

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

04019300 West Swan River near Silica, Minn.

Peak-flow information:

Number of systematic peak flows in record	16
Systematic period begins	1964
Systematic period ends	1979
Length of systematic record	16
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.085
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:

	Standard	
Mean	deviation	Skewness
2.3887	0.2510	-0.544

Outlier criteria and number of peak flows exceeding:

Low	65.6	0
High	913.6	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.3887	0.2510	-0.240

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	48.5	22.9	74.5	--	--	--
0.9900	57.7	29.2	85.6	--	--	--
0.9500	91.1	54.8	124.0	--	--	--
0.9000	115.0	75.1	152.0	--	--	--
0.8000	152.0	108.0	194.0	--	--	--
0.6667	194.0	147.0	247.0	--	--	--
0.5000	250.0	196.0	322.0	236	181	307
0.4292	277.0	218.0	362.0	--	--	--
0.2000	400.0	312.0	566.0	384	289	508
0.1000	505.0	384.0	766.0	487	356	667
0.0400	641.0	471.0	1,060.0	622	431	899
0.0200	744.0	533.0	1,290.0	725	481	1,100
0.0100	847.0	593.0	1,550.0	835	528	1,320
0.0050	952.0	652.0	1,820.0	--	--	--
0.0020	1,090.0	729.0	2,200.0	1,100	628	1,940

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1964	166	--
1965	340	--
1966	177	--
1967	308	--
1968	97	--
1969	399	--
1970	314	--
1971	428	--
1972	352	--
1973	79	--
1974	573	--
1975	277	--
1976	162	--
1977	130	--
1978	241	--
1979	462	--