Annual Peak-Flow Frequency Analysis
For more information on the contents of this documentation, see Kessler and others (2013).

Streamgage number and name:

05040000 Pelican River near Detroit Lakes, Minn.

Peak-flow information:

Number of systematic peak flows in record	11
Systematic period begins	1943
Systematic period ends	1953
Length of systematic record	11
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.206
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
2.1402	0.1510	-0.023

Outlier criteria and number of peak flows exceeding:

Low	66.8	0
High	285.4	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
2.1402	0.1510	-0.151

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	53.7	29.7	72.1	−−	−−	−−
0.9900	59.2	34.5	77.7	−−	−−	−−
0.9500	76.8	51.3	95.6	−−	−−	−−
0.9000	88.0	62.8	107.0	−−	−−	−−
0.8000	103.0	79.0	123.0	−−	−−	−−
0.6667	120.0	96.3	142.0	−−	−−	−−
0.5000	139.0	116.0	168.0	142	116	173
0.4292	148.0	124.0	181.0	−−	−−	−−
0.2000	186.0	155.0	243.0	192	155	239
0.1000	214.0	176.0	299.0	227	177	290
0.0400	249.0	200.0	374.0	271	203	363
0.0200	274.0	216.0	431.0	305	220	423
0.0100	298.0	231.0	490.0	340	236	489
0.0050	322.0	245.0	551.0	−−	−−	−−
0.0020	352.0	263.0	634.0	426	272	668

Peak-flow data used in the analysis:

Explanation of symbols and codes

−− none

Water year	Peak flow	Peak-flow code
1943	136	−−
1944	136	−−
1945	115	−−
1946	145	−−
1947	133	−−
1948	94	−−
1949	75	−−
1950	210	−−
1951	117	−−
1952	214	−−
1953	229	−−