

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05311250 North Branch Yellow Medicine River tributary near Wilno, Minn.

Peak-flow information:

Number of systematic peak flows in record	26
Systematic period begins	1960
Systematic period ends	1985
Length of systematic record	26
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.299
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
1.2000	0.3692	-0.625

Outlier criteria and number of peak flows exceeding:

Low	1.9	0
High	133.0	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
1.2000	0.3692	-0.436

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	1.3	0.5	2.2	--	--	--
0.9900	1.7	0.8	2.7	--	--	--
0.9500	3.6	2.1	5.2	--	--	--
0.9000	5.2	3.3	7.2	--	--	--
0.8000	7.9	5.5	10.6	--	--	--
0.6667	11.6	8.5	15.3	--	--	--
0.5000	16.9	12.8	22.4	16.2	11.8	22.2
0.4292	19.5	14.9	26.4	--	--	--
0.2000	32.8	24.5	47.8	32.1	23.6	43.8
0.1000	44.9	32.6	69.8	44.7	32.0	62.5
0.0400	61.4	42.9	103.0	62.8	42.6	92.5
0.0200	74.1	50.4	130.0	77.8	50.2	120.0
0.0100	87.0	57.9	159.0	94.5	58.0	154.0
0.0050	100.0	65.2	190.0	--	--	--
0.0020	118.0	74.7	233.0	138.0	74.8	256.0

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1960	19.0	--
1961	50.0	--
1962	26.0	--
1963	28.0	--
1964	20.0	--
1965	48.0	--
1966	21.0	--
1967	6.8	--
1968	56.0	--
1969	54.0	--
1970	28.0	--
1971	34.0	--
1972	11.0	--
1973	13.0	--
1974	2.0	--
1975	13.0	--
1976	12.0	--
1977	16.0	--
1978	11.0	--
1979	15.0	--
1980	21.0	--
1981	4.6	--
1982	3.4	--
1983	5.1	--
1984	21.0	--
1985	14.0	--