

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05047970 West Branch Twelvemile Creek tributary near Graceville, Minn.

Peak-flow information:

Number of systematic peak flows in record	26
Systematic period begins	1964
Systematic period ends	1989
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	-0.263
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:

	Mean	Standard deviation	Skewness
	1.4964	0.4519	0.235

Outlier criteria and number of peak flows exceeding:

Low	2.3	0
High	423.8	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
1.4964	0.4519	-0.033	

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	2.1	0.8	3.8	--	--	--
0.9900	2.7	1.2	4.7	--	--	--
0.9500	5.6	2.9	8.8	--	--	--
0.9000	8.2	4.7	12.3	--	--	--
0.8000	13.1	8.3	18.7	--	--	--
0.6667	20.1	13.7	28.2	--	--	--
0.5000	31.5	22.3	44.6	34.6	23.7	50.5
0.4292	38.0	27.1	54.4	--	--	--
0.2000	75.4	52.8	119.0	87.9	58.8	131.0
0.1000	119.0	79.5	206.0	145.0	93.0	226.0
0.0400	192.0	121.0	373.0	247.0	148.0	413.0
0.0200	261.0	158.0	550.0	345.0	194.0	613.0
0.0100	344.0	199.0	782.0	468.0	249.0	878.0
0.0050	443.0	247.0	1,080.0	--	--	--
0.0020	601.0	319.0	1,590.0	828.0	382.0	1,800.0

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1964	80	--
1965	10	--
1966	27	--
1967	49	--
1968	3	--
1969	418	--
1970	27	--
1971	34	--
1972	74	--
1973	10	--
1974	6	--
1975	36	--
1976	24	--
1977	26	--
1978	103	--
1979	40	--
1980	29	--
1981	30	--
1982	39	--
1983	19	--
1984	25	--
1985	41	--
1986	39	--
1987	30	--
1988	9	--
1989	232	--