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Program PeakFq U. S. GEOLOGICAL SURVEY Seq.002.000 Prov. Ver. 7.0 Annual peak flow frequency analysis Run Date / Time 05/08/2013 following Bulletin 17-B Guidelines 06/12/2014 13:59 Preliminary release of PeakFQ for review and testing only.

--- PROCESSING OPTIONS ---

Plot option = Graphics device
Basin char output = WATSTORE
Print option = Yes
Debug print = No
Input peaks listing = Long
Input peaks format = WATSTORE peak file

Input files used:

 $peaks \ (ascii) - V:\CDOT_Flood_Frequency\PeakFQ\Input_files\06675300\06675300.TXT specifications - V:\CDOT_Flood_Frequency\PeakFQ\Input_files\06675300\PKFQWPSF.TMP \\ Output \ file(s):$

 $\label{linear_prop_reduced} main - V:\CDOT_Flood_Frequency\PeakFQ\Input_files\06675300\06675300.PRT bcd - V:\CDOT_Flood_Frequency\PeakFQ\Input_files\06675300\06675300.BCD$

Program PeakFq U. S. GEOLOGICAL SURVEY Seq.003.001 Prov. Ver. 7.0 Annual peak flow frequency analysis Run Date / Time 05/08/2013 using Expected Moments Algorithm (EMA) 06/12/2014 13:59

Preliminary release of PeakFQ for review and testing only.

Station - 06675300 HORSE CREEK TRIBUTARY NEAR LITTLE BEAR, WY

INPUT DATA SUMMARY

Number of peaks in record 21 Peaks not used in analysis 0 Systematic peaks in analysis 21 Historic peaks in analysis Beginning Year = 1961 **Ending Year** = 1981 Historical Period Length = 21 Generalized skew = -0.022Standard error = 0.550Mean Square error = 0.303Skew option = WEIGHTED Gage base discharge 0.0User supplied high outlier threshold = --User supplied low outlier criterion = --= 0.00Plotting position parameter Type of analysis **EMA** Low-outlier Test Method **MGBT**

Perception Thresholds:								
Begin End Low		w High	Comment					
1961	1981	0.0	INF	DEFAULT				
1962	1962	40.0	INF	PEAK < STATED VALUE				
1964	1964	40.0	INF	PEAK < STATED VALUE				
1965	1965	40.0	INF	PEAK < STATED VALUE				
1966	1966	40.0	INF	PEAK < STATED VALUE				
1968	1968	14.0	INF	PEAK < STATED VALUE				
1972	1972	1.0	INF	PEAK < STATED VALUE				
1976	1976	1.0	INF	PEAK < STATED VALUE				
Interval D	ata:							
Y	Low	High	Comment					
1962		0.0	40.0					
1964		0.0	40.0					
1965		0.0	40.0					
1966		0.0	40.0					
1	968	0.0	14.0					
1972		0.0	1.0					
1	976	0.0	1.0					

**WCF164W-HISTORIC PERIOD IGNORED. 21.0 WCF002J-CALCS COMPLETED. RETURN CODE = 2 EMA002W-CONFIDENCE INTERVALS ARE NOT EXACT IF HISTORIC PERIOD > 0

Kendall's Tau Parameters

MEDIAN No. of
TAU P-VALUE SLOPE PEAKS

SYSTEMATIC RECORD -0.376 0.017 -2.142 21

Program PeakFq

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U. S. GEOLOGICAL SURVEY Seq.003.002

Prov. Ver. 7.0 Annual peak flow frequency analysis Run Date / Time

05/08/2013 using Expected Moments Algorithm (EMA) 06/12/2014 13:59

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Station - 06675300 HORSE CREEK TRIBUTARY NEAR LITTLE BEAR, WY

ANNUAL FREQUENCY CURVE PARAMETERS -- LOG-PEARSON TYPE III

LOGARITHMIC

STANDARD MEAN DEVIATION SKEW

EMA W/O REG. INFO 1.0200 0.9435 -1.410 EMA W/REG. INFO 1.1011 0.7568 -0.309

EMA ESTIMATE OF MSE OF SKEW W/O REG. INFO (AT-SITE) 0.4224 EMA ESTIMATE OF MSE OF SKEW W/SYSTEMATIC ONLY (AT-SITE) 0.6109

ANNUAL FREQUENCY CURVE -- DISCHARGES AT SELECTED EXCEEDANCE PROBABILITIES

ANNUAL EMA W/ EMA W/O <----- FOR EMA ESTIMATES ----->
EXCEEDANCE REG INFO REG INFO VARIANCE 95% CONFIDENCE INTERVALS
PROBABILITY ESTIMATE ESTIMATE OF EST. LOWER UPPER

0.9950 0.1 0.0 0.2932 0.0 0.4
0.9900 0.1 0.0 0.2269 0.0 0.7

	0.9900	0.1	0.0	0.2269	0.0	0.7
	0.9500	0.6	0.2	0.1116	0.0	1.9
	0.9000	1.3	0.6	0.0779	0.2	3.5
	0.8000	3.0	2.3	0.0529	0.7	7.3
	0.6667	6.4	6.7	0.0397	2.0	14.6
	0.5000	13.8	17.1	0.0324	5.2	30.2
	0.4292	18.8	23.9	0.0307	7.5	41.0
	0.2000	55.8	63.8	0.0310	24.6	140.8
	0.1000	110.3	100.1	0.0382	49.1	369.8
	0.0400	219.9	140.2	0.0558	92.3	1192.0
	0.0200	336.8	163.4	0.0748	129.8	2681.0
	0.0100	487.9	181.0	0.0987	169.2	5681.0
	0.0050	677.8	194.1	0.1274	208.6	11620.0
	0.0020	996.1	206.2	0.1726	258.8	28940.0
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Program PeakFq U. S. GEOLOGICAL SURVEY Seq.003.003 Prov. Ver. 7.0 Annual peak flow frequency analysis Run Date / Time 05/08/2013 using Expected Moments Algorithm (EMA) 06/12/2014 13:59

Preliminary release of PeakFQ for review and testing only.

Station - 06675300 HORSE CREEK TRIBUTARY NEAR LITTLE BEAR, WY

INPUT DATA LISTING

WATER	PEAK	PEAKFQ	< Inter	vals>	
YEAR	VALUE	CODES	LOW	HIGH	REMARKS
1961	78.0				
1962	40.0 L	0.0	40.0		
1963	286.0				
1964	40.0 L	0.0	40.0		
1965	40.0 L	0.0	40.0		

1966	40.0 L	0.0	40.0
1967	68.0		
1968	14.0 L	0.0	14.0
1969	21.0		
1970	8.0		
1971	34.0		
1972	1.0 L	0.0	1.0
1973	40.0		
1974	24.0		
1975	10.0		
1976	1.0 L	0.0	1.0
1977	15.0		
1978	8.0		
1979	75.0		
1980	7.0		
1981	40.0		

Explanation of peak discharge qualification codes

PeakFQ NWIS 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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- Minus-flagged discharge -- Not used in computation -8888.0 -- No discharge value given
- Minus-flagged water year -- Historic peak used in computation

Program PeakFq U. S. GEOLOGICAL SURVEY Seq.003.004 Prov. Ver. 7.0 Annual peak flow frequency analysis Run Date / Time 05/08/2013 using Expected Moments Algorithm (EMA) 06/12/2014 13:59

Preliminary release of PeakFQ for review and testing only.

Station - 06675300 HORSE CREEK TRIBUTARY NEAR LITTLE BEAR, WY

EMPIRICAL FREQUENCY CURVES -- HIRSCH-STEDINGER PLOTTING POSITIONS

WATER RANKED EMA INTERVALS YEAR DISCHARGE ESTIMATE LOW HIGH 1963 286.0 0.0407 1961 78.0 0.0816

1979	75.0	0.1224		
1967	68.0	0.1633		
1962		0.2857	0.0	40.0
1964		0.2857	0.0	40.0
1965		0.2857	0.0	40.0
1966		0.2857	0.0	40.0
1973	40.0	0.2450		
1981	40.0	0.2042		
1971	34.0	0.3375		
1974	24.0	0.3896		
1969	21.0	0.4416		
1977	15.0	0.4937		
1968		0.5455	0.0	14.0
1975	10.0	0.6059		
1970	8.0	0.7273		
1978	8.0	0.6666		
1980	7.0	0.7880		
1972		0.9496	0.0	1.0
1976		0.8989	0.0	1.0

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Program PeakFq U. S. GEOLOGICAL SURVEY Seq.003.005 Prov. Ver. 7.0 Annual peak flow frequency analysis Run Date / Time 05/08/2013 using Expected Moments Algorithm (EMA) 06/12/2014 13:59

Preliminary release of PeakFQ for review and testing only.

Station - 06675300 HORSE CREEK TRIBUTARY NEAR LITTLE BEAR, WY

EMA REPRESENTATION OF DATA

WATER	< (OBSERVI	ED>	<]	EMA	><-PEI	RCEPTION THR	ESHOLDS-
YEAR	Q_LO	WER Q	_UPPE	R Q_LC	WER	Q_UPPER	LOWER	UPPER
1961	78.0	78.0	78.0	78.0	0.0	INF		
1962	0.0	40.0	0.0	40.0	40.0	INF		
1963	286.0	286.0	286.0	286.0	0.	0 INF		
1964	0.0	40.0	0.0	40.0	40.0	INF		
1965	0.0	40.0	0.0	40.0	40.0	INF		
1966	0.0	40.0	0.0	40.0	40.0	INF		
1967	68.0	68.0	68.0	68.0	0.0	INF		
1968	0.0	14.0	0.0	14.0	14.0	INF		
1969	21.0	21.0	21.0	21.0	0.0	INF		
1970	8.0	8.0	8.0	8.0	0.0	INF		
1971	34.0	34.0	34.0	34.0	0.0	INF		
1972	0.0	1.0	0.0	1.0	1.0	INF		
1973	40.0	40.0	40.0	40.0	0.0	INF		
1974	24.0	24.0	24.0	24.0	0.0	INF		
1975	10.0	10.0	10.0	10.0	0.0	INF		
1976	0.0	1.0	0.0	1.0	1.0	INF		
1977	15.0	15.0	15.0	15.0	0.0	INF		
1978	8.0	8.0	8.0	8.0	0.0	INF		
1979	75.0	75.0	75.0	75.0	0.0	INF		

1980 7.0 7.0 7.0 7.0 0.0 INF 1981 40.0 40.0 40.0 40.0 0.0 INF 1

End PeakFQ analysis.

Stations processed: 1
Number of errors: 0
Stations skipped: 0
Station years: 21

Data records may have been ignored for the stations listed below.

(Card type must be Y, Z, N, H, I, 2, 3, 4, or *.)

(2, 4, and * records are ignored.)

For the station below, the following records were ignored:

FINISHED PROCESSING STATION: 06675300 USGS HORSE CREEK TRIBUTARY NEAR LI

For the station below, the following records were ignored:

FINISHED PROCESSING STATION: