U. S. GEOLOGICAL SURVEY
ANNUAL PEAK FLOW FREQUENCY ANALYSIS
Following Bulletin 17-B Guidelines
Program peakfq
(Version 4.0, December, 2000)

Station - 04080000 LITTLE WOLF RIVER AT ROYALTON, WI
2002 MAR 13 09:02:35

I N P U T D A T A S U M M A R Y

Number of peaks in record	=	60
Peaks not used in analysis	=	0
Systematic peaks in analysis	=	60
Historic peaks in analysis	=	0
Years of historic record	=	0
Generalized skew	=	-0.305
Standard error of generalized skew	=	0.550
Skew option	=	WEIGHTED
Gage base discharge	=	0.0
User supplied high outlier threshold	=	--
User supplied low outlier criterion	=	--
Plotting position parameter	=	0.00

********* NOTICE -- Preliminary machine computations. *********
********* User responsible for assessment and interpretation. *********

WCF134I-NO SYSTEMATIC PEAKS WERE BELOW GAGE BASE. 0.0
WCF195I-NO LOW OUTLIERS WERE DETECTED BELOW CRITERION. 655.8
WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE. 14178.3

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ANNUAL FREQUENCY CURVE PARAMETERS -- LOG-PEARSON TYPE III

	FLOOD BASE		LOGARITHMIC		
	DISCHARGE	EXCEEDANCE PROBABILITY	MEAN	STANDARD DEVIATION	SKEW
SYSTEMATIC RECORD	0.0	1.0000	3.4842	0.2353	-0.615
BULL.17B ESTIMATE	0.0	1.0000	3.4842	0.2353	-0.522

ANNUAL FREQUENCY CURVE -- DISCHARGES AT SELECTED EXCEEDANCE PROBABILITIES

ANNUAL EXCEEDANCE PROBABILITY	BULL.17B ESTIMATE	SYSTEMATIC RECORD	'EXPECTED PROBABILITY' ESTIMATE	95-PCT CONFIDENCE LIMITS FOR BULL. 17B ESTIMATES LOWER	UPPER
0.9950	580.8	554.8	531.7	421.3	740.8
0.9900	705.9	681.8	660.2	528.6	880.2
0.9500	1163.0	1150.0	1130.0	940.8	1374.0
0.9000	1488.0	1484.0	1462.0	1246.0	1719.0
0.8000	1970.0	1979.0	1954.0	1704.0	2231.0
0.5000	3196.0	3222.0	3196.0	2847.0	3595.0
0.2000	4850.0	4851.0	4878.0	4276.0	5622.0
0.1000	5882.0	5835.0	5943.0	5117.0	6972.0
0.0400	7095.0	6956.0	7218.0	6074.0	8623.0
0.0200	7932.0	7708.0	8111.0	6719.0	9794.0
0.0100	8714.0	8395.0	8960.0	7312.0	10910.0
0.0050	9450.0	9025.0	9769.0	7863.0	11980.0
0.0020	10360.0	9785.0	10790.0	8536.0	13320.0
0.6667	2514.9	(1.50-year flood)			
0.4292	3520.1	(2.33-year flood)			

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I N P U T D A T A L I S T I N G

WATER YEAR	DISCHARGE	CODES	WATER YEAR	DISCHARGE	CODES
1914	5470.0		1944	2860.0	
1915	1300.0		1945	5080.0	
1916	6000.0		1946	5900.0	
1917	4800.0		1947	2860.0	
1918	2980.0		1948	5000.0	
1919	3100.0		1949	1480.0	
1920	3950.0		1950	6800.0	
1921	2180.0		1951	2860.0	
1922	5900.0		1952	5690.0	
1923	3820.0		1953	4840.0	
1924	4600.0		1954	1010.0	
1925	2180.0		1955	2890.0	
1926	1670.0		1956	6000.0	
1927	1970.0		1957	1080.0	
1928	4000.0		1958	1150.0	
1929	5900.0		1959	4000.0	
1930	1600.0		1960	4260.0	
1931	670.0		1961	2890.0	
1932	1250.0		1962	2380.0	
1933	2660.0		1963	3700.0	
1934	3500.0		1964	1320.0	
1935	3500.0		1965	4680.0	
1936	3420.0		1966	2400.0	
1937	2500.0		1967	4000.0	
1938	4380.0		1968	1860.0	
1939	6500.0		1969	3060.0	
1940	2500.0		1970	5660.0	
1941	2390.0		1983	2660.0	
1942	2810.0		1984	2280.0	
1943	6950.0		1985	2990.0	

Explanation of peak discharge qualification codes

PEAKFQ CODE	WATSTORE CODE	DEFINITION
D	3	Dam failure, non-recurrent flow anomaly
G	8	Discharge greater than stated value
X	3+8	Both of the above
L	4	Discharge less than stated value
K	6 OR C	Known effect of regulation or urbanization
H	7	Historic peak

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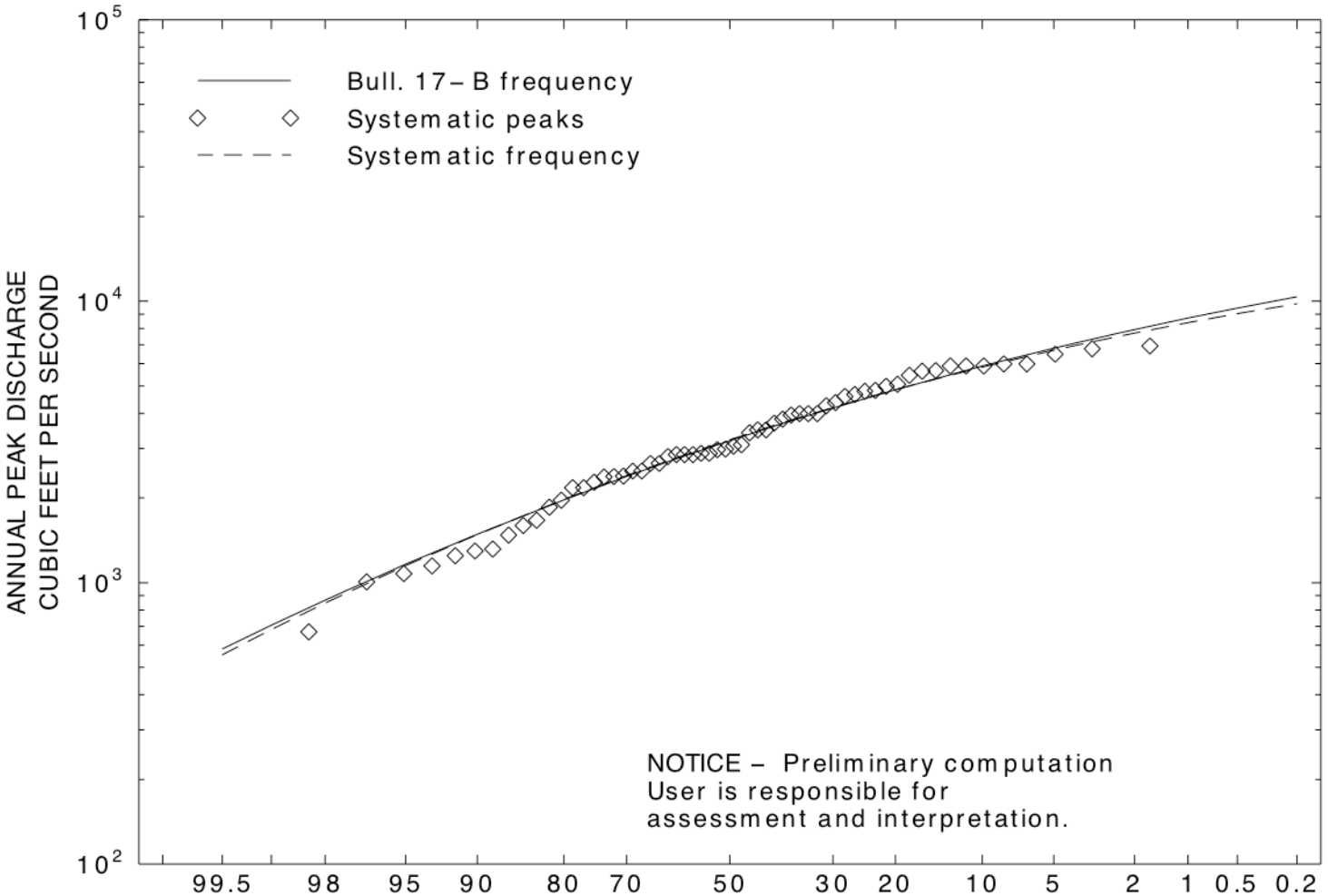
EMPIRICAL FREQUENCY CURVES -- WEIBULL PLOTTING POSITIONS

WATER YEAR	RANKED DISCHARGE	SYSTEMATIC RECORD	BULL.17B ESTIMATE
1943	6950.0	0.0164	0.0164
1950	6800.0	0.0328	0.0328
1939	6500.0	0.0492	0.0492
1916	6000.0	0.0656	0.0656
1956	6000.0	0.0820	0.0820
1922	5900.0	0.0984	0.0984
1929	5900.0	0.1148	0.1148
1946	5900.0	0.1311	0.1311
1952	5690.0	0.1475	0.1475
1970	5660.0	0.1639	0.1639
1914	5470.0	0.1803	0.1803
1945	5080.0	0.1967	0.1967
1948	5000.0	0.2131	0.2131
1953	4840.0	0.2295	0.2295
1917	4800.0	0.2459	0.2459
1965	4680.0	0.2623	0.2623
1924	4600.0	0.2787	0.2787
1938	4380.0	0.2951	0.2951
1960	4260.0	0.3115	0.3115
1928	4000.0	0.3279	0.3279
1959	4000.0	0.3443	0.3443
1967	4000.0	0.3607	0.3607
1920	3950.0	0.3770	0.3770
1923	3820.0	0.3934	0.3934
1963	3700.0	0.4098	0.4098
1934	3500.0	0.4262	0.4262
1935	3500.0	0.4426	0.4426
1936	3420.0	0.4590	0.4590
1919	3100.0	0.4754	0.4754
1969	3060.0	0.4918	0.4918
1985	2990.0	0.5082	0.5082
1918	2980.0	0.5246	0.5246
1955	2890.0	0.5410	0.5410
1961	2890.0	0.5574	0.5574
1944	2860.0	0.5738	0.5738
1947	2860.0	0.5902	0.5902
1951	2860.0	0.6066	0.6066
1942	2810.0	0.6230	0.6230
1933	2660.0	0.6393	0.6393
1983	2660.0	0.6557	0.6557
1937	2500.0	0.6721	0.6721
1940	2500.0	0.6885	0.6885
1966	2400.0	0.7049	0.7049
1941	2390.0	0.7213	0.7213
1962	2380.0	0.7377	0.7377
1984	2280.0	0.7541	0.7541
1921	2180.0	0.7705	0.7705
1925	2180.0	0.7869	0.7869

1927	1970.0	0.8033	0.8033
1968	1860.0	0.8197	0.8197
1926	1670.0	0.8361	0.8361
1930	1600.0	0.8525	0.8525
1949	1480.0	0.8689	0.8689
1964	1320.0	0.8852	0.8852
1915	1300.0	0.9016	0.9016
1932	1250.0	0.9180	0.9180
1958	1150.0	0.9344	0.9344
1957	1080.0	0.9508	0.9508
1954	1010.0	0.9672	0.9672
1931	670.0	0.9836	0.9836


Bull. 17–B frequency
Systematic peaks
Systematic frequency
NOTICE – Preliminary computation
User is responsible for
assessment and interpretation.
ANNUAL PEAK DISCHARGE
CUBIC FEET PER SECOND
10^5
10^4
10^3
10^2
99.5 98 95 90 80 70 50 30 20 10 5 2 1 0.5 0.2
ANNUAL EXCEEDANCE PROBABILITY, PERCENT
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