

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05062470 Marsh Creek tributary near Mahnommen, Minn.

Peak-flow information:

Number of systematic peak flows in record	25
Systematic period begins	1961
Systematic period ends	1985
Length of systematic record	25
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	-0.38
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
2.0193	0.4490	-0.875

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	15

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.0212	0.4429	-0.560

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	4.47	0.20	11.6	--	--	--
0.9900	6.50	0.43	15.2	--	--	--
0.9500	17.00	2.81	31.5	--	--	--
0.9000	27.20	7.94	46.4	--	--	--
0.8000	46.30	21.00	73.5	--	--	--
0.6667	73.60	41.40	112.0	--	--	--
0.5000	115.00	72.40	173.0	107	76.3	150
0.4292	138.00	88.50	206.0	--	--	--
0.2000	252.00	169.00	396.0	226	163.0	314
0.1000	360.00	242.00	623.0	318	223.0	453
0.0400	507.00	332.00	1,050.0	438	290.0	662
0.0200	621.00	391.00	1,480.0	527	331.0	837
0.0100	737.00	442.00	2,040.0	614	366.0	1,030
0.0050	852.00	483.00	2,740.0	--	--	--
0.0020	1,000.00	525.00	3,960.0	810	427.0	1,540

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
1961	6	*
1962	116	--
1963	15	---
1964	140	---
1965	241	--
1966	205	--
1967	110	---
1968	25	---
1969	436	--
1970	107	--
1971	98	---
1972	110	--
1973	46	--
1974	370	--
1975	119	---
1976	102	--
1977	61	--
1978	375	---
1979	460	---
1980	135	---
1981	78	--
1982	99	---
1983	26	---
1984	165	--
1985	250	--