

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05318195 Elm Creek at County Road 103 near Trimont, Minn.

Peak-flow information:

Number of systematic peak flows in record	21
Systematic period begins	1991
Systematic period ends	2011
Length of systematic record	21
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	-0.15
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
2.9614	0.4646	-0.853

Low-outlier information:

Number of low outliers	0
Low-outlier threshold	100

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.9698	0.4569	-0.370

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	43.2	1.99	111	--	--	--
0.9900	60.9	4.03	142	--	--	--
0.9500	149.0	23.60	283	--	--	--
0.9000	234.0	64.60	413	--	--	--
0.8000	394.0	168.00	653	--	--	--
0.6667	627.0	333.00	1,010	--	--	--
0.5000	995.0	591.00	1,590	897	589	1,370
0.4292	1,200.0	728.00	1,920	--	--	--
0.2000	2,290.0	1,440.00	4,030	1,970	1,300	2,980
0.1000	3,420.0	2,130.00	6,920	2,830	1,820	4,410
0.0400	5,110.0	3,060.00	13,200	4,050	2,460	6,680
0.0200	6,530.0	3,740.00	20,600	5,080	2,910	8,860
0.0100	8,070.0	4,380.00	31,300	6,160	3,360	11,300
0.0050	9,730.0	4,970.00	46,600	--	--	--
0.0020	12,100.0	5,650.00	76,800	9,030	4,300	19,000

Peak-flow data used in the analysis:

Explanation of symbols and codes

< Less than

-- none

NA Missing peak value

Water year	Peak flow	Peak-flow code
1991	2,000	--
1992	880	--
1993	1,900	--
1994	1,550	--
1995	490	--
1996	940	--
1997	1,950	--
1998	100	--
1999	359	--
2000	584	--
2001	1,340	--
2002	<371	--
2003	<371	--
2004	2,050	--
2005	3,000	--
2006	2,080	--
2007	2,730	--
2008	497	--
2009	350	--
2010	NA	--
2011	1,770	--