Annual Peak-Flow Frequency Analysis

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

Streamgage number and name:
    05070000 Red River of the North near Thompson, N. Dak.

Peak-flow information:

Number of systematic peak flows in record	13
Systematic period begins	1999
Systematic period ends	2011
Length of systematic record	13
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	STATION SKEW
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
4.5040	0.2311	-0.176

Outlier criteria and number of peak flows exceeding:

Low	10032.7	0
High	101543.1	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
4.5040	0.2311	-0.176

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	7,430	3,360	11,300
0.9900	8,650	4,190	12,800
0.9500	13,000	7,540	17,700
0.9000	16,000	10,100	21,200
0.8000	20,500	14,200	26,400
0.6667	25,700	19,100	32,800
0.5000	32,400	25,100	42,000
0.4292	35,600	27,800	46,900
0.2000	50,200	39,000	72,400
0.1000	62,400	47,400	97,700
0.0400	78,400	57,400	135,000
0.0200	90,500	64,500	166,000
0.0100	103,000	71,400	199,000
0.0050	115,000	78,200	235,000
0.0020	132,000	87,000	286,000

Peak-flow data used in the analysis:

Explanation of symbols and codes
  K   Peak affected by regulation

Water year	Peak flow	Peak-flow code
1999	31,000	K
2000	30,000	K
2001	41,000	K
2002	22,000	K
2003	12,500	K
2004	25,400	K
2005	26,300	K
2006	53,500	K
2007	27,900	K
2008	14,700	K
2009	61,300	K
2010	52,600	K
2011	72,000	K