

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05047900 Twelvemile Creek at County Road 6, near Dumont, Minn.

Peak-flow information:

Number of systematic peak flows in record	15
Systematic period begins	1996
Systematic period ends	2011
Length of systematic record	16
Years without information	1
Number of historical peak flows in record	0

Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	-0.27
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
2.8891	0.3776	0.200

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	241

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
2.8863	0.3837	-0.138	

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	70.5	5.56	156	--	--	--
0.9900	90.1	9.26	186	--	--	--
0.9500	174.0	37.60	309	--	--	--
0.9000	245.0	80.40	414	--	--	--
0.8000	368.0	169.00	599	--	--	--
0.6667	535.0	292.00	857	--	--	--
0.5000	785.0	470.00	1,280	667	439	1,010
0.4292	919.0	561.00	1,520	--	--	--
0.2000	1,630.0	1,010.00	3,140	1,360	872	2,110
0.1000	2,360.0	1,440.00	5,570	1,940	1,190	3,170
0.0400	3,460.0	2,010.00	11,400	2,820	1,600	4,990
0.0200	4,420.0	2,450.00	19,200	3,610	1,900	6,840
0.0100	5,490.0	2,880.00	32,100	4,490	2,210	9,140
0.0050	6,680.0	3,300.00	52,300	--	--	--
0.0020	8,450.0	3,850.00	91,600	6,910	2,880	16,600

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

* Less than low-outlier threshold

Water Peak Peak-flow

year flow code

1996 410 --

1997 3,720 --

1998 241 --

1999 470 --

2000 74 *

2001 2,630 --

Gap in systematic record

2003 536 --

2004 405 --

2005 811 --

2006 916 --

2007 572 --

2008 1,140 --

2009 1,930 --

2010 770 --

2011 1,800 --