

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

Station - 04028000 MONTREAL RIVER AT IRONWOOD, MI
 2002 MAR 13 09:02:14

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

Number of peaks in record	=	13
Peaks not used in analysis	=	0
Systematic peaks in analysis	=	13
Historic peaks in analysis	=	0
Years of historic record	=	0
Generalized skew	=	-0.128
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
WCF198I-LOW OUTLIERS BELOW FLOOD BASE WERE DROPPED.	1	269.3
WCF162I-SYSTEMATIC PEAKS EXCEEDED HIGH-OUTLIER CRITERION.	1	3168.7

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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	3.0128	0.2678	-0.428
BULL.17B ESTIMATE	269.3	0.9231	3.0417	0.2128	0.239

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	--	164.4	--	--	--
0.9900	--	202.8	--	--	--
0.9500	--	348.5	--	--	--
0.9000	595.7	456.7	564.1	395.3	768.1
0.8000	725.4	623.4	705.1	517.4	914.9
0.5000	1080.0	1076.0	1080.0	849.2	1365.0
0.2000	1651.0	1746.0	1708.0	1311.0	2307.0
0.1000	2086.0	2195.0	2235.0	1612.0	3174.0
0.0400	2698.0	2754.0	3080.0	1999.0	4576.0
0.0200	3202.0	3159.0	3892.0	2295.0	5861.0
0.0100	3747.0	3553.0	4913.0	2601.0	7372.0
0.0050	4339.0	3937.0	6222.0	2919.0	9142.0
0.0020	5201.0	4431.0	8594.0	3361.0	11940.0
0.6667	878.2	(1.50-year flood)			
0.4292	1176.9	(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
1918	610.0		1951	1110.0	
1919	610.0		1952	1810.0	
1920	960.0		1953	1110.0	
1921	960.0		1954	1080.0	
1922	910.0		1960	3400.0	
1925	255.0		1962	1510.0	
1950	1490.0				

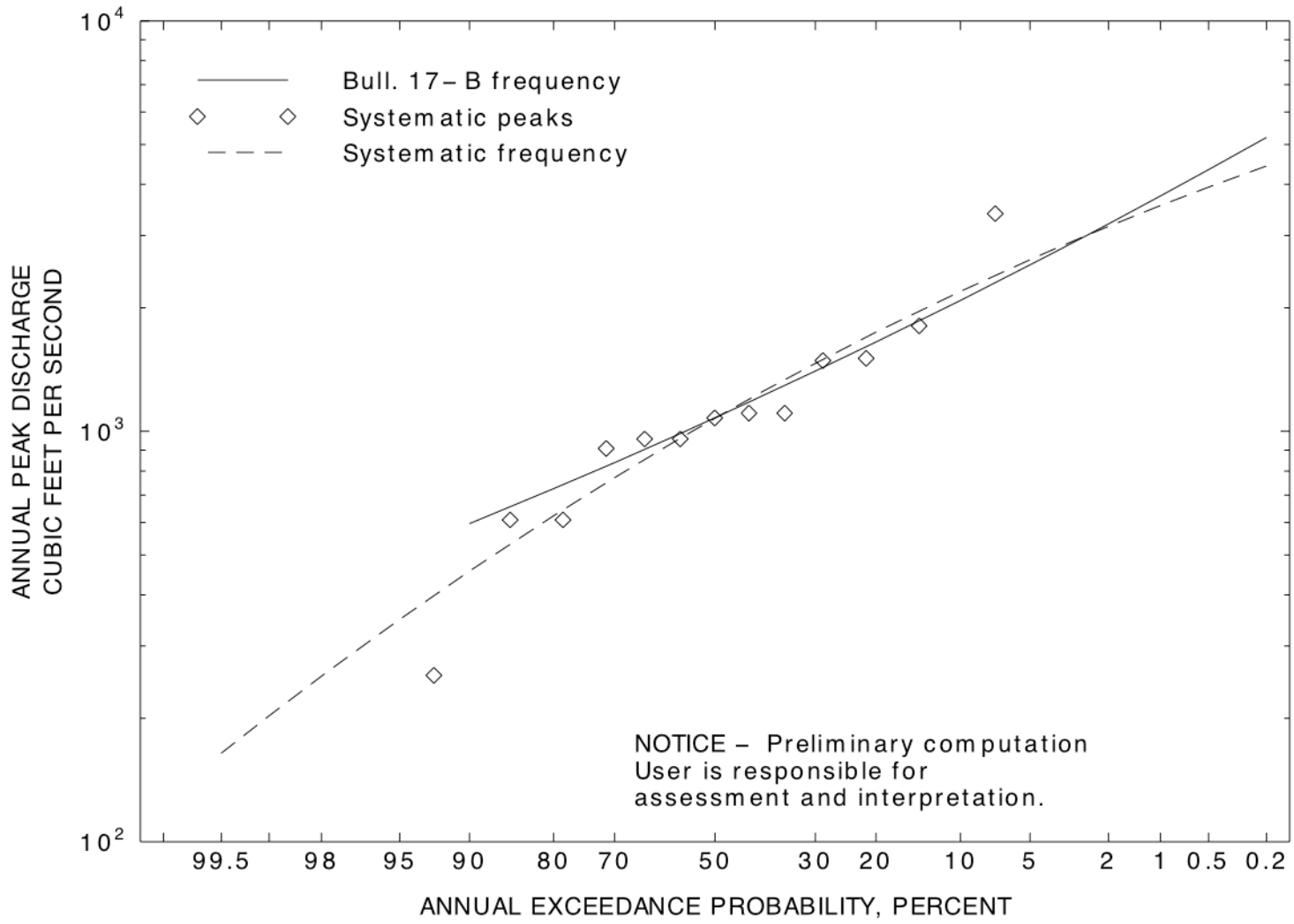
Explanation of peak discharge qualification codes

PEAKFQ	WATSTORE	
CODE	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
1960	3400.0	0.0714	0.0714
1952	1810.0	0.1429	0.1429
1962	1510.0	0.2143	0.2143
1950	1490.0	0.2857	0.2857
1951	1110.0	0.3571	0.3571
1953	1110.0	0.4286	0.4286
1954	1080.0	0.5000	0.5000
1920	960.0	0.5714	0.5714
1921	960.0	0.6429	0.6429
1922	910.0	0.7143	0.7143
1918	610.0	0.7857	0.7857
1919	610.0	0.8571	0.8571
1925	255.0	0.9286	0.9286



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