

Annual Peak-Flow Frequency Analysis

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

**Streamgauge number and name:**

05315200 Prairie Ravine near Marshall, Minn.

**Peak-flow information:**

Number of systematic peak flows in record	27
Systematic period begins	1959
Systematic period ends	1985
Length of systematic record	27
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	-0.23
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
1.5501	0.4121	-0.603

**Low-outlier information:**

Number of low outliers	1
Low-outlier threshold	6.3

**Final analysis results:**

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

	Standard	
Mean	deviation	Skewness
1.5513	0.4086	-0.375

**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	2.27	0.20	5.00	--	--	--
0.9900	3.09	0.36	6.25	--	--	--
0.9500	6.90	1.95	11.60	--	--	--
0.9000	10.30	4.20	16.40	--	--	--
0.8000	16.50	8.88	24.70	--	--	--
0.6667	25.00	15.50	36.40	--	--	--
0.5000	37.70	25.20	54.50	39.8	28.3	56
0.4292	44.50	30.20	64.50	--	--	--
0.2000	79.50	55.20	122.00	86.4	61.7	121
0.1000	114.00	78.10	193.00	127.0	88.5	184
0.0400	163.00	108.00	332.00	192.0	126.0	293
0.0200	202.00	129.00	480.00	248.0	154.0	399
0.0100	244.00	148.00	676.00	314.0	186.0	533
0.0050	288.00	165.00	933.00	--	--	--
0.0020	350.00	185.00	1,400.00	495.0	256.0	958

**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
1959	2.0	*
1960	65.0	--
1961	8.3	--
1962	75.0	--
1963	67.0	--
1964	9.8	--
1965	55.0	--
1966	44.0	--
1967	47.0	--
1968	41.0	--
1969	221.0	--
1970	23.0	--
1971	45.0	--
1972	55.0	--
1973	26.0	--
1974	6.3	--
1975	19.0	--
1976	16.0	--
1977	131.0	--
1978	54.0	--
1979	89.0	--
1980	40.0	--
1981	20.0	--
1982	25.0	--
1983	83.0	--
1984	87.0	--
1985	28.0	--