

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

Station - 05369500 CHIPPEWA RIVER AT DURAND, WI  
 2002 JUL 10 11:21:00

I N P U T   D A T A   S U M M A R Y

Number of peaks in record	=	72
Peaks not used in analysis	=	0
Systematic peaks in analysis	=	72
Historic peaks in analysis	=	0
Years of historic record	=	0
Generalized skew	=	0.000
Standard error of generalized skew	=	0.550
Skew option	=	STATION SKEW
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.		12248.1
WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE.		153136.0
*WCF151I-17B WEIGHTED SKEW REPLACED BY USER OPTION.	0.001	0.002 -1

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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	4.6366	0.1889	0.002
BULL.17B ESTIMATE	0.0	1.0000	4.6366	0.1889	0.002

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	14130.0	14130.0	13590.0	11560.0	16540.0
0.9900	15750.0	15750.0	15270.0	13080.0	18230.0
0.9500	21180.0	21180.0	20870.0	18300.0	23830.0
0.9000	24800.0	24800.0	24570.0	21850.0	27550.0
0.8000	30030.0	30030.0	29890.0	26990.0	32940.0
0.5000	43300.0	43300.0	43300.0	39770.0	47150.0
0.2000	62460.0	62460.0	62750.0	56940.0	69490.0
0.1000	75640.0	75640.0	76350.0	68100.0	85850.0
0.0400	92780.0	92780.0	94350.0	82110.0	108000.0
0.0200	105900.0	105900.0	108400.0	92540.0	125400.0
0.0100	119200.0	119200.0	123000.0	103000.0	143600.0
0.0050	132900.0	132900.0	138200.0	113500.0	162500.0
0.0020	151600.0	151600.0	159600.0	127700.0	189000.0
0.6667	35911.1	(	1.50-year flood )		
0.4292	46791.7	(	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
1929	49000.0	K	1965	66200.0	K
1930	37700.0	K	1966	37500.0	K
1931	21000.0	K	1967	123000.0	K
1932	44300.0	K	1968	48400.0	K
1933	26200.0	K	1969	53600.0	K
1934	56000.0	K	1970	32000.0	K
1935	59500.0	K	1971	57000.0	K
1936	54400.0	K	1972	43100.0	K
1937	24200.0	K	1973	73300.0	K
1938	91000.0	K	1974	41100.0	K
1939	67400.0	K	1975	53200.0	K
1940	38900.0	K	1976	62300.0	K
1941	93600.0	K	1977	28600.0	K
1942	75600.0	K	1978	30900.0	K
1943	80700.0	K	1979	34200.0	K
1944	31600.0	K	1980	41300.0	K
1945	45000.0	K	1981	43500.0	K
1946	56400.0	K	1982	70300.0	K
1947	33600.0	K	1983	73700.0	K
1948	24600.0	K	1984	32100.0	K
1949	25900.0	K	1985	33100.0	K
1950	46200.0	K	1986	68500.0	K
1951	71800.0	K	1987	38100.0	K
1952	50500.0	K	1988	16900.0	K
1953	37500.0	K	1989	38500.0	K
1954	101000.0	K	1990	45200.0	K
1955	31500.0	K	1991	41500.0	K
1956	42700.0	K	1992	45000.0	K
1957	17600.0	K	1993	90100.0	K
1958	27600.0	K	1994	53000.0	K
1959	35000.0	K	1995	28700.0	K
1960	38000.0	K	1996	63600.0	K
1961	34500.0	K	1997	56000.0	K
1962	27400.0	K	1998	56900.0	K
1963	29400.0	K	1999	24300.0	K
1964	15600.0	K	2000	34300.0	K

Explanation of peak discharge qualification codes

PEAKFQ	WATSTORE	DEFINITION
CODE	CODE	
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

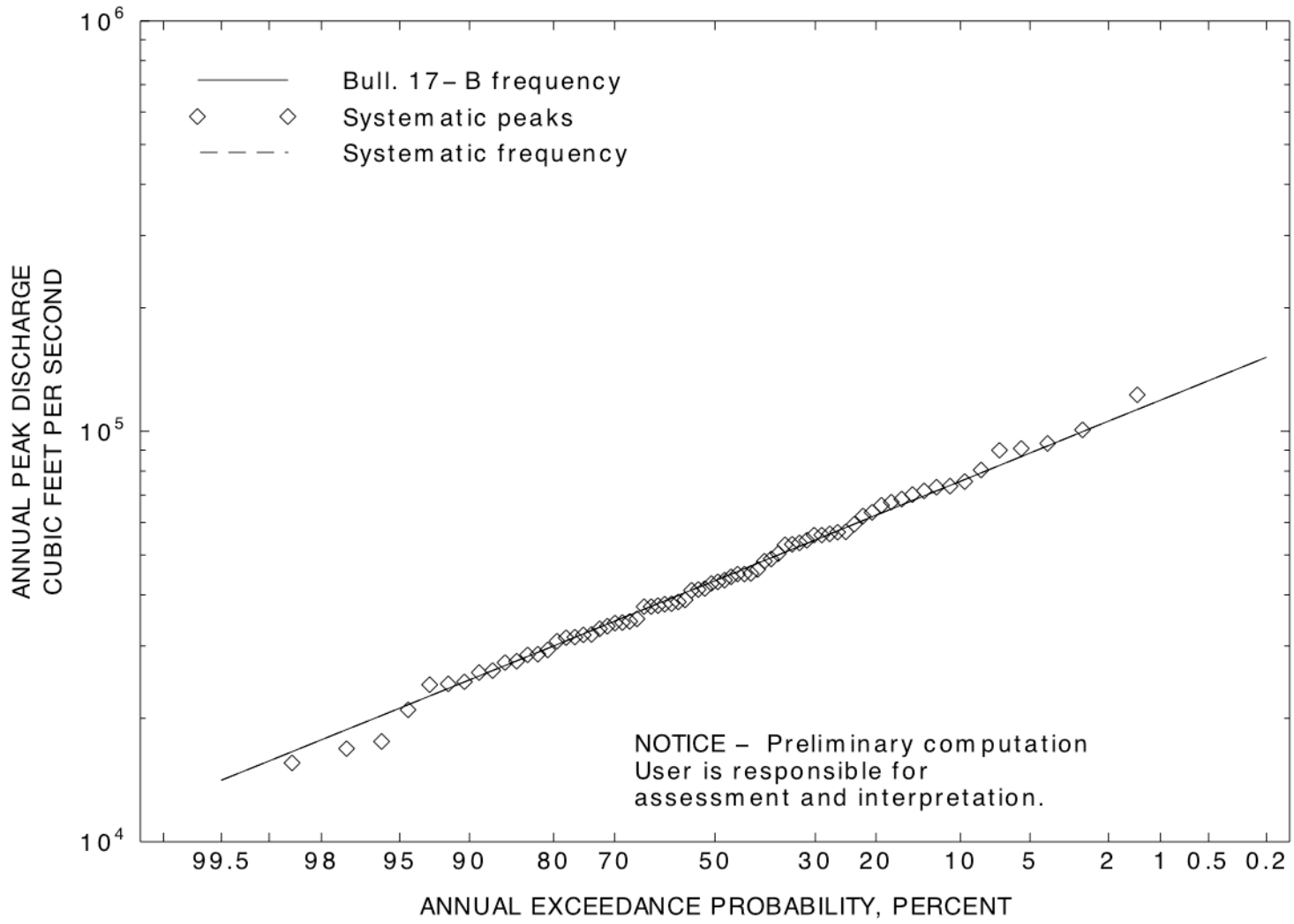


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EMPIRICAL FREQUENCY CURVES -- WEIBULL PLOTTING POSITIONS

WATER YEAR	RANKED DISCHARGE	SYSTEMATIC RECORD	BULL.17B ESTIMATE
1967	123000.0	0.0137	0.0137
1954	101000.0	0.0274	0.0274
1941	93600.0	0.0411	0.0411
1938	91000.0	0.0548	0.0548
1993	90100.0	0.0685	0.0685
1943	80700.0	0.0822	0.0822
1942	75600.0	0.0959	0.0959
1983	73700.0	0.1096	0.1096
1973	73300.0	0.1233	0.1233
1951	71800.0	0.1370	0.1370
1982	70300.0	0.1507	0.1507
1986	68500.0	0.1644	0.1644
1939	67400.0	0.1781	0.1781
1965	66200.0	0.1918	0.1918
1996	63600.0	0.2055	0.2055
1976	62300.0	0.2192	0.2192
1935	59500.0	0.2329	0.2329
1971	57000.0	0.2466	0.2466
1998	56900.0	0.2603	0.2603
1946	56400.0	0.2740	0.2740
1934	56000.0	0.2877	0.2877
1997	56000.0	0.3014	0.3014
1936	54400.0	0.3151	0.3151
1969	53600.0	0.3288	0.3288
1975	53200.0	0.3425	0.3425
1994	53000.0	0.3562	0.3562
1952	50500.0	0.3699	0.3699
1929	49000.0	0.3836	0.3836
1968	48400.0	0.3973	0.3973
1950	46200.0	0.4110	0.4110
1990	45200.0	0.4247	0.4247
1945	45000.0	0.4384	0.4384
1992	45000.0	0.4521	0.4521
1932	44300.0	0.4658	0.4658
1981	43500.0	0.4795	0.4795
1972	43100.0	0.4932	0.4932
1956	42700.0	0.5068	0.5068
1991	41500.0	0.5205	0.5205
1980	41300.0	0.5342	0.5342
1974	41100.0	0.5479	0.5479
1940	38900.0	0.5616	0.5616
1989	38500.0	0.5753	0.5753
1987	38100.0	0.5890	0.5890
1960	38000.0	0.6027	0.6027
1930	37700.0	0.6164	0.6164
1953	37500.0	0.6301	0.6301
1966	37500.0	0.6438	0.6438
1959	35000.0	0.6575	0.6575

1961	34500.0	0.6712	0.6712
2000	34300.0	0.6849	0.6849
1979	34200.0	0.6986	0.6986
1947	33600.0	0.7123	0.7123
1985	33100.0	0.7260	0.7260
1984	32100.0	0.7397	0.7397
1970	32000.0	0.7534	0.7534
1944	31600.0	0.7671	0.7671
1955	31500.0	0.7808	0.7808
1978	30900.0	0.7945	0.7945
1963	29400.0	0.8082	0.8082
1995	28700.0	0.8219	0.8219
1977	28600.0	0.8356	0.8356
1958	27600.0	0.8493	0.8493
1962	27400.0	0.8630	0.8630
1933	26200.0	0.8767	0.8767
1949	25900.0	0.8904	0.8904
1948	24600.0	0.9041	0.9041
1999	24300.0	0.9178	0.9178
1937	24200.0	0.9315	0.9315
1931	21000.0	0.9452	0.9452
1957	17600.0	0.9589	0.9589
1988	16900.0	0.9726	0.9726
1964	15600.0	0.9863	0.9863



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