56	2.62	1.13	1.57	1.30	2.49	1.88	2.74	2.45	1.06
Percent of annual flow	5.98	2.49	2.19	2.56	9.17	9.02	9.64	35.41	16.46	4.37	1.49	1.21	¹ 0.455

¹Serial correlation for annual mean flows.**Table E30.3.** Serial correlation for 1-year lag for monthly mean flow for station 06425100, Elk Creek near Rapid City (October 1978 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
-0.056	0.112	-0.045	0.231	0.095	0.583	0.316	0.111	-0.057	0.036	0.016	-0.048	

Table E30.4. Correlation matrix for monthly mean flow for station 06425100, Elk Creek near Rapid City (October 1978 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.329	0.644	0.845	-0.044	0.122	0.249	0.235	0.030	0.139	0.100	0.078
Nov.	*	1.000	0.907	0.741	-0.016	0.597	0.197	0.018	0.253	0.163	0.218	0.161
Dec.	*	*	1.000	0.901	-0.047	0.548	0.227	0.016	0.066	0.030	0.063	0.018
Jan.	*	*	*	1.000	-0.053	0.359	0.259	0.178	0.302	0.313	0.331	0.271
Feb.	*	*	*	*	1.000	0.521	0.923	-0.051	0.047	0.234	0.070	0.423
Mar.	*	*	*	*	*	1.000	0.642	-0.063	0.037	0.085	-0.009	0.164
Apr.	*	*	*	*	*	*	1.000	0.043	0.156	0.339	0.184	0.498
May	*	*	*	*	*	*	*	1.000	0.357	0.479	0.396	0.272
June	*	*	*	*	*	*	*	*	1.000	0.953	0.989	0.911
July	*	*	*	*	*	*	*	*	*	1.000	0.972	0.956
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.929
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E30.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06425100, Elk Creek near Rapid City

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1979	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.008	10	0.17	10	.39	10	0.74	10
1980	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	1	.0000	1	.0000	1	.0000	1
1981	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3	.0000	2	.0000	2	.0000	2	.0000	2
1982	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4	.034	11	1.39	11	1.95	11	6.84	14
1983	.26	12	.29	12	.30	12	.48	13	.79	13	1.04	12	1.52	12	1.98	12	2.06	11
1984	1.90	14	2.80	14	3.27	14	3.64	14	4.43	14	4.71	14	5.41	14	5.90	14	6.18	13
1985	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5	.0000	3	.0000	3	.0000	3	.0000	3
1986	.27	13	.30	13	.33	13	.40	12	.75	12	1.75	13	2.23	13	2.93	13	3.38	12
1987	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6	.0000	4	.0000	4	.11	9	.46	9
1988	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	5	.0000	5	.0000	4	.0000	4
1989	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	6	.0000	6	.0000	5	.0000	5
1990	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	7	.0000	7	.0000	6	.0000	6
1991	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	8	.0000	8	.0000	7	.0000	7
1992	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	9	.0000	9	.0000	8	.0000	8

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E30.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06425100, Elk Creek near Rapid City

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1980	38.0	11	29.3	10	16.5	10	8.31	10	4.67	10	2.70	10	2.38	10	2.34	10	1.99	10
1981	16.0	12	5.84	12	2.51	12	1.29	12	1.23	12	.62	12	.41	12	.31	12	.20	12
1982	1,060	1	532	1	325	1	183	1	95.7	1	49.6	2	34.4	3	25.8	3	16.9	3
1983	675	3	312	4	140	4	71.2	4	43.1	4	27.5	4	20.6	4	16.7	4	12.5	4
1984	515	4	360	3	226	2	158	2	93.6	2	68.7	1	52.1	1	41.5	1	29.1	1
1985	59.0	9	42.0	9	29.9	9	22.0	9	15.4	8	11.1	8	8.87	7	7.94	7	7.73	7
1986	700	2	430	2	221	3	113	3	61.4	3	43.8	3	35.7	2	28.7	2	20.0	2
1987	346	6	181	6	98.6	6	53.7	6	30.8	6	19.0	6	17.1	5	14.6	5	10.8	5
1988	76.0	8	50.3	8	30.1	8	23.5	8	14.0	9	8.27	9	5.78	9	4.34	9	3.18	9
1989	54.0	10	21.5	11	10.3	11	4.85	11	2.43	11	1.21	11	.81	11	.61	11	.40	11
1990	.49	13	.39	13	.30	13	.19	13	.093	13	.046	13	.031	13	.023	13	.015	13
1991	372	5	164	7	80.2	7	40.8	7	24.0	7	12.2	7	8.16	8	6.12	8	4.01	8
1992	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14
1993	333	7	234	5	128	5	63.5	5	32.5	5	20.1	5	15.1	6	13.3	6	9.10	6

Table E31.1. Mean flow, in cubic feet per second, for station 06425500, Elk Creek near Elm Springs

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1949	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	0.000	0.000	0.000	(2)
1950	0.000	0.000	0.000	0.000	0.000	3.64	138	77.5	1.44	.000	15.4	.000	19.7
1951	.000	.000	.000	.000	.000	6.57	.47	.98	15.0	3.66	.55	26.8	4.47
1952	.068	2.79	.000	.000	5.90	278	113	61.9	14.9	1.42	.000	.000	40.1
1953	.000	.000	.000	.000	.000	35.6	16.3	136	268	4.41	20.8	.000	40.1
1954	.000	.000	.000	.000	8.64	5.55	19.9	4.54	36.1	.010	.000	.000	6.12
1955	.000	.000	.000	.000	.62	.45	2.55	.000	.000	.82	.000	2.03	.53
1956	.000	.000	.000	.000	.052	7.25	.38	.97	.000	1.60	.000	.000	.87
1957	.000	.000	.000	.000	.000	.000	.13	268	51.7	1.18	.000	.000	27.1
1958	.000	.000	.000	.000	.000	.000	1.81	.087	45.2	.000	.000	.000	3.87
1959	.000	.000	.000	.000	.000	.000	.000	.11	.003	.000	.000	.000	.010
1960	.000	.000	.000	.000	.000	10.6	.15	.000	12.3	6.46	.000	.000	2.46
1961	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1962	.000	.000	.000	.000	.000	5.34	.010	428	165	72.5	2.89	.000	56.8
1963	.000	.000	.000	.000	.35	45.1	38.4	62.5	105	9.06	.000	.000	21.8
1964	.000	.000	.000	.78	3.05	3.75	6.80	8.64	215	3.80	.000	.000	19.9
1965	.000	.000	.000	2.10	5.41	6.77	19.3	436	168	68.7	8.94	6.23	60.7
1966	9.08	8.66	4.87	3.65	6.27	187	170	19.7	3.67	15.2	1.49	.000	35.9
1967	.000	1.28	5.35	3.20	6.96	15.4	42.6	315	708	47.9	9.23	5.65	96.4
1968	5.98	9.51	9.60	6.14	8.93	10.8	14.1	5.91	34.1	7.89	2.17	.036	9.55
1969	.000	.000	.000	.000	.000	56.7	34.1	33.2	.68	24.5	.86	.000	12.6
1970	.000	.000	.000	.000	.011	.022	288	49.2	51.5	2.72	.000	.000	32.3
1971	.000	.000	.000	.000	130	162	69.7	302	91.3	10.7	.52	.012	63.6
1972	1.63	10.5	6.12	2.56	15.6	18.7	5.83	26.9	220	48.1	15.7	3.06	31.0
1973	5.33	7.26	6.17	3.44	7.59	18.5	72.5	50.1	50.1	15.2	3.63	.23	20.0
1974	1.82	8.06	4.77	4.05	6.00	6.65	21.1	3.06	.59	.000	.000	.000	4.63
1975	.000	.000	.000	.000	.000	1.83	184	24.7	6.15	4.56	.000	.000	18.3
1976	.000	.000	.000	.000	1.99	2.99	3.45	2.74	158	7.87	1.53	.000	14.7
1977	.000	.000	.000	.000	1.61	7.52	192	21.2	14.2	.077	.000	.099	19.5
1978	.51	.092	.063	.000	.000	327	22.4	86.5	14.2	2.11	.29	.000	38.4
1979	.000	.022	.032	.000	.000	15.6	12.9	2.61	2.56	.53	.35	.000	2.90
1980	.004	.065	.069	.000	.000	.012	.016	.004	6.60	.23	.000	.000	.57
1981	.054	.000	.000	.000	.029	.000	.000	.000	.000	.000	.46	.000	.046
1982	.000	.000	.000	.000	.000	.17	.035	513	19.5	6.17	6.50	.070	46.3
1983	152	.98	1.25	2.98	3.67	12.1	52.4	107	4.30	8.48	.086	.001	29.2
1984	.042	.15	.000	.000	1.53	6.31	30.2	154	95.5	16.4	2.58	.027	25.6
1985	3.19	6.61	4.76	4.39	4.15	27.2	7.39	.97	.053	.000	.000	.000	4.91
1986	.000	.000	.000	.000	109	243	267	133	42.2	4.20	.45	2.59	66.3
1987	.34	6.11	5.63	4.31	4.59	37.1	87.9	80.8	16.6	.36	4.97	.018	20.8
1988	.19	.29	.15	.000	.003	11.7	9.61	4.85	.57	1.91	.012	.000	2.45
1989	.000	.000	.000	.000	.000	1.10	.52	.41	.000	.000	.000	.000	.17
1990	.000	.000	.12	.000	.26	.27	.043	.064	.053	.000	.000	2.22	.25
1991	.000	.000	.000	.000	.000	.000	.000	40.4	13.2	.75	.000	.000	4.58
1992	.000	.040	.000	.000	.44	.29	.000	.000	2.56	.001	.000	.000	.27
1993	.000	.000	.000	.000	.000	21.0	35.4	235	16.6	6.07	2.96	.16	26.8

¹Indicates a no-value month.

²Incomplete water year.

Table E31.2. Statistics on mean flow, in cubic feet per second, for station 06425500, Elk Creek near Elm Springs (October 1949 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	44	44	44	44	44	44	44	44	44	44	44	44	44
Maximum	152	10.5	9.60	6.14	130	327	288	513	708	72.5	10.8	26.8	96.4
Percentile													
75th	0.064	0.25	0.11	0.58	5.20	20.4	49.9	102	51.6	8.33	2.48	0.061	32.0
50th	0.000	0.000	0.000	0.000	0.16	6.71	13.5	23.0	14.5	2.41	0.049	0.000	18.9
25th	0.000	0.000	0.000	0.000	0.000	0.33	0.21	0.97	0.87	0.027	0.000	0.000	2.57
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mean	4.10	1.42	1.11	0.85	7.56	36.35	45.01	84.04	60.69	9.22	2.33	1.12	21.19
Standard deviation	22.89	3.04	2.38	1.64	25.05	77.38	72.55	132.27	121.13	17.25	4.72	4.20	22.31
Skewness	6.57	2.00	2.05	1.73	4.45	2.73	2.07	1.94	3.93	2.70	2.62	5.63	1.34
Coefficient of variation	5.59	2.14	2.14	1.92	3.31	2.13	1.61	1.57	2.00	1.87	2.03	3.76	1.05
Percent of annual flow	1.61	0.56	0.44	0.34	2.98	14.32	17.73	33.11	23.91	3.63	0.92	0.44	¹ 0.151

¹Serial correlation for annual mean flows.

Table E31.3. Serial correlation for 1-year lag for monthly mean flow for station 06425500, Elk Creek near Elm Springs (October 1949 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
-0.032	0.178	0.369	0.265	0.028	-0.054	0.005	-0.166	-0.007	0.088	-0.083	-0.073	

Table E31.4. Correlation matrix for monthly mean flow for station 06425500, Elk Creek near Elm Springs (October 1949 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.041	0.068	0.257	-0.024	-0.033	0.028	0.013	-0.079	-0.001	-0.072	-0.047
Nov.	*	1.000	0.918	0.857	0.006	0.107	0.060	-0.182	0.020	0.145	0.198	-0.052
Dec.	*	*	1.000	0.935	0.002	-0.006	0.023	-0.088	0.235	0.201	0.228	-0.009
Jan.	*	*	*	1.000	-0.018	-0.018	0.022	-0.021	0.181	0.214	0.162	-0.007
Feb.	*	*	*	*	1.000	0.473	0.351	0.231	0.061	0.033	-0.042	0.008
Mar.	*	*	*	*	*	1.000	0.370	0.064	-0.066	-0.047	-0.091	-0.056
Apr.	*	*	*	*	*	*	1.000	-0.016	-0.068	-0.085	-0.008	-0.083
May	*	*	*	*	*	*	*	1.000	0.406	0.603	0.343	0.038
June	*	*	*	*	*	*	*	*	1.000	0.580	0.506	0.149
July	*	*	*	*	*	*	*	*	*	1.000	0.403	0.163
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.069
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E31.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06425500, Elk Creek near Elm Springs

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1950	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
1951	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.88	36	.70	35	1.46	34
1952	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3	.0000	2	.0000	2	.0000	2
1953	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4	.0000	3	.0000	3	.82	33
1954	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5	.0000	4	.0000	4	.0000	3
1955	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6	.0000	5	.0000	5	.33	32
1956	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	6	.0000	6	.0000	4
1957	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	7	.0000	7	.0000	5
1958	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	8	.0000	8	.0000	6
1959	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	9	.0000	9	.0000	7
1960	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	10	.0000	10	.0000	8
1961	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	11	.0000	11	.0000	9
1962	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	12	.0000	12	.0000	10
1963	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	13	.0000	13	.014	25
1964	.0000	15	.0000	15	.0000	15	.0000	15	.0000	15	.0000	15	.0000	14	.0000	14	.095	29
1965	2.00	43	2.00	43	2.07	43	2.11	43	3.45	42	4.13	41	4.80	41	5.74	42	6.37	41
1966	.0000	16	.0000	16	.0000	16	.0000	16	.0000	16	.0000	16	.0000	15	.41	34	1.75	35
1967	.50	42	.52	42	.76	41	1.81	42	4.23	43	5.59	43	6.20	43	7.30	43	7.42	42
1968	.0000	17	.0000	17	.0000	17	.0000	17	.0000	17	.0000	17	.0000	16	.0000	15	.0010	21
1969	.0000	18	.0000	18	.0000	18	.0000	18	.0000	18	.0000	18	.0000	17	.0000	16	.0000	11
1970	.0000	19	.0000	19	.0000	19	.0000	19	.0000	19	.0000	19	.0000	18	.0000	17	.0000	12
1971	.0000	20	.0000	20	.0000	20	.0000	20	.008	39	.011	36	.62	35	1.83	37	3.46	37
1972	.28	41	.29	41	1.07	42	1.56	41	2.54	41	4.18	42	4.96	42	5.28	41	5.40	40
1973	.0000	21	.0000	21	.0000	21	.0000	21	.12	40	.87	39	1.83	39	3.37	40	3.74	39
1974	.0000	22	.0000	22	.0000	22	.0000	22	.0000	20	.0000	20	.0000	19	.0000	18	.0000	13
1975	.0000	23	.0000	23	.0000	23	.0000	23	.0000	21	.0000	21	.0000	20	.0000	19	.0000	14
1976	.0000	24	.0000	24	.0000	24	.0000	24	.0000	22	.0000	22	.0000	21	.0000	20	.060	28
1977	.0000	25	.0000	25	.0000	25	.0000	25	.0000	23	.0000	23	.008	32	.026	31	.13	31
1978	.0000	26	.0000	26	.0000	26	.0000	26	.0000	24	.0000	24	.007	31	.014	29	.009	23
1979	.0000	27	.0000	27	.0000	27	.0000	27	.0000	25	.0000	25	.003	30	.020	30	.023	26
1980	.0000	28	.0000	28	.0000	28	.0000	28	.0000	26	.0000	26	.0000	22	.0000	21	.009	24
1981	.0000	29	.0000	29	.0000	29	.0000	29	.0000	27	.0000	27	.0000	23	.0000	22	.0000	15
1982	.0000	30	.0000	30	.0000	30	.0000	30	.0010	37	1.05	40	1.70	38	2.19	38	27.2	43
1983	.0000	31	.0000	31	.0000	31	.0000	31	.0000	28	.0000	28	.030	33	.048	32	.046	27
1984	.0000	32	.0000	32	.0000	32	.0000	32	.004	38	.86	38	1.88	40	3.00	39	3.53	38
1985	.0000	33	.0000	33	.0000	33	.0000	33	.0000	29	.0000	29	.0000	24	.0000	23	.0000	16
1986	.0000	34	.0000	34	.0000	34	.0000	34	.0000	30	.25	37	1.11	37	1.18	36	2.98	36
1987	.0000	35	.0000	35	.0000	35	.0000	35	.0000	31	.0000	30	.041	34	.092	33	.11	30
1988	.0000	36	.0000	36	.0000	36	.0000	36	.0000	32	.0000	31	.0000	25	.0000	24	.0000	17
1989	.0000	37	.0000	37	.0000	37	.0000	37	.0000	33	.0000	32	.0000	26	.0000	25	.0000	18
1990	.0000	38	.0000	38	.0000	38	.0000	38	.0000	34	.0000	33	.0000	27	.0000	26	.0000	19
1991	.0000	39	.0000	39	.0000	39	.0000	39	.0000	35	.0000	34	.0000	28	.007	28	.007	22
1992	.0000	40	.0000	40	.0000	40	.0000	40	.0000	36	.0000	35	.0000	29	.0000	27	.0000	20

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E31.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06425500, Elk Creek near Elm Springs

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1950	703	22	580	21	351	20	231	21	163	20	110	17	74.3	18	55.8	20	39.2	18
1951	200	31	170	29	105	29	53.5	29	27.3	31	13.7	33	14.1	30	11.8	29	8.91	30
1952	3,640	4	2,647	2	1,468	3	750	5	396	5	215	7	158	7	120	7	79.8	8
1953	3,190	5	2,274	5	1,086	8	531	11	269	11	206	8	142	9	116	9	80.0	7
1954	390	26	274	26	134	28	69.6	28	39.4	28	20.4	29	21.0	26	17.0	26	12.2	27
1955	55.0	35	20.3	37	8.71	40	4.65	39	2.55	39	1.70	38	1.20	38	.90	38	.89	38
1956	25.0	39	16.5	39	13.7	37	11.3	37	7.40	36	3.95	36	2.98	36	2.25	36	1.74	36
1957	2,210	9	1,556	10	1,032	10	572	9	320	9	165	12	110	12	82.6	12	54.2	13
1958	284	28	230	28	144	27	87.4	26	45.2	27	23.6	27	15.7	29	11.8	30	7.72	32
1959	3.40	43	1.17	43	.50	43	.24	43	.12	43	.060	43	.040	43	.030	43	.020	43
1960	256	30	119	31	65.2	31	35.8	32	19.0	35	9.49	35	6.32	35	7.51	34	4.92	34
1961	.0000	44	.0000	44	.0000	44	.0000	44	.0000	44	.0000	44	.0000	44	.0000	44	.0000	44
1962	3,790	3	2,148	6	1,178	5	905	3	558	2	331	2	228	4	171	5	113	5
1963	684	23	515	22	311	22	182	22	107	23	86.7	20	72.1	21	63.7	16	43.4	16
1964	1,900	12	1,147	14	732	13	398	13	217	15	112	16	77.1	16	59.1	17	39.8	17
1965	3,000	6	2,337	4	1,386	4	827	4	481	4	329	3	230	3	177	4	119	4
1966	721	21	707	18	534	17	323	17	245	13	185	10	127	11	97.4	11	67.1	10
1967	3,820	2	2,687	1	1,956	1	1,183	1	723	1	518	1	369	1	282	1	189	1
1968	356	27	151	30	76.9	30	40.6	31	34.8	29	21.1	28	18.1	28	16.2	27	13.9	26
1969	575	24	344	25	234	24	117	25	64.4	25	62.0	25	42.4	25	31.9	25	25.2	25
1970	2,290	8	1,803	8	1,107	7	560	10	306	10	177	11	131	10	98.2	10	64.4	11
1971	2,450	7	2,000	7	1,018	11	584	8	338	8	216	6	196	5	181	3	127	3
1972	1,370	16	757	17	433	19	389	14	245	14	138	14	99.3	14	78.2	14	57.1	12
1973	896	18	449	23	224	25	122	24	77.1	24	75.7	24	59.0	22	48.2	22	35.5	22
1974	54.0	36	52.0	35	48.6	33	35.3	33	21.5	33	14.0	32	11.2	32	9.59	32	8.37	31
1975	767	20	602	20	335	21	241	20	197	17	105	19	72.5	19	55.6	21	36.5	21
1976	1,550	13	943	16	558	16	297	19	164	19	84.1	22	57.4	24	43.6	24	29.3	24
1977	1,260	17	995	15	647	14	360	15	198	16	107	18	76.0	17	58.9	18	38.9	19
1978	1,930	11	1,597	9	1,149	6	657	6	346	7	206	9	153	8	116	8	76.5	9
1979	52.0	37	41.7	36	37.6	35	30.3	35	23.4	32	15.2	31	11.1	33	8.60	33	5.78	33
1980	74.0	32	54.0	34	26.8	36	12.7	36	6.77	37	3.42	37	2.29	37	1.72	37	1.13	37
1981	7.50	41	4.74	41	2.03	42	.95	42	.47	42	.24	42	.16	42	.12	42	.082	42
1982	3,880	1	2,560	3	1,480	2	1,018	2	544	3	275	5	185	6	141	6	92.2	6
1983	1,450	15	1,265	13	644	15	312	18	158	21	82.7	23	58.6	23	45.8	23	31.8	23
1984	813	19	688	19	530	18	328	16	182	18	136	15	98.6	15	75.3	15	51.0	15
1985	70.0	33	70.0	32	58.6	32	42.6	30	29.0	30	17.8	30	13.2	31	11.0	31	9.16	28
1986	1,540	14	1,333	12	1,071	9	607	7	348	6	291	4	252	2	200	2	132	2
1987	533	25	357	24	267	23	166	23	110	22	84.3	21	72.3	20	56.6	19	38.7	20
1988	65.0	34	54.3	33	43.4	34	32.1	34	20.2	34	12.8	34	8.90	34	7.25	35	4.79	35
1989	4.70	42	3.43	42	2.66	41	2.08	41	1.18	41	.99	41	.70	41	.52	41	.34	41
1990	31.0	38	18.9	38	9.50	38	4.43	40	2.22	40	1.11	40	.74	40	.58	40	.42	40
1991	279	29	269	27	159	26	83.2	27	50.3	26	27.6	26	18.6	27	13.9	28	9.14	29
1992	21.0	40	14.1	40	9.07	39	5.12	38	2.56	38	1.28	39	.85	39	.73	39	.54	39
1993	2,170	10	1,475	11	901	12	471	12	254	12	147	13	105	13	79.3	13	53.4	14

Table E32.1. Mean flow, in cubic feet per second, for station 06428500, Belle Fourche River at Wyoming-South Dakota State line

Water Year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1947	(1)	(1)	34.8	45.5	197	538	456	152	524	133	26.7	9.23	(2)
1948	14.1	16.6	13.2	11.5	23.5	495	139	71.3	232	162	28.1	.48	101
1949	.60	9.52	8.35	16.5	14.6	513	472	177	127	40.8	.60	.000	115
1950	2.78	6.07	2.64	.032	4.79	51.2	589	442	75.5	17.5	6.23	.027	99.8
1951	4.67	8.85	9.16	8.13	15.5	24.3	26.1	14.0	33.3	14.4	27.6	145	27.4
1952	18.7	13.2	4.58	2.16	42.3	146	301	95.8	32.6	29.3	18.2	15.1	59.6
³ 1953	.000	.16	.65	3.26	3.04	64.3	53.0	221	287	84.8	251	42.1	84.7
1954	6.65	11.0	8.29	4.65	15.8	30.5	59.0	22.0	25.4	18.3	23.5	.000	18.7
1955	.000	3.60	5.29	1.45	.57	19.0	360	295	228	91.7	78.6	109	99.3
1956	34.0	7.17	38.6	18.7	15.6	174	139	57.7	51.3	22.2	17.6	.21	48.2
1957	.000	11.5	5.19	1.35	2.71	93.8	55.2	76.4	158	77.8	34.3	14.6	44.4
1958	3.22	7.50	8.03	5.81	13.2	50.9	144	99.5	33.3	66.2	47.2	1.48	40.2
1959	.000	2.97	2.79	.29	.20	141	119	64.4	51.8	99.7	36.1	.033	43.5
1960	.000	.58	5.16	.17	.66	255	98.7	103	31.6	2.94	26.8	4.86	44.5
1961	.000	.000	.000	.000	6.42	49.2	18.2	3.10	11.9	3.17	.10	.000	7.69
1962	.000	.000	.000	5.48	117	224	222	695	624	212	41.8	20.0	180
1963	25.3	23.4	20.7	4.55	64.5	167	263	222	249	44.8	53.3	43.1	98.2
1964	10.2	18.5	8.55	10.5	12.3	34.8	85.5	109	464	128	80.6	22.1	81.6
1965	19.8	23.1	15.6	19.7	24.9	62.0	330	388	198	78.2	22.8	19.2	100
1966	29.9	27.1	22.4	18.3	11.6	127	90.8	53.2	82.8	123	41.8	11.7	53.6
1967	16.7	26.5	17.6	12.3	30.4	257	101	320	222	59.6	93.2	75.5	103
1968	19.9	21.1	18.7	18.8	25.0	152	55.9	49.6	86.3	70.3	62.1	23.9	50.4
1969	14.1	16.5	14.5	6.84	2.86	159	200	378	91.0	128	68.9	38.5	94.1
1970	19.7	22.3	18.5	13.9	18.5	51.5	236	407	211	82.3	75.8	19.7	98.5
1971	19.0	26.4	23.3	11.8	110	145	823	272	252	92.0	88.3	39.3	158
1972	118	65.9	24.5	28.7	74.3	931	160	299	362	110	92.1	51.0	194
1973	95.4	37.0	24.4	46.0	47.4	115	251	254	266	97.9	81.0	41.7	113
1974	42.6	48.2	41.0	59.4	86.3	149	178	97.1	54.1	126	101	33.6	84.7
1975	24.3	28.6	13.1	11.2	21.8	100	241	429	159	101	98.6	47.7	107
1976	23.3	22.7	18.7	23.9	37.4	77.3	85.0	60.3	473	120	77.9	79.7	91.1
1977	26.9	30.9	13.0	15.5	18.8	59.8	282	92.1	63.2	102	222	36.7	80.5
1978	55.0	23.4	20.7	18.4	19.2	457	144	1,104	628	113	89.9	47.8	229
1979	29.3	26.4	21.0	6.56	8.66	159	144	51.9	132	66.0	65.6	17.3	60.8
1980	12.4	15.6	13.5	6.44	12.0	49.1	44.0	39.1	62.8	67.3	271	46.4	53.6
1981	18.6	12.9	12.1	8.59	15.2	15.7	89.4	223	195	303	131	77.8	92.4
1982	13.0	11.1	7.42	3.11	5.74	34.5	24.1	456	137	90.5	86.0	39.0	76.5
1983	86.6	37.0	33.7	51.6	89.2	160	127	148	53.7	122	89.5	28.7	85.8
1984	25.5	21.7	11.2	18.3	31.2	143	90.7	355	812	109	44.1	20.5	140
1985	26.1	30.5	19.7	12.5	8.30	136	59.1	71.4	48.0	87.7	57.4	21.6	48.6
1986	16.4	11.0	4.53	15.5	27.5	111	143	259	102	84.4	69.1	65.3	76.0
1987	52.9	26.3	28.7	15.8	37.1	148	221	141	74.5	123	85.7	29.8	82.4
1988	24.7	28.9	12.6	2.61	11.4	63.5	72.5	80.3	105	103	80.5	45.4	52.7
1989	15.0	11.9	10.5	3.58	5.52	132	55.9	111	52.5	92.4	82.2	36.2	51.2
1990	13.2	16.0	22.4	34.5	24.5	81.4	37.9	128	56.2	89.2	86.2	30.6	52.0
1991	10.5	11.0	8.02	2.51	13.7	21.9	31.7	158	86.1	73.2	91.4	48.4	46.7
1992	11.6	18.4	15.8	6.18	15.3	17.4	15.1	36.0	33.5	46.2	45.7	20.5	23.5
1993	7.26	9.59	2.53	.57	1.07	118	74.6	100	363	221	67.8	57.0	85.4

¹Indicates a no-value month.

²Incomplete water year.

³Flow regulated by Keyhole Reservoir since water year 1953.

Table E32.2. Statistics on mean flow, in cubic feet per second, for station 06428500, Belle Fourche River at Wyoming-South Dakota State line (October 1952 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	41	41	41	41	41	41	41	41	41	41	41	41	41
Maximum	118	65.9	41.0	59.4	117	931	823	1,104	812	303	271	109	229
Percentile													
75th	26.5	26.5	20.8	18.3	30.8	155	210	297	250	116	89.7	47.0	98.9
50th	18.6	18.5	13.5	10.5	15.6	115	101	128	105	91.7	77.9	33.6	81.6
25th	8.73	11.0	7.72	3.42	7.36	51.2	57.4	67.9	53.9	68.8	44.9	19.5	49.5
Minimum	0.000	0.000	0.000	0.000	0.20	15.7	15.1	3.10	11.9	2.94	0.10	0.000	7.69
Mean	23.59	19.37	14.95	13.40	26.51	135.04	146.93	208.03	187.24	95.92	79.50	34.34	82.33
Standard deviation	25.74	13.45	9.94	13.82	29.70	152.10	139.48	208.11	186.00	54.46	55.29	24.19	46.04
Skewness	2.16	1.06	0.67	1.80	1.79	3.94	3.06	2.40	1.72	1.57	2.09	0.84	1.28
Coefficient of variation	1.09	0.69	0.67	1.03	1.12	1.13	0.95	1.00	0.99	0.57	0.70	0.70	0.56
Percent of annual flow	2.39	1.97	1.52	1.36	2.69	13.71	14.92	21.12	19.01	9.74	8.07	3.49	¹ 0.152

¹Serial correlation for annual mean flows.

Table E32.3. Serial correlation for 1-year lag for monthly mean flow for station 06428500, Belle Fourche River at Wyoming-South Dakota State line (October 1952 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.416	0.555	0.032	0.314	0.282	0.027	0.137	-0.201	-0.133	-0.182	0.171	-0.058	

Table E32.4. Correlation matrix for monthly mean flow for station 06428500, Belle Fourche River at Wyoming-South Dakota State line (October 1952 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.821	0.672	0.712	0.458	0.635	0.137	0.170	0.135	0.117	0.072	0.113
Nov.	*	1.000	0.693	0.680	0.464	0.533	0.215	0.045	0.073	0.111	0.137	0.155
Dec.	*	*	1.000	0.760	0.438	0.279	0.229	-0.049	-0.136	-0.042	-0.007	-0.037
Jan.	*	*	*	1.000	0.542	0.243	0.117	0.040	0.044	0.128	0.067	0.047
Feb.	*	*	*	*	1.000	0.359	0.529	0.256	0.300	0.228	-0.016	0.063
Mar.	*	*	*	*	*	1.000	0.076	0.358	0.308	0.031	-0.061	0.059
Apr.	*	*	*	*	*	*	1.000	0.268	0.136	0.061	0.016	0.168
May	*	*	*	*	*	*	*	1.000	0.611	0.272	0.019	0.254
June	*	*	*	*	*	*	*	*	1.000	0.403	0.002	0.262
July	*	*	*	*	*	*	*	*	*	1.000	0.209	0.408
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.416
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E32.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06428500, Belle Fourche River at Wyoming-South Dakota State line

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1953	2.00	14	2.00	13	2.29	13	2.57	14	3.67	14	5.67	14	7.29	13	7.38	10	10.9	11
1954	.0000	1	.0000	1	.0000	1	.0000	1	.0000	1	.0000	1	.59	4	1.79	5	1.81	4
1955	4.00	20	4.00	20	4.57	20	5.00	19	5.80	18	7.85	18	21.9	35	19.9	32	37.1	35
1956	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	2.74	7	4.06	7	3.30	6
1957	.10	8	.10	8	.14	8	.50	8	1.54	8	3.92	10	5.42	9	5.82	8	8.45	8
1958	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3	.065	6	1.12	5	1.52	4	1.38	3
1959	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4	.0000	3	.13	3	1.46	3	1.10	2
1960	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5	.0000	4	.0000	1	.0000	1	1.95	5
1961	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6	.0000	5	.0000	2	.0000	2	.045	1
1962	2.00	15	2.00	14	2.00	12	2.50	12	4.13	15	10.5	23	15.2	23	16.9	21	20.1	22
1963	2.00	16	2.50	16	2.64	15	3.86	16	8.33	22	9.10	19	10.4	18	11.9	17	12.8	13
1964	5.00	24	7.33	28	9.14	29	9.86	29	13.1	32	16.9	32	19.0	30	18.7	26	21.2	24
1965	8.60	31	9.00	30	9.29	30	10.0	30	10.6	26	15.2	31	16.7	28	19.6	31	21.5	26
1966	1.90	13	2.47	15	3.14	17	5.14	22	9.23	24	14.2	26	15.6	24	17.8	23	18.3	19
1967	13.0	37	14.3	37	15.1	37	15.7	36	17.0	35	18.3	33	19.3	31	19.5	30	29.7	34
1968	.0000	7	.0000	7	.0000	7	.89	10	2.42	11	3.97	11	5.80	10	9.00	13	10.9	12
1969	10.0	32	10.3	34	11.0	33	11.2	32	12.7	30	14.6	28	16.5	27	17.9	24	20.7	23
1970	7.00	27	7.00	25	7.50	25	8.00	24	11.6	28	15.0	30	19.4	33	20.0	33	24.3	29
1971	15.0	38	16.3	38	18.4	39	18.6	39	23.3	40	25.6	38	29.9	37	38.7	38	53.2	40
1972	10.0	33	10.0	32	10.3	31	13.8	35	21.8	39	25.5	37	34.3	38	37.7	37	51.1	38
1973	8.00	29	8.17	29	8.64	28	9.21	28	20.3	37	35.1	39	39.0	39	39.1	39	50.5	37
1974	7.00	28	7.00	26	7.57	26	8.32	26	9.52	25	11.9	24	13.8	22	18.1	25	22.4	27
1975	12.0	35	13.3	36	14.6	36	15.9	37	16.7	34	18.9	35	20.8	34	21.4	35	25.3	31
1976	10.0	34	10.0	33	10.7	32	11.8	33	13.0	31	14.2	27	15.6	25	18.8	27	27.1	32
1977	15.0	39	17.0	39	17.7	38	18.2	38	18.4	36	18.8	34	19.3	32	20.2	34	27.5	33
1978	4.00	21	4.17	21	4.79	22	5.04	20	6.48	20	7.53	17	11.5	19	14.6	20	21.3	25
1979	4.00	22	4.33	22	4.64	21	5.11	21	5.32	17	6.74	15	9.11	15	10.8	14	12.8	14
1980	6.30	26	7.23	27	7.86	27	8.04	25	8.41	23	9.25	20	10.3	17	11.2	15	13.9	16
1981	2.50	17	2.67	17	2.76	16	2.79	15	3.01	13	3.75	9	5.33	8	6.70	9	10.8	10
1982	18.0	40	18.0	40	18.9	40	19.9	40	21.5	38	35.2	40	39.1	40	43.6	40	52.4	39
1983	5.80	25	6.33	24	7.14	24	8.44	27	10.8	27	13.8	25	16.8	29	19.1	29	22.8	28
1984	4.00	23	4.67	23	4.94	23	5.53	23	8.06	21	10.2	22	12.7	21	16.9	22	19.4	21
1985	3.00	19	3.17	19	3.64	18	3.93	17	4.43	16	7.23	16	9.53	16	11.5	16	15.4	18
1986	12.0	36	12.0	35	12.4	35	13.1	34	14.5	33	19.9	36	22.2	36	24.5	36	37.4	36
1987	.90	11	1.00	11	1.29	11	1.78	11	2.03	10	3.30	8	7.84	14	13.2	19	18.3	20
1988	1.50	12	1.67	12	2.36	14	2.54	13	2.70	12	4.39	13	6.08	11	7.48	11	12.9	15
1989	8.50	30	9.33	31	11.0	34	11.0	31	11.9	29	14.6	29	16.4	26	18.9	28	24.9	30
1990	.60	10	.65	10	.71	10	.81	9	1.60	9	4.33	12	6.79	12	7.84	12	10.3	9
1991	2.50	18	2.67	18	3.86	19	4.11	18	6.08	19	9.27	21	11.8	20	12.8	18	14.1	17
1992	.20	9	.22	9	.25	9	.33	7	.54	7	.81	7	1.31	6	3.16	6	5.41	7

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E32.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06428500, Belle Fourche River at Wyoming-South Dakota State line

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1953	1,760	9	1,246	10	813	12	450	18	313	20	261	18	239	15	216	15	164	15
1954	262	38	178	38	128	38	84.5	40	62.2	39	45.7	40	39.1	40	35.7	40	31.5	40
1955	1,460	12	1001	16	634	19	545	13	363	14	331	10	296	7	245	7	193	6
1956	409	35	372	35	351	27	301	25	219	25	160	26	125	28	107	28	79.0	36
1957	434	34	393	31	328	32	255	27	187	30	142	30	107	31	96.8	31	82.3	32
1958	499	33	385	32	329	31	251	29	175	31	131	31	101	33	86.6	36	74.5	38
1959	594	29	551	24	436	24	280	26	203	26	146	28	112	30	106	30	85.7	31
1960	1,400	13	1,270	9	889	10	563	11	342	16	223	20	164	22	125	25	87.6	28
1961	112	40	106	40	93.0	40	85.0	39	57.8	40	36.5	41	25.7	41	21.0	41	15.3	41
1962	3,760	1	2,920	1	2,361	1	1,525	2	1,166	2	745	2	526	2	463	2	349	2
1963	714	23	560	23	505	22	363	22	290	21	269	17	269	10	229	10	169	14
1964	2,060	5	1,436	8	899	9	741	8	533	7	316	12	237	16	199	17	150	18
1965	1,510	11	1,158	12	711	16	539	14	426	11	364	6	308	6	252	6	180	8
1966	676	26	383	34	300	35	205	35	148	36	117	34	95.0	37	91.7	35	86.9	29
1967	1,110	18	1,070	13	830	11	534	15	328	17	275	16	237	17	228	11	176	12
1968	500	32	440	29	355	26	234	32	156	34	105	36	86.7	38	86.6	37	79.6	35
1969	1,260	15	1,170	11	1,040	8	676	9	416	12	345	9	262	11	222	12	177	11
1970	1,160	17	1,017	15	791	14	583	10	444	9	355	7	289	8	238	9	178	10
1971	1,840	8	1,557	7	1200	7	1,017	5	832	4	562	5	467	4	379	4	285	4
1972	2,030	6	1,960	5	1,657	3	1,330	4	956	3	567	4	470	3	445	3	330	3
1973	1,040	19	826	19	618	20	475	17	345	15	318	11	260	12	222	13	178	9
1974	688	24	530	26	331	29	254	28	195	28	166	25	146	25	131	24	120	24
1975	1,250	16	956	17	752	15	551	12	444	10	347	8	283	9	241	8	189	7
1976	2,220	4	2,020	4	1515	5	857	7	481	8	302	14	225	19	189	19	153	17
1977	870	22	820	20	580	21	411	21	283	22	189	23	147	24	138	22	138	20
1978	1,980	7	1,720	6	1,577	4	1,563	1	1,358	1	884	1	746	1	604	1	427	1
1979	350	37	300	37	253	36	221	33	201	27	160	27	127	27	125	26	104	25
1980	386	36	371	36	317	33	308	24	278	23	178	24	135	26	117	27	90.8	26
1981	1,000	20	917	18	638	18	443	19	326	18	250	19	245	13	221	14	171	13
1982	2,410	3	2,170	3	1,373	6	869	6	534	6	308	13	244	14	199	16	141	19
1983	568	30	384	33	248	37	196	36	171	32	143	29	150	23	133	23	121	23
1984	2,830	2	2,277	2	1,763	2	1,464	3	825	5	587	3	431	5	363	5	260	5
1985	510	31	453	28	362	25	244	31	160	33	102	37	96.2	36	85.2	38	78.1	37
1986	921	21	746	21	677	17	416	20	316	19	223	21	174	21	157	20	129	22
1987	681	25	546	25	462	23	313	23	221	24	189	22	175	20	150	21	133	21
1988	150	39	123	39	117	39	112	38	108	38	107	35	98.2	34	93.3	33	86.4	30
1989	620	28	494	27	338	28	205	34	151	35	123	33	104	32	93.4	32	90.8	27
1990	1,350	14	627	22	330	30	186	37	131	37	101	38	97.3	35	92.1	34	80.2	34
1991	623	27	403	30	311	34	247	30	194	29	127	32	114	29	106	29	81.9	33
1992	86.0	41	84.7	41	82.3	41	73.8	41	55.8	41	46.8	39	45.7	39	43.5	39	33.7	39
1993	1,690	10	1,070	14	803	13	500	16	412	13	299	15	230	18	193	18	160	16

Table E33.1. Mean flow, in cubic feet per second, for station 06430000, Murray Ditch at Wyoming-South Dakota State line

Water year	Month												Annual	
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		
1954	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	1.28	7.92	7.91	6.59	(2)	
1955	3.01	(1)	(1)	(1)	(1)	(1)	(1)	(1)	3.28	8.46	7.54	3.79	(2)	
1956	3.00	0.10	(1)	(1)	(1)	(1)	(1)	0.90	9.11	10.1	8.84	7.01	(2)	
1957	1.65	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	8.56	8.02	.96	(2)	
1958	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	3.90	12.2	9.47	6.75	(2)	
1959	4.99	.38	(1)	(1)	(1)	(1)	(1)	4.59	8.17	8.93	9.03	9.19	(2)	
1960	2.47	.34	(1)	(1)	(1)	(1)	(1)	4.45	9.33	8.84	11.2	6.77	(2)	
1961	3.89	2.69	0.000	0.000	0.000	0.000	1.25	8.61	10.6	7.60	8.15	5.31	4.03	
1962	3.03	1.68	.000	.000	.000	.000	.47	6.49	1.43	.78	6.51	3.35	2.00	
1963	2.55	.98	.000	.000	.000	.000	.000	.000	5.08	9.75	8.05	8.66	2.94	
1964	6.92	2.23	.000	.000	.000	.000	.000	.11	3.44	5.80	11.9	7.63	3.18	
1965	10.4	4.26	.000	.000	.000	.000	.000	.071	1.15	6.83	4.87	8.78	3.05	
1966	5.45	3.15	.000	.000	.000	.000	.000	.47	6.56	10.6	9.96	8.70	3.76	
1967	1.11	.65	.000	.000	.000	.000	.000	.000	.000	8.11	10.7	6.31	2.27	
1968	.64	.012	.000	.000	.000	.000	.000	.000	1.81	12.0	8.43	8.03	2.59	
1969	6.99	2.42	.000	.000	.000	.000	.000	.000	2.92	13.9	16.1	15.6	4.85	
1970	15.9	.34	.000	.000	.000	.000	.000	.042	.21	12.2	14.4	6.40	4.19	
1971	2.47	1.02	.000	.000	.000	.000	.000	.000	.006	13.1	16.0	7.82	3.41	
1972	.046	.000	.000	.000	.000	.000	.000	.000	1.64	4.50	7.36	1.63	1.28	
1973	.70	1.63	.000	.000	.000	.000	.000	.003	1.02	17.8	14.0	1.01	3.06	
1974	3.49	.44	.000	.000	.000	.000	.000	.000	.000	13.1	15.3	9.59	3.53	
1975	7.75	.000	.000	.000	.000	.000	.000	.000	.000	17.9	13.9	8.79	4.08	
1976	4.71	5.30	.000	.000	.000	.000	.000	.000	5.03	2.95	5.38	11.3	3.69	
1977	2.22	.000	.000	.000	.000	.000	.000	.000	.000	7.43	13.2	16.3	4.06	
1978	12.7	2.21	.000	.000	.000	.000	.000	.046	3.01	10.1	8.26	12.0	4.06	
1979	7.97	.000	.000	.000	.000	.008	.000	.000	12.6	13.1	8.74	4.07	3.91	
1980	5.93	.044	.000	.000	.000	.000	.000	4.19	4.20	10.7	13.8	4.48	3.65	
1981	6.64	2.17	.000	.000	.000	.000	.000	2.93	8.92	5.54	12.3	9.91	6.15	4.59
1982	10.1	1.49	.000	.000	.000	.000	.000	.010	.000	8.15	13.4	14.0	3.96	
1983	2.00	.000	.000	.000	.000	.000	.000	.000	3.27	18.2	15.6	12.9	4.37	
1984	8.09	.000	.000	.000	.000	.000	.000	.000	1.50	14.2	10.8	15.2	4.18	
1985	10.1	.74	.000	.000	.000	.000	.000	.000	14.0	15.2	9.82	13.8	14.5	6.55
1986	6.38	.47	.000	.000	.000	.000	.000	.000	.060	4.80	12.2	3.10	2.28	
1987	.000	.000	.000	.000	.000	.000	(1)	(1)	(1)	(1)	(1)	(1)	(2)	

¹Indicates a no-value month.

²Incomplete water year.

Table E33.2. Statistics on mean flow, in cubic feet per second, for station 06430000, Murray Ditch at Wyoming-South Dakota State line (October 1960 through September 1986)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	26	26	26	26	26	26	26	26	26	26	26	26	26
Maximum	15.9	5.30	.000	.000	.000	.008	2.93	14.0	15.2	18.2	16.3	15.6	2.28
Percentile													
75th	8.00	2.21	0.000	0.000	0.000	0.000	0.000	1.40	5.19	13.1	14.1	10.2	4.10
50th	5.69	0.86	0.000	0.000	0.000	0.000	0.000	0.002	2.36	10.6	11.6	8.34	3.72
25th	2.41	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.17	7.41	8.39	5.10	3.02
Minimum	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.78	4.87	1.01	1.28
Mean	5.70	1.30	0.00	0.00	0.00	0.00	0.18	1.85	3.52	10.54	11.53	8.18	3.60
Standard deviation	4.00	1.42	0.00	0.00	0.00	0.00	0.62	3.72	4.07	4.35	3.31	4.07	1.05
Skewness	0.67	1.23	(1)	(1)	(1)	5.10	4.04	2.09	1.57	-0.15	-0.21	0.20	0.27
Coefficient of variation	0.70	1.09	(1)	(1)	(1)	5.10	3.45	2.02	1.15	0.41	0.29	0.50	0.29
Percent of annual flow	13.32	3.05	0.00	0.00	0.00	0.00	0.42	4.31	8.23	24.62	26.94	19.12	¹ 0.091

¹Statistic not computed.

²Serial correlation for annual mean flows.

Table E33.3. Serial correlation for 1-year lag for monthly mean flow for station 06430000, Murray Ditch at Wyoming-South Dakota State line (October 1960 through September 1986)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.129	-0.058	(1)	(1)	(1)	-0.042	-0.005	0.056	-0.134	-0.001	0.110	0.279	

¹Statistic not computed.

Table E33.4. Correlation matrix for monthly mean flow for station 06430000, Murray Ditch at Wyoming-South Dakota State line (October 1960 through September 1986)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.162	(1)	(1)	(1)	0.116	-0.012	0.092	0.091	-0.005	0.010	0.370
Nov.	*	1.000	(1)	(1)	(1)	-0.187	0.202	0.228	0.029	-0.385	-0.329	0.096
Dec.	*	*	1.000	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Jan.	*	*	*	1.000	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Feb.	*	*	*	*	1.000	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Mar.	*	*	*	*	*	1.000	-0.059	-0.101	0.455	0.120	-0.172	-0.206
Apr.	*	*	*	*	*	*	1.000	0.546	0.219	-0.046	-0.222	-0.188
May	*	*	*	*	*	*	*	1.000	0.607	-0.269	-0.120	0.015
June	*	*	*	*	*	*	*	*	1.000	0.015	-0.107	0.088
July	*	*	*	*	*	*	*	*	*	1.000	0.578	0.291
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.319
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

¹Statistic not computed.

Table E33.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06430000, Murray Ditch at Wyoming-South Dakota State line

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1961	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	.0000	1	0.0000	1	.81	11
1962	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.60	8
1963	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3	.0000	3	1.54	19
1964	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4	.0000	4	2.49	24
1965	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5	.0000	5	1.47	17
1966	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6	.0000	6	.34	4
1967	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.0000	7	.11	3
1968	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	.0000	8	1.61	20
1969	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	.0000	9	2.91	26
1970	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.61	9
1971	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.0000	11	.008	2
1972	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.0000	12	.39	6
1973	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.0000	13	.67	10
1974	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	.0000	14	1.38	15
1975	.0000	15	.0000	15	.0000	15	.0000	15	.0000	15	.0000	15	.0000	15	.0000	15	1.67	21
1976	.0000	16	.0000	16	.0000	16	.0000	16	.0000	16	.0000	16	.0000	16	.0000	16	.39	7
1977	.0000	17	.0000	17	.0000	17	.0000	17	.0000	17	.0000	17	.0000	17	.0000	17	2.54	25
1978	.0000	18	.0000	18	.0000	18	.0000	18	.0000	18	.0000	18	.0000	18	.0000	18	1.40	16
1979	.0000	19	.0000	19	.0000	19	.0000	19	.0000	19	.0000	19	.0000	19	.0000	19	1.01	12
1980	.0000	20	.0000	20	.0000	20	.0000	20	.0000	20	.0000	20	.0000	20	.0000	20	1.48	18
1981	.0000	21	.0000	21	.0000	21	.0000	21	.0000	21	.0000	21	.0000	21	.0000	21	2.00	23
1982	.0000	22	.0000	22	.0000	22	.0000	22	.0000	22	.0000	22	.0000	22	.0000	22	.38	5
1983	.0000	23	.0000	23	.0000	23	.0000	23	.0000	23	.0000	23	.0000	23	.0000	23	1.37	14
1984	.0000	24	.0000	24	.0000	24	.0000	24	.0000	24	.0000	24	.0000	24	.0000	24	1.90	22
1985	.0000	25	.0000	25	.0000	25	.0000	25	.0000	25	.0000	25	.0000	25	.0000	25	1.24	13
1986	.0000	26	.0000	26	.0000	26	.0000	26	.0000	26	.0000	26	.0000	26	.0000	26	.0000	1

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E33.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06430000, Murray Ditch at Wyoming-South Dakota State line

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1961	20.0	19	19.3	18	17.9	16	14.4	19	11.1	22	9.60	23	9.43	18	8.83	14	6.93	7
1962	15.0	24	11.0	26	10.6	26	10.0	26	8.80	26	5.06	26	3.66	26	3.83	26	3.19	25
1963	14.0	26	13.0	25	12.9	25	11.5	25	10.7	24	9.64	22	8.88	20	8.03	18	5.27	19
1964	16.0	22	15.3	23	14.9	23	13.3	22	12.1	20	9.84	21	8.48	22	7.27	21	4.82	21
1965	16.0	23	15.7	22	13.9	24	12.4	23	11.0	23	7.86	24	6.92	23	5.50	23	3.62	23
1966	20.0	20	18.3	19	16.0	21	13.5	20	11.8	21	10.3	18	9.80	15	8.99	13	6.06	13
1967	22.0	14	20.7	15	18.3	15	15.5	16	12.2	19	11.7	14	8.60	21	6.45	22	4.23	22
1968	22.0	15	21.3	13	19.4	12	17.9	12	12.4	18	10.9	17	9.67	16	7.73	19	5.07	20
1969	30.0	7	25.3	9	20.6	11	19.0	10	18.8	5	15.9	5	15.3	2	12.4	3	8.10	3
1970	33.0	5	33.0	4	32.0	2	26.1	3	18.1	7	14.9	8	11.3	12	8.53	16	5.60	17
1971	28.0	9	26.0	7	24.4	7	23.1	6	18.1	8	16.6	4	12.6	8	9.48	10	6.22	12
1972	30.0	8	25.0	10	16.6	18	12.1	24	9.60	25	6.21	25	4.68	25	3.88	25	2.55	26
1973	37.0	1	36.0	1	32.6	1	26.9	2	22.3	1	17.0	3	11.6	11	8.73	15	5.73	15
1974	21.0	18	17.0	20	16.6	19	16.3	15	15.7	10	14.9	9	12.8	7	9.73	8	6.38	10
1975	34.0	3	33.3	2	27.0	5	25.4	5	19.1	4	17.1	2	13.8	4	10.4	6	6.83	8
1976	20.0	21	16.7	21	16.1	20	15.2	17	13.0	14	11.5	15	8.89	19	7.68	20	5.71	16
1977	34.0	4	33.3	3	30.1	3	25.5	4	21.6	2	15.5	6	14.2	3	11.7	4	7.73	4
1978	22.0	16	21.3	14	18.6	14	16.4	14	13.0	15	10.2	19	10.2	14	8.51	17	5.59	18
1979	27.0	10	23.3	12	22.1	8	20.5	8	14.4	13	13.4	12	11.7	10	9.79	7	6.44	9
1980	26.0	12	25.0	11	21.3	10	17.7	13	15.2	12	13.0	13	10.4	13	9.57	9	6.29	11
1981	25.0	13	20.3	17	17.9	17	15.2	18	12.5	17	11.3	16	9.52	17	9.35	11	7.67	5
1982	22.0	17	20.7	16	19.0	13	18.8	11	15.6	11	14.4	10	12.1	9	9.06	12	5.94	14
1983	31.0	6	31.0	5	29.4	4	27.3	1	20.3	3	18.3	1	15.8	1	12.8	2	8.37	2
1984	35.0	2	27.7	6	21.4	9	20.6	7	18.1	9	14.3	11	13.6	5	10.7	5	6.98	6
1985	27.0	11	26.0	8	24.9	6	20.0	9	18.8	6	15.0	7	13.5	6	13.6	1	11.2	1
1986	15.0	25	15.0	24	15.0	22	13.5	21	12.6	16	10.2	20	6.88	24	5.18	24	3.40	24