Annual Peak-Flow Frequency Analysis

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

Streamgage number and name:

05475900 Des Moines River tributary number 2 near Lakefield, Minn.

Peak-flow information:

Number of systematic peak flows in record	26
Systematic period begins	1960
Systematic period ends	1985
Length of systematic record	26
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.16
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
1.8544	0.2638	-0.460

Outlier criteria and number of peak flows exceeding:

Low	15.6	0
High	326.9	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
1.8544	0.2638	-0.292

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	12.7	7.2	18.4	−−	−−	−−
0.9900	15.3	9.1	21.5	−−	−−	−−
0.9500	25.1	17.0	32.8	−−	−−	−−
0.9000	32.3	23.3	40.9	−−	−−	−−
0.8000	43.3	33.3	53.3	−−	−−	−−
0.6667	56.4	45.1	68.7	−−	−−	−−
0.5000	73.7	60.3	90.3	75.6	59.9	95.5
0.4292	82.0	67.3	101.0	−−	−−	−−
0.2000	120.0	97.4	157.0	127.0	100.0	162.0
0.1000	152.0	121.0	210.0	167.0	128.0	218.0
0.0400	194.0	150.0	283.0	225.0	165.0	308.0
0.0200	226.0	170.0	342.0	272.0	191.0	388.0
0.0100	258.0	191.0	403.0	327.0	219.0	487.0
0.0050	290.0	210.0	467.0	−−	−−	−−
0.0020	332.0	236.0	556.0	467.0	280.0	779.0

Peak-flow data used in the analysis:

Explanation of symbols and codes

−−   none

Water year	Peak flow	Peak-flow code
1960	104	−−
1961	96	−−
1962	61	−−
1963	119	−−
1964	49	−−
1965	112	−−
1966	90	−−
1967	92	−−
1968	16	−−
1969	271	−−
1970	48	−−
1971	155	−−
1972	42	−−
1973	22	−−
1974	30	−−
1975	54	−−
1976	68	−−
1977	48	−−
1978	75	−−
1979	149	−−
1980	75	−−
1981	63	−−
1982	100	−−
1983	98	−−
1984	87	−−
1985	70	−−