CE 3354 Engineering Hydrology
Exercise Set 4

Exercises

1. Use the Oklahoma data you prepared in ES-3 and analyze using the Bulletin 17C procedure (using the PeakFQ software tool - use station skew option).

   If starting from just the data in ES3 you will have to carefully build an input file – the **Beargrass-B17C.txt**[1] file is the correct format.

2. Locate USGS Station 08144800 Brady Creek near Eden, TX. and analyze the historical peaks using the Bulletin 17C procedures (using the PeakFQ software tool use station skew option). Determine the median discharge predicted for this station by PeakFQ. Also determine the discharge per square mile of contributing drainage area.

3. Use the NOAA Precipitation Frequency Data Server to prepare Intensity-Duration-Frequency curves for Eden, Texas (Concho County). The desired ARI are 2-yr, 10-yr, 50-yr, and 100-yr (4 curves).

4. Use the NOAA Precipitation Frequency Data Server and the SCS Rainfall Distributions to prepare a 50-yr, 24-hour hyetograph for Eden, Texas.

5. Use the NOAA Precipitation Frequency Data Server and the Texas Hyetograph Tool (TxHYETO-2015.xlsx) to prepare a 50-yr, 24-hour hyetograph for Eden, Texas.

Save these 50-yr, 24-hour hyetograph for Eden, Texas.; you will reuse them as inputs for the Hardin Branch project.

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[1]This file is located in same directory as this document

Oklahoma Data in PeakFQ format (minor editing may still be needed)

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* WCF2.DATA  1/9/89 -- BULLETIN 17 EXAMPLES
*---+----1----+----2----+----3----+----4----+----5----+----6---+----7----+----8

Z                              USGS


*                 LAT   LON                 AREA         ELEV
* STATIONID       DDMMSSDDDMMSS             12345671234567123456 78

H 12345678        3527470973329            645.55       1202.01
N 12345678        OKLAHOMA FROM ES3
Y 12345678        20.0
2 12345678
3 12345678        19230101 200000
3 12345678        19240101 42000
3 12345678        19250101 11300
3 12345678        19260101 32400
3 12345678        19270101 108000
3 12345678        19280101 73000
3 12345678        19290101 76500
3 12345678        19300101 47800
3 12345678        19310101 28200
3 12345678        19320101 33700
3 12345678        19330101 25700
3 12345678        19340101 11700
3 12345678        19350101 77800
3 12345678        19360101 26600
3 12345678        19370101 47500
3 12345678        19380101 75600
3 12345678        19390101 19200
3 12345678        19400101 27800
3 12345678        19410101 51000
3 12345678        19420101 94000
3 12345678        19430101 97200
3 12345678        19440101 179000
3 12345678        19450101 124000
3 12345678        19460101 110000
3 12345678        19470101 114000
3 12345678        19480101 70200
3 12345678        19490101 70700
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3 12345678      19500101 92800
3 12345678      19510101 135000
3 12345678      19520101 25800
3 12345678      19530101 17500
3 12345678      19540101 18700
3 12345678      19550101 36300
3 12345678      19560101 49200
3 12345678      19570101 120000
3 12345678      19580101 56800
3 12345678      19590101 54800
3 12345678      19600101 158000
3 12345678      19610101 165000
3 12345678      19620101 103000
3 12345678      19630101 19700
3 12345678      19640101 21100
3 12345678      19650101 171000
3 12345678      19660101 10400
3 12345678      19670101 42000
3 12345678      19680101 52800
3 12345678      19690101 77000
3 12345678      19700101 101000
3 12345678      19710101 17100
*
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Station 08144800 in PeakFQ format (minor editing may still be needed)

```
Z08144800                       USGS
H08144800       3111030995027004848095SW12090110101      101      2000.99
N08144800       Brady Ck nr Eden, TX
Y08144800
308144800       19611009    2786                3.18
308144800       19630505    3.006               1.45
308144800       19631001    0.006
308144800       19650518    57.06               2.24
308144800       19660428    51106               7.08
308144800       19670817    45606               6.72
308144800       19680310    11.06               1.78
308144800       19690911     9466               4.37
308144800       19700515    12.06               1.83
308144800       19710530    10206               4.04
308144800       19720615     3756               3.00
308144800       19730603     4106               3.07
308144800       19731012    33206               6.16
308144800       19750511     2446               3.07
308144800       19760711     4736               3.51
308144800       19770624    37206               6.45
308144800       19780528    38.06               1.84
308144800       19790809    10.06               1.51
308144800       19800909    13506               4.58
308144800       19810516    48.06               2.03
308144800       19820505     1776               2.71
308144800       19830606     1356               2.55
308144800       19840812     3336               3.14
308144800       19841231    60.06               2.08
```