

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05476989 East Fork Des Moines River above Ceylon, Minn.

Peak-flow information:

Number of systematic peak flows in record	26
Systematic period begins	1986
Systematic period ends	2011
Length of systematic record	26
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	Multiple Grubbs-Beck test

EMA systematic record analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.7904	0.3303	-0.229

Low-outlier information:

Number of low outliers	0
Low-outlier threshold	Not determined

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.7906	0.3298	-0.185

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	76.5	14.4	139	--	--	--
0.9900	95.2	23.4	162	--	--	--
0.9500	170.0	74.2	256	--	--	--
0.9000	230.0	124.0	331	--	--	--
0.8000	328.0	208.0	455	--	--	--
0.6667	454.0	314.0	619	--	--	--
0.5000	632.0	457.0	862	641	481	854
0.4292	723.0	527.0	992	--	--	--
0.2000	1,180.0	863.0	1,730	1,220	902	1,640
0.1000	1,610.0	1,160.0	2,620	1,700	1,220	2,370
0.0400	2,220.0	1,540.0	4,360	2,420	1,640	3,580
0.0200	2,720.0	1,820.0	6,220	3,030	1,950	4,720
0.0100	3,260.0	2,080.0	8,700	3,740	2,280	6,120
0.0050	3,830.0	2,330.0	12,000	--	--	--
0.0020	4,640.0	2,630.0	17,900	5,620	3,010	10,500

Peak-flow data used in the analysis:

Explanation of symbols and codes

< Less than

-- none

Water	Peak	Peak-flow
year	flow	code
1986	820	--
1987	295	--
1988	200	--
1989	<190	--
1990	470	--
1991	1,100	--
1992	840	--
1993	1,700	--
1994	565	--
1995	500	--
1996	500	--
1997	920	--
1998	210	--
1999	826	--
2000	438	--
2001	1,210	--
2002	305	--
2003	204	--
2004	755	--
2005	1,980	--
2006	1,940	--
2007	1,250	--
2008	666	--
2009	367	--
2010	1,930	--
2011	603	--