

Annual Peak-Flow Frequency Analysis

For more information on the contents of this documentation, see Kessler and others (2013).

**Streamgauge number and name:**

04017700 McKinley Lake tributary at McKinley, Minn.

**Peak-flow information:**

Number of systematic peak flows in record	22
Systematic period begins	1960
Systematic period ends	1981
Length of systematic record	22
Years without information	0
Number of historical peak flows in record	0

**Frequency analysis options:**

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	0.082
Standard error of generalized skew	0.426
Low-outlier method	Bulletin 17B Grubbs-Beck test

**Bulletin 17B systematic record analysis results:**

**Moments of the common logarithms of the peak flows:**

	Mean	Standard deviation	Skewness
	1.0844	0.3566	-0.653

**Outlier criteria and number of peak flows exceeding:**

Low	1.7	0
High	89.2	0

**Bulletin 17B Final analysis results:**

**Moments of the common logarithms of the peak flows:**

	Standard	
Mean	deviation	Skewness
1.0844	0.3566	-0.202

**Annual frequency curve at selected exceedance probabilities:**

[WIE, Weighted independent estimate; --, not computed]

Exceedance probability	Peak estimate	Lower-95 level	Upper 95 level	WIE estimate	Lower-95 WIE level	Upper 95 WIE level
0.9950	1.3	0.5	2.1	--	--	--
0.9900	1.6	0.7	2.6	--	--	--
0.9500	3.0	1.7	4.4	--	--	--
0.9000	4.2	2.6	5.9	--	--	--
0.8000	6.1	4.1	8.3	--	--	--
0.6667	8.7	6.2	11.6	--	--	--
0.5000	12.5	9.3	16.8	13.2	9.73	18.0
0.4292	14.4	10.8	19.8	--	--	--
0.2000	24.4	18.0	36.4	26.4	18.90	36.8
0.1000	34.1	24.3	55.1	37.8	26.10	54.7
0.0400	48.2	32.9	85.5	55.6	36.10	85.7
0.0200	59.9	39.5	113.0	71.8	44.30	116.0
0.0100	72.5	46.4	145.0	90.0	52.50	154.0
0.0050	86.1	53.6	181.0	--	--	--
0.0020	106.0	63.5	237.0	143.0	74.00	276.0

**Peak-flow data used in the analysis:**

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1960	13.0	--
1961	27.0	--
1962	11.0	--
1963	18.0	--
1964	11.0	--
1965	15.0	--
1966	13.0	--
1967	8.1	--
1968	27.0	--
1969	25.0	--
1970	2.7	--
1971	17.0	--
1972	6.5	--
1973	25.0	--
1974	19.0	--
1975	5.2	--
1976	2.0	--
1977	39.0	--
1978	41.0	--
1979	10.0	--
1980	3.4	--
1981	11.0	--