

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05384300 Big Springs Creek near Arendahl, Minn.

Peak-flow information:

Number of systematic peak flows in record	23
Systematic period begins	1959
Systematic period ends	1981
Length of systematic record	23
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.23
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:

	Standard		
Mean	deviation	Skewness	
1.2443	0.4929	0.088	

Outlier criteria and number of peak flows exceeding:

Low	1.1	0
High	282.5	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
1.2443	0.4929	-0.087	

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	0.9	0.3	1.7	--	--	--
0.9900	1.2	0.4	2.2	--	--	--
0.9500	2.6	1.2	4.4	--	--	--
0.9000	4.1	2.1	6.4	--	--	--
0.8000	6.8	4.0	10.2	--	--	--
0.6667	10.9	6.9	16.1	--	--	--
0.5000	17.8	12.0	26.7	21.4	14.3	31.9
0.4292	21.8	14.8	33.2	--	--	--
0.2000	45.8	30.3	78.5	56.7	38.9	82.6
0.1000	74.3	47.0	142.0	91.9	63.0	134.0
0.0400	124.0	73.1	270.0	149.0	100.0	221.0
0.0200	171.0	96.4	410.0	200.0	131.0	305.0
0.0100	229.0	123.0	596.0	258.0	161.0	413.0
0.0050	298.0	153.0	838.0	--	--	--
0.0020	408.0	199.0	1,260.0	427.0	236.0	772.0

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1959	9.0	--
1960	40.0	--
1961	18.0	--
1962	19.0	--
1963	6.2	--
1964	2.0	--
1965	18.0	--
1966	19.0	--
1967	32.0	--
1968	28.0	--
1969	26.0	--
1970	7.6	--
1971	16.0	--
1972	12.0	--
1973	15.0	--
1974	256.0	--
1975	15.0	--
1976	16.0	--
1977	1.6	--
1978	57.0	--
1979	125.0	--
1980	36.0	--
1981	6.2	--