

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

Station - 05389500 Mississippi River at McGregor, IA
 2002 DEC 5 16:25:51

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

Number of peaks in record	=	65
Peaks not used in analysis	=	1
Systematic peaks in analysis	=	64
Historic peaks in analysis	=	0
Years of historic record	=	0
Generalized skew	=	-0.400
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. *****

**WCF109W-PEAKS WITH MINUS-FLAGGED DISCHARGES WERE BYPASSED.		1
**WCF113W-NUMBER OF SYSTEMATIC PEAKS HAS BEEN REDUCED TO NSYS =	=	64
WCF134I-NO SYSTEMATIC PEAKS WERE BELOW GAGE BASE.		0.0
WCF195I-NO LOW OUTLIERS WERE DETECTED BELOW CRITERION.		38011.6
WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE.		310393.7
WCF002J-CALCS COMPLETED. RETURN CODE = 2		

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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	5.0359	0.1594	-0.058
BULL.17B ESTIMATE	0.0	1.0000	5.0359	0.1594	-0.133

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	40310.0	41360.0	38650.0	33380.0	46610.0
0.9900	44620.0	45530.0	43190.0	37530.0	51020.0
0.9500	58590.0	59030.0	57710.0	51270.0	65160.0
0.9000	67520.0	67710.0	66890.0	60200.0	74170.0
0.8000	79960.0	79830.0	79590.0	72650.0	86820.0
0.5000	109500.0	109000.0	109500.0	101500.0	118200.0
0.2000	148300.0	148100.0	148900.0	136500.0	163200.0
0.1000	172900.0	173500.0	174400.0	157500.0	193700.0
0.0400	203100.0	205100.0	206100.0	182400.0	232300.0
0.0200	224900.0	228300.0	229400.0	200000.0	261000.0
0.0100	246200.0	251200.0	252700.0	216900.0	289500.0
0.0050	267100.0	274100.0	276100.0	233400.0	318100.0
0.0020	294600.0	304600.0	307500.0	254600.0	356100.0
0.6667	93363.4	(1.50-year flood)			
0.4292	116924.0	(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
1880	-196000.0	H	1969	215000.0	
1937	54700.0		1970	72100.0	
1938	101400.0		1971	138000.0	
1939	96900.0		1972	116000.0	
1940	52100.0		1973	151000.0	
1941	102800.0		1974	104000.0	
1942	113800.0		1975	183000.0	
1943	124600.0		1976	125000.0	
1944	122500.0		1977	42000.0	
1945	127700.0		1978	104000.0	
1946	101200.0		1979	133000.0	
1947	85500.0		1980	87400.0	
1948	84000.0		1981	80700.0	
1949	73100.0		1982	139000.0	
1950	123300.0		1983	145000.0	
1951	185700.0		1984	117000.0	
1952	197500.0		1985	110000.0	
1953	86200.0		1986	168000.0	
1954	165500.0		1987	158000.0	
1955	73700.0		1988	57200.0	
1956	105000.0		1989	103000.0	
1957	95800.0		1990	98800.0	
1958	55800.0		1991	104000.0	
1959	72300.0		1992	106000.0	
1960	83100.0		1993	189000.0	
1961	114000.0		1994	115000.0	
1962	104000.0		1995	99600.0	
1963	72000.0		1996	143000.0	
1964	75600.0		1997	201000.0	
1965	276000.0		1998	126000.0	
1966	112000.0		1999	111000.0	
1967	170000.0		2000	78400.0	
1968	97900.0				

Explanation of peak discharge qualification codes

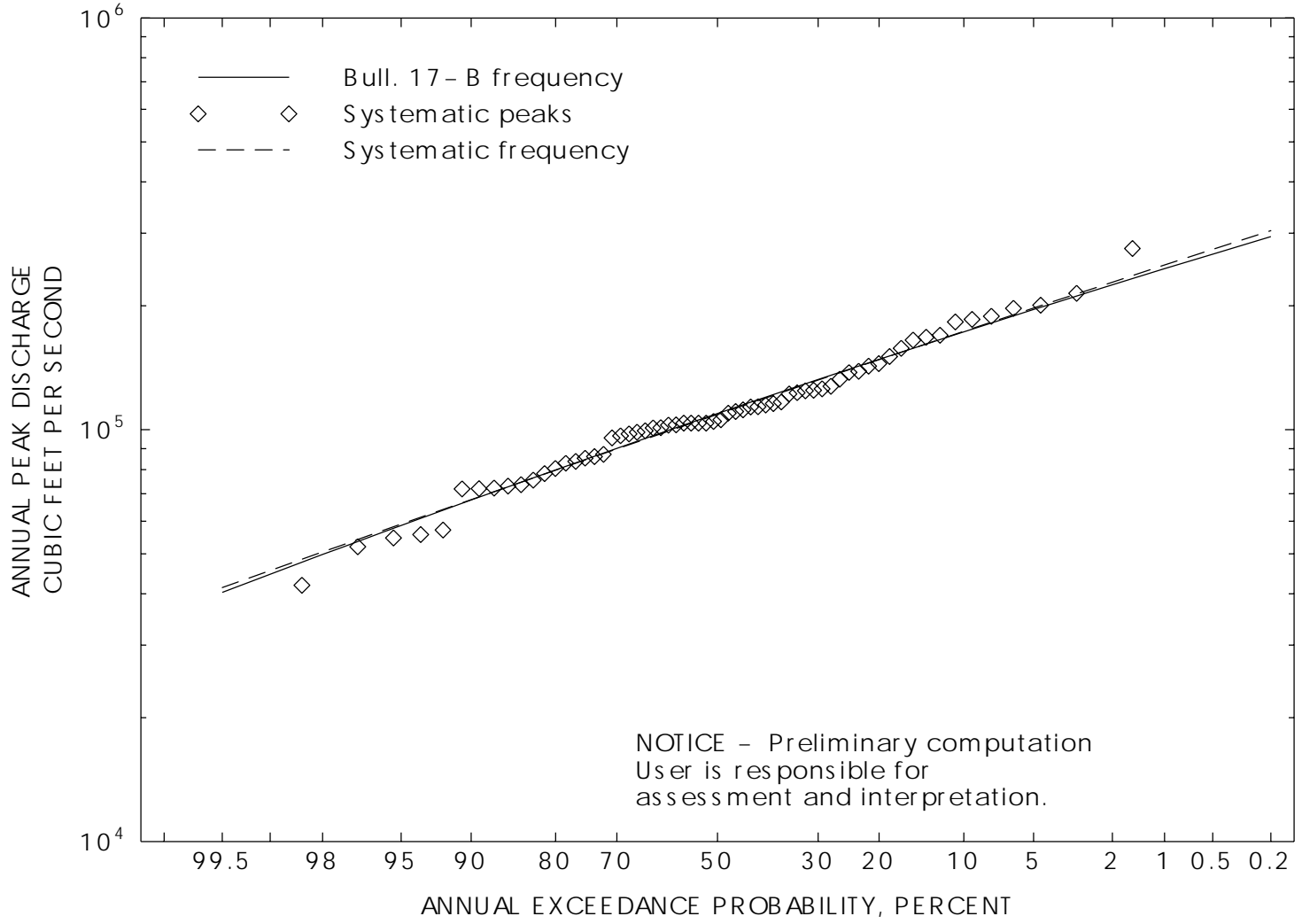
PEAKFQ	WATSTORE	DEFINITION
CODE	CODE	
D	3	Dam failure, non-recurrent flow anomaly
G	8	Discharge greater than stated value
X	3+8	Both of the above
L	4	Discharge less than stated value
K	6 OR C	Known effect of regulation or urbanization
H	7	Historic peak

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EMPIRICAL FREQUENCY CURVES -- WEIBULL PLOTTING POSITIONS

WATER YEAR	RANKED DISCHARGE	SYSTEMATIC RECORD	BULL.17B ESTIMATE
1965	276000.0	0.0154	0.0154
1969	215000.0	0.0308	0.0308
1997	201000.0	0.0462	0.0462
1952	197500.0	0.0615	0.0615
1993	189000.0	0.0769	0.0769
1951	185700.0	0.0923	0.0923
1975	183000.0	0.1077	0.1077
1967	170000.0	0.1231	0.1231
1986	168000.0	0.1385	0.1385
1954	165500.0	0.1538	0.1538
1987	158000.0	0.1692	0.1692
1973	151000.0	0.1846	0.1846
1983	145000.0	0.2000	0.2000
1996	143000.0	0.2154	0.2154
1982	139000.0	0.2308	0.2308
1971	138000.0	0.2462	0.2462
1979	133000.0	0.2615	0.2615
1945	127700.0	0.2769	0.2769
1998	126000.0	0.2923	0.2923
1976	125000.0	0.3077	0.3077
1943	124600.0	0.3231	0.3231
1950	123300.0	0.3385	0.3385
1944	122500.0	0.3538	0.3538
1984	117000.0	0.3692	0.3692
1972	116000.0	0.3846	0.3846
1994	115000.0	0.4000	0.4000
1961	114000.0	0.4154	0.4154
1942	113800.0	0.4308	0.4308
1966	112000.0	0.4462	0.4462
1999	111000.0	0.4615	0.4615
1985	110000.0	0.4769	0.4769
1992	106000.0	0.4923	0.4923
1956	105000.0	0.5077	0.5077
1962	104000.0	0.5231	0.5231
1974	104000.0	0.5385	0.5385
1978	104000.0	0.5538	0.5538
1991	104000.0	0.5692	0.5692
1989	103000.0	0.5846	0.5846
1941	102800.0	0.6000	0.6000
1938	101400.0	0.6154	0.6154
1946	101200.0	0.6308	0.6308
1995	99600.0	0.6462	0.6462
1990	98800.0	0.6615	0.6615
1968	97900.0	0.6769	0.6769
1939	96900.0	0.6923	0.6923
1957	95800.0	0.7077	0.7077
1980	87400.0	0.7231	0.7231
1953	86200.0	0.7385	0.7385

1947	85500.0	0.7538	0.7538
1948	84000.0	0.7692	0.7692
1960	83100.0	0.7846	0.7846
1981	80700.0	0.8000	0.8000
2000	78400.0	0.8154	0.8154
1964	75600.0	0.8308	0.8308
1955	73700.0	0.8462	0.8462
1949	73100.0	0.8615	0.8615
1959	72300.0	0.8769	0.8769
1970	72100.0	0.8923	0.8923
1963	72000.0	0.9077	0.9077
1988	57200.0	0.9231	0.9231
1958	55800.0	0.9385	0.9385
1937	54700.0	0.9538	0.9538
1940	52100.0	0.9692	0.9692
1977	42000.0	0.9846	0.9846
1880	-196000.0	--	--



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