

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05267800 Big Mink Creek tributary near Lastrup, Minn.

Peak-flow information:

Number of systematic peak flows in record	20
Systematic period begins	1961
Systematic period ends	1980
Length of systematic record	20
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	-0.21
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
0.9603	0.4787	0.206

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	2.8

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
0.9585	0.4822	-0.055

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	0.49	0.04	1.18	--	--	--
0.9900	0.66	0.07	1.46	--	--	--
0.9500	1.44	0.37	2.70	--	--	--
0.9000	2.18	0.79	3.86	--	--	--
0.8000	3.58	1.70	6.08	--	--	--
0.6667	5.68	3.09	9.50	--	--	--
0.5000	9.18	5.36	15.60	14.8	9.78	22.3
0.4292	11.20	6.62	19.40	--	--	--
0.2000	23.20	13.80	46.90	34.2	21.60	54.2
0.1000	37.50	21.40	94.70	54.8	33.00	91.2
0.0400	62.20	33.20	229.00	90.1	50.50	161.0
0.0200	86.10	43.10	440.00	123.0	65.60	232.0
0.0100	115.00	53.80	824.00	162.0	81.10	323.0
0.0050	150.00	64.90	1,510.00	--	--	--
0.0020	206.00	80.20	3,280.00	274.0	122.00	616.0

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

NA Missing peak value

* Less than low-outlier threshold

Water	Peak	Peak-flow
year	flow	code
1961	0.2	*
1962	14.0	--
1963	3.3	--
1964	5.8	--
1965	27.0	--
1966	21.0	--
1967	23.0	--
1968	2.8	--
1969	35.0	--
1970	21.0	--
1971	28.0	--
1972	86.0	--
1973	11.0	--
1974	4.0	--
1975	14.0	--
1976	11.0	--
1977	3.0	--
1978	NA	NA
1979	NA	NA
1980	NA	NA