

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05383720 Mill Creek near Chatfield, Minn.

Peak-flow information:

Number of systematic peak flows in record	24
Systematic period begins	1962
Systematic period ends	1985
Length of systematic record	24
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	-0.25
Standard error of generalized skew	0.4266
Low-outlier method	Single Grubbs-Beck test

EMA systematic record analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
3.1808	0.3730	0.601

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	535

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
3.1783	0.3778	0.069	

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	170	32.3	311	--	--	--
0.9900	208	50.8	360	--	--	--
0.9500	367	156.0	567	--	--	--
0.9000	498	261.0	742	--	--	--
0.8000	723	443.0	1,050	--	--	--
0.6667	1,030	681.0	1,490	--	--	--
0.5000	1,490	1,020.0	2,190	1,320	956	1,820
0.4292	1,740	1,200.0	2,600	--	--	--
0.2000	3,130	2,130.0	5,260	2,520	1,810	3,490
0.1000	4,630	3,050.0	9,260	3,450	2,450	4,860
0.0400	7,060	4,370.0	19,100	4,870	3,370	7,040
0.0200	9,290	5,450.0	32,500	6,150	4,130	9,170
0.0100	11,900	6,580.0	54,600	7,740	4,940	12,100
0.0050	15,000	7,760.0	90,400	--	--	--
0.0020	19,800	9,370.0	173,000	12,200	6,910	21,500

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

* Less than low-outlier threshold

Water	Peak	Peak-flow
year	flow	code
1962	4,150	--
1963	1,030	--
1964	137	*
1965	1,800	--
1966	1,900	--
1967	1,550	--
1968	535	--
1969	721	--
1970	555	--
1971	1,130	--
1972	1,170	--
1973	1,530	--
1974	7,990	--
1975	1,700	--
1976	1,600	--
1977	680	--
1978	8,580	--
1979	3,100	--
1980	4,850	--
1981	5,000	--
1982	900	--
1983	660	--
1984	1,320	--
1985	730	--