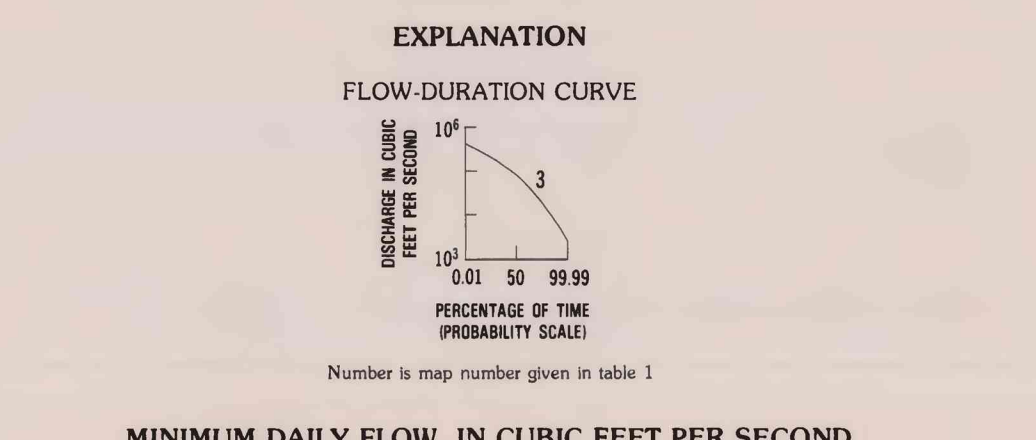


**METHODS OF ANALYSIS**

Analysis of the streamflow characteristics in this report generally followed established techniques as reported by Riggs (1972). The analysis involved defining low-flow characteristics for 177 continuous-record stations. Measurements of discharge at 161 partial-record stations and miscellaneous sites were correlated with the discharge of nearby continuous-record stations to define the low-flow frequency at the partial-record stations and miscellaneous sites. The location of the streamflow-gaging stations used in this study are shown on sheet 1.

**FLOW-DURATION DATA FOR CONTINUOUS-RECORD STATIONS**

Flow-duration data define the flow characteristics of a stream throughout the range of flow at a stream-gaging station. The characteristics of the flow-duration curves differ from stream to stream and from point to point on the same stream. A curve with a steep slope throughout denotes extremely variable flow largely from surface runoff, whereas a curve with a flat slope indicates a well-sustained flow from surface or underground storage. The flow-duration data were determined from values of daily mean flow and represent the percentage of time during the period of record that the daily mean flow was equal to or greater than the specified values. Discharge values are shown in table 1 for 10, 25, 50, 75, 90, and 99 percent and in the graphs of sheet 2 from 0.01 to 99.99 percent, a probability scale that cannot reach 0 or 100 percent.



**EXPLANATION**

▲ Continuous-record stream-gaging station  
● Continuous-record spring-gaging station

**Table 1.—Discharge and basin characteristics of selected springs and streams**

No.	Station number	Station name	Drainage area (square miles)	Mean discharge (cubic feet per second)		Discharge that was equal to or exceeded in indicated percent of time					
				10	25	50	75	90	95	99	
1	0095700	Missouri River at Alton, Mo.	171,930	98,865	200,000	150,000	76,000	50,000	33,000	26,000	
2	0095800	Kansas River at Tarkenton, Kan.	56,720	5,434	12,600	5,434	2,900	1,600	847	527	
3	0095900	Missouri River at Kansas City, Mo.	488,200	84,832	180,000	80,000	42,000	25,000	15,000	10,000	
4	0096000	Indian Creek at DeWitt Park, Kan.	25.8	23.9	36	14	5	2.1	0.5	0.1	
5	0096100	Texas River at DeWitt Park, Kan.	21.8	8.25	12	5	2	0.8	0.2	0.1	
6	0096200	Missouri River at Warren, Mo.	487,200	48,230	99,000	60,000	40,000	25,000	15,000	10,000	
7	0096300	Missouri River at Warren, Mo.	507,900	92,120	170,000	71,000	45,000	28,000	16,000	10,000	
8	0096400	Marion An Cogan River at Marion, Kan.	201	106	213	89.6	24	12	6.7	4.1	
9	0096500	Big Spring River at Big Spring, Kan.	114	64.3	80	31	13	6.3	2.7	0.9	
10	0096600	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
11	0096700	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
12	0096800	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
13	0096900	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
14	0097000	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
15	0097100	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
16	0097200	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
17	0097300	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
18	0097400	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
19	0097500	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
20	0097600	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
21	0097700	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
22	0097800	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
23	0097900	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
24	0098000	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
25	0098100	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
26	0098200	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
27	0098300	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
28	0098400	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
29	0098500	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
30	0098600	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
31	0098700	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
32	0098800	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
33	0098900	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
34	0099000	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
35	0099100	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
36	0099200	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
37	0099300	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
38	0099400	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
39	0099500	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
40	0099600	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
41	0099700	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
42	0099800	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
43	0099900	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
44	0100000	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
45	0100100	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
46	0100200	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
47	0100300	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
48	0100400	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
49	0100500	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
50	0100600	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
51	0100700	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
52	0100800	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
53	0100900	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
54	0101000	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
55	0101100	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
56	0101200	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
57	0101300	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
58	0101400	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
59	0101500	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
60	0101600	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
61	0101700	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
62	0101800	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
63	0101900	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
64	0102000	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
65	0102100	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
66	0102200	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
67	0102300	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
68	0102400	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
69	0102500	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
70	0102600	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
71	0102700	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
72	0102800	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
73	0102900	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
74	0103000	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
75	0103100	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
76	0103200	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
77	0103300	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
78	0103400	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
79	0103500	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
80	0103600	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
81	0103700	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
82	0103800	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
83	0103900	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
84	0104000	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
85	0104100	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
86	0104200	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
87	0104300	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
88	0104400	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
89	0104500	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
90	0104600	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
91	0104700	Neosho and Ten Mile Creeks near Lawrence, Kan.	1,200	171	340	216	132	73.2	41.3	25.2	
92	0104800	Neosho and Ten Mile Creeks near Lawrence									