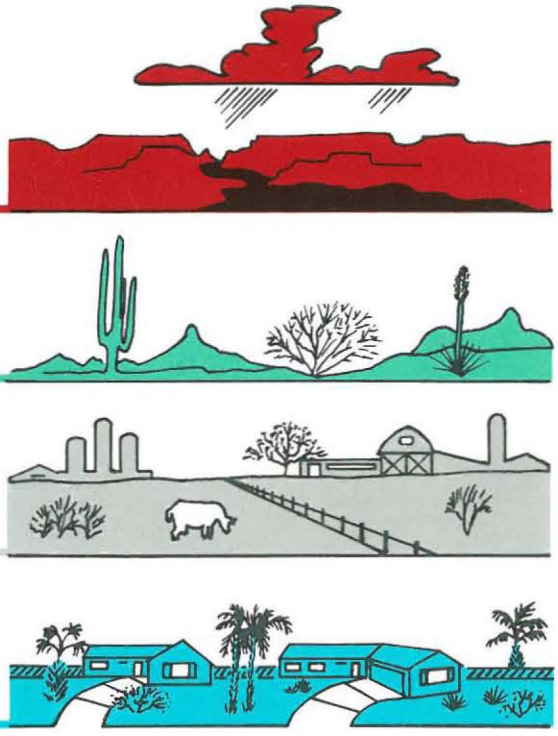

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

A HYDROLOGIC ANALYSIS
OF THE
POWERLINE F.R.S.

VOLUME II

Part I

OD CONTROL DISTRICT OF MARICOPA COUNTY

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Report on

A HYDROLOGIC ANALYSIS OF THE POWERLINE F.R.S.

Prepared by

Flood Control District of Maricopa County
Hydrology Division
Watershed Management Branch

Valerie Rice, Hydrologist
Doug Plasencia, Hydrologist

Volume II

January 1989

A HYDROLOGIC ANALYSIS
OF THE
POWERLINE F.R.S.

VOLUME II

Part I

TABLE OF CONTENTS

I. INTRODUCTION 1

Appendix A : HEC-1 Output - Powerline F.R.S. Conversion Model using SCS Assumption App- 1

Appendix B : HEC-1 Output - Areal Reduction using the NOAA Method App- 40

Appendix C : HEC-1 Output - Areal Reduction using the Osborn Method App- 76

Appendix D : HEC-1 Output - Powerline F.R.S. Future Conditions and Assumptions Hydrology for the Probable Maximum Flood (6 Hour Duration) (Alternative G) App-113

Appendix E : HEC-1 Output - Powerline F.R.S. Future Conditions and Assumptions Hydrology for the Probable Maximum Flood (72 Hour Duration) App-141

Appendix F : HEC-1 Output - Powerline F.R.S. Future Conditions and Assumptions Hydrology for the 100 Year, 24 Hour Storm (Alternative G) App-166

Appendix G : HEC-1 Output - Alternative A : Excavate More Volume from Behind Powerline F.R.S. (PMF) App-193

Appendix H : HEC-1 Output - Alternative A : Excavate More Volume from Behind Powerline F.R.S. (100 Year Storm) App-217

Appendix I : HEC-1 Output - Alternative B : Raise the Powerline F.R.S. by 1.5 Feet (PMF) App-239

Appendix J : HEC-1 Output - Alternative C : Combination of Raising and Excavating (PMF) App-264

Appendix K : HEC-1 Output - Alternative D : Proposed Weekes Wash Dam in Place (PMF) App-288

Appendix L : HEC-1 Output - Alternative D : Proposed Weekes Wash Dam in Place (100 Year Storm) App-314

Appendix M : HEC-1 Output - Alternative E : Diversion of 100 Year, 24 Hour Flows at Apache Trail (Rt. 80) to Apache F.R.S. (PMF) App-340

Appendix N : HEC-1 Output - Alternative E : Diversion of 100 year, 24 hour Flows at Apache Trail (Rt. 80) to Apache F.R.S. (100 year storm) App-366

Appendix O : HEC-1 Output - Alternative F : Diversion of All Flows at Apache Trail (Rt. 80) to Apache F.R.S. (PMF) App-393

Appendix P : HEC-2 Output - Powerline F.R.S. Emergency Spillway Rating Curve App-419

Appendix Q : HEC-2 Output - Upper Weekes Wash Breakout Rating Curve App-456

I. INTRODUCTION

Volume II of the Powerline F.R.S. analysis contains the final computer runs for the various conditions and alternatives.

Appendix A

HEC-1 Output

Powerline F.R.S. Conversion Model
using SCS Assumptions

```
+88888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888+

                    $   $  $   $  $$$$        $   $   $$$   $   $
                    $   $  $   $  $   $       $   $  $   $  $$ $$
                    $   $   $ $   $   $       $   $  $      $ $ $
                    $$$$$    $    $   $       $ $ $   $$$   $ $ $
                    $   $    $    $   $       $ $ $      $  $   $
                    $   $    $    $   $  $$   $$ $$  $   $  $   $
                    $   $    $    $$$$   $$   $   $   $$$   $   $

                DEST=HYD.WSM  USER=HYD.WSM  QUEUE=LPT  DEVICE=@LPB
             SEQ=335  QPRI=128  CPL=132  LPP=66  COPIES=1  PAGES=116

                        CREATED:  29-DEC-88  14:07:52
                       ENQUEUED:  29-DEC-88  14:09:24
                       PRINTING:  29-DEC-88  14:09:25

        PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:WW.OUT

                          $   $  $   $        $$$   $   $  $$$$$
                          $   $  $   $       $   $  $   $    $
                          $   $  $   $       $   $  $   $    $
                          $ $ $  $ $ $       $   $  $   $    $
                          $ $ $  $ $ $       $   $  $   $    $
                          $$ $$  $$ $$  $$   $   $  $   $    $
                          $   $  $   $  $$    $$$    $$$     $

+88888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888888+
```

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.CO / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00  29-DEC-88        14:07:52
QPRI=128         SEQ=332
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:?59.CLI.00004.JOB (WILL BE DELETED AFTER PROCESSING)
LIST FILE  -- :QUEUE:HYD.WSM.LIST.332

--------
LAST MESSAGE CHANGE      17-NOV-88        14:55:52

                ***************          *******        ***********
                ************        *************       ***********
               ***                 ****      ***         ***      ***
              *******             ***                  ***      ***
             ******              ***                  ***      ***
            ***                 ***      ***         ***      ***
          ****                  ***********          ************
        ******                   *******             ************

--------
MOST RECENT LOGON        29-DEC-88        13:32:22

AOS/VS CLI   REV 07.62.00.00     29-DEC-88        14:07:55
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR
) DEFACL HYD.WSM/OWARE
)
)
) LISTFILE WW.OUT
) DATAFILE WW.DAT
) SEA :UTIL:HEC1.DIR/[!SEA]
) X HEC1_START
```

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             FEBRUARY 1981             *
*           REVISED 31 JAN 85           *
*                                       *
*  RUN DATE12/29/1988   TIME14: 7:56 *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*        DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285   *
*                                       *
*****************************************
```

```
X     X  XXXXXXX   XXXXX           X
X     X  X        X     X         XX
X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   X
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX          XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

   1          ID     WEEKES WASH - POWERLINE F.R.S  ANALYSIS
   2          ID     CONVERSION OF MODEL FROM TR-20
   3          ID                  100-YR STORM, 24-HR DURATION; SCS EXCESS; SCS HYDROGRAPH
   4          ID                  DEVELOPMENT; MUSKINGUM ROUTING
   5          ID                  CONTAIN THE 100 YR AT BREAKOUT OF WEEKES WASH.
              *DIAGRAM
   6          IT      10       0       0     200
   7          IO       3

   8          KK      15  WATERSHED 15
   9          KM      HYDROGRAPH FOR WATERSHED 15
  10          PB    3.85
  11          IN      15
  12          PC       0    .002    .005    .008    .011    .014    .017    .020    .023    .026
  13          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
  14          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
  15          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
  16          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
  17          PC    .735    .758    .766    .791    .804    .815    .825    .834    .842    .849
  18          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
  19          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
  20          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
  21          PC    .983    .986    .992    .995    .998   1.000   1.000   1.000   1.000   1.000
  22          BA    1.71
  23          LS       0      80
  24          UD     .18

  25          KK     R15 ROUTE HYDROGRAPH FROM WS 15
  26          KM     ROUTE HYDROGRAPH FROM WATERSHED 15
  27          RM       1     .11      .3

  28          KK      14 WATERSHED 14
  29          KM     HYDPOGRAPH FOR WATERSHED 14
  30          BA    1.16
  31          LS       0      79
  32          UD     .15

  33          KK      16 WATERSHED 16
  34          KM     HYDROGRAPH FOR WATERSHED 16
  35          BA    2.24
  36          LS       0      82
  37          UD     .35

  38          KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
  39          KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
  40          HC       3

  41          KK    R114 ROUTE CP 114
  42          KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
  43          RM       1     .17      .3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  44          KK       13 WATERSHED 13
  45          KM      HYDROGRAPH FOR WATERSHED 13
  46          BA     1.35
  47          LS        0       83
  48          UD     .126

  49          KK      113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
  50          KM      COMBINE HYDROGRAPHS CP 114 AND WS 13
  51          HC        2

  52          KK     R113 ROUTE CP 113 TO CP 112
  53          KM      ROUTE HYDROGRAPH FOR CP 113
  54          RM        1      .19       .3

  55          KK       12 WATERSHED 12
  56          KM      HYDROGRAPH FOR WATERSHED 12
  57          BA     1.43
  58          LS        0       86
  59          UD      .27

  60          KK      112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
  61          KM      COMBINE HYDROGRAPH FROM CP 113 AND WS 12
  62          HC        2

  63          KK     R112 ROUTE CP 112 TO CP 111
  64          KM      ROUTE HYDROGRAPH CP 112 TO CP 111
  65          RM        1      .07       .3

  66          KK       11 WATERSHED 11
  67          KM      HYDROGRAPH FOR WATERSHED 11
  68          BA      .63
  69          LS        0       82
  70          UD     .186

  71          KK       17 WATERSHED 17
  72          KM      HYDROGRAPH FOR WATERSHED 17
  73          BA      .21
  74          LS        0       79
  75          UD     .138

  76          KK      111 CONCENTRATION PT. 111 ( PROPOSED WEEKES WASH DAM)
  77          KM      COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
  78          KM      POINT AT WHICH THE PROPOSED WEEKES DAM WOULD BE.
  79          HC        3

  80          KK    RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  81          KM      ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  82          RM        5      .64       .3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  83          KK       2A  WATERSHED 2A
  84          KM       HYDROGRAPH FOR WATERSHED 2A
  85          BA     1.08
  86          LS        0       75
  87          UD      .22

  88          KK     CP2A  CONCENTRATION POINT 2A
  89          KM     COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
  90          HC        2

  91          KK     RR2A ROUTE HYDROGRAPH TO CP 102
  92          KM      ROUTE THE HYDROGRAPH TO CP 102 (POWERLINE DAM)
  93          RM        7      .89       .3

  94          KK       2B WATERSHED 2B
  95          KM      HYDROGRAPH FOR WATERSHED 2B
  96          BA     4.79
  97          LS        0       75
  98          UD      .99

  99          KK      102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 100          KM      COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 101          HC        2

 102          KK        5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 103          KM      HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 104          BA     5.52
 105          LS        0       81
 106          UD      .71

 107          KK       R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 108          KM       ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 109          RM        2      .57       .3

 110          KK        4 WATERSHED 4
 111          KM       HYDROGRAPH FOR WATERSHED 4
 112          BA    13.11
 113          LS        0       81
 114          UD     1.30

 115          KK        6 WATERSHED 6
 116          KM       HYDROGRAPH FOR WATERSHED 6
 117          BA     7.17
 118          LS        0       79
 119          UD     1.08

 120          KK      104 CONCENTRATION PT. 104, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 121          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 122          HC        3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 123          KK     R104 ROUTE THE HYDROGRAPH FROM CP 104 TO WHERE NEXT WASH ENTERS.
 124          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 125          RM        1      .27       .3

 126          KK        3 WATERSHED 3
 127          KM       HYDROGRAPH FOR WATERSHED 3
 128          BA     5.92
 129          LS        0       78
 130          UD     .846

 131          KK     W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 132          KM       COMBINE HYDROGRAPHS FROM CP 104 AND WS 3
 133          HC        2

 134          KK    RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 135          KM       ROUTE THE HYDROGRAPH TO POWERLINE DAM
 136          RM        1      .38       .3

 137          KK      PLD CONCENTRATION PT. AT POWERLINE DAM
 138          KM      COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 139          HC        2

 140          KK      RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 141          KM      RESERVOIR RATING CURVE
 142          RS        1     ELEV  1568.2        0
 143          SV        0      175      380      700     1100     1600     2175     2875     3675     4200
 144          SV     4600     5525     6725     7925
 145          SQ        0  0.00001       92      106      119      130      141      150      159      165
 146          SQ      668     4426    11084    20092
 147          SE   1568.1   1568.2   1570.0   1572.1   1574.1   1576.1   1578.1   1580.1   1582.1   1583.3
 148          SE   1584.1   1586.1   1588.1   1590.1
 149          SS   1583.3        0        0        0
 150          ST   1589.1    13358      2.2      1.5
 151          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   8          15
               V
               V
  25         P15
               .
               .
  28           .          14
               .           .
               .           .
  33           .           .          16
               .           .           .
               .           .           .
  38        114.......................
               V
               V
  41       R114
               .
               .
  44           .          13
               .           .
               .           .
  49        113............
               V
               V
  52       R113
               .
               .
  55           .          12
               .           .
               .           .
  60        112............
               V
               V
  63       R112
               .
               .
  66           .          11
               .           .
               .           .
  71           .           .          17
               .           .           .
               .           .           .
  76        111.......................
               V
               V
  80      RD111
               .
               .
  83           .          2A
               .           .
               .           .
  88       CP2A............
               V
               V
  91       RP2A
               .
```

```
 94          :          28
             :           :
 99        102...........:
             :
102          :           5
             :           V
             :           V
107          :          R5
             :           :
             :           :
110          :           :           4
             :           :           :
             :           :           :
115          :           :           :           6
             :           :           :           :
             :           :           :           :
120          :         104...........................
             :           V
             :           V
123          :        R104
             :           :
             :           :
126          :           :           3
             :           :           :
             :           :           :
131          :        W103............
             :           V
             :           V
134          :       RW103
             :           :
             :           :
137        PLD...........:
             V
             V
140        RES
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*          REVISED 31 JAN 85           *
*                                      *
*  RUN DATE12/29/1985   TIME14: 8: 4 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
```

```
                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                                 100-YR STORM, 24-HR DURATION; SCS EXCESS; SCS HYDROGRAPH
                                 DEVELOPMENT; MUSKINGUM ROUTING
                                 CONTAIN THE 100 YR AT BREAKOUT OF WEEKES WASH.

  7 IO        OUTPUT CONTROL VARIABLES
                    IPRNT          3  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

    IT        HYDROGRAPH TIME DATA
                     NMIN         10  MINUTES IN COMPUTATION INTERVAL
                    IDATE     1    0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ        200  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE     2    0  ENDING DATE
                   NDTIME       0910  ENDING TIME

                COMPUTATION INTERVAL     .17 HOURS
                     TOTAL TIME BASE   33.17 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
  8 KK      *       15   *       WATERSHED 15
            *            *
            **************
                         HYDROGRAPH FOR WATERSHED 15

 11 IN        TIME DATA FOR INPUT TIME SERIES
                    JXMIN         15  TIME INTERVAL IN MINUTES
                   JXDATE     1    0  STARTING DATE
                   JXTIME          0  STARTING TIME

              SUBBASIN RUNOFF DATA
```

```
22 BA          SUBBASIN CHARACTERISTICS
                     TAREA          1.71  SUBBASIN AREA

               PRECIPITATION DATA

10 PB                STORM          3.85  BASIN TOTAL PRECIPITATION

12 PI            INCREMENTAL PRECIPITATION PATTERN
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .01        .01        .01        .01        .01        .01
                     .01        .01        .01        .01        .01        .01        .01        .02        .02        .07
                     .13        .18        .03        .02        .02        .02        .01        .01        .02        .01
                     .01        .01        .01        .01        .01        .01        .01        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00

23 LS          SCS LOSS RATE
                     STRTL           .50  INITIAL ABSTRACTION
                    CRVNBR         80.00  CURVE NUMBER
                     RTIMP           .00  PERCENT IMPERVIOUS AREA

24 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG           .18  LAG

                                                                                                                  ***

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

                                                                                  UNIT HYDROGRAPH
                                                                              7 END-OF-PERIOD ORDINATES
                2235.      2772.      1037.       378.       134.        47.        18.

      ***               ***                ***                ***                ***

                          HYDROGRAPH AT STATION        15

    TOTAL RAINFALL =     3.85, TOTAL LOSS =     1.93, TOTAL EXCESS =     1.92

 PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                       6-HR        24-HR        72-HR      33.17-HR
   1336.       12.00          (CFS)        287.         88.          64.          64.
                           (INCHES)       1.560        1.918        1.918        1.918
                            (AC-FT)        142.         175.         175.         175.

                          CUMULATIVE AREA =     1.71 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
```

```
25 KK      *        R15  *       ROUTE HYDROGRAPH FROM WS 15
           *             *
           **************
                            ROUTE HYDROGRAPH FROM WATERSHED 15

              HYDROGRAPH ROUTING DATA

27 RM           MUSKINGUM ROUTING
                      NSTPS          1 NUMBER OF SUBREACHES
                      AMSKK        .11 MUSKINGUM K
                          X        .30 MUSKINGUM X

                                                                  ***

     ***              ***              ***              ***              ***

                        HYDROGRAPH AT STATION      R15

PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                      6-HR        24-HR        72-HR      33.17-HR
   1833.      12.17          (CFS)       287.         88.          64.          64.
                         (INCHES)      1.560        1.918        1.918        1.918
                          (AC-FT)       142.         175.         175.         175.

                         CUMULATIVE AREA =     1.71 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           **************
           *            *
28 KK      *         14 *       WATERSHED 14
           *            *
           **************
                            HYDROGRAPH FOR WATERSHED 14

              SUBBASIN RUNOFF DATA

30 BA           SUBBASIN CHARACTERISTICS
                      TAREA         1.16  SUBBASIN AREA

                PRECIPITATION DATA

10 PB                 STORM         3.85  BASIN TOTAL PRECIPITATION

12 PI             INCREMENTAL PRECIPITATION PATTERN
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .01       .01       .01       .01       .01       .01
                      .01       .01       .01       .01       .01       .01       .01       .02       .02       .07
                      .13       .18       .03       .02       .02       .02       .01       .01       .02       .01
                      .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
```

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                    .00        .00        .00

 31 LS          SCS LOSS RATE
                     STRTL          .53  INITIAL ABSTRACTION
                    CRVNBR        79.00  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

 32 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .15  LAG

                                                                  ***

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

                                                        UNIT HYDROGRAPH
                                                   7 END-OF-PERIOD ORDINATES
            1960.     1762.      534.      166.       52.       18.        0.

     ***            ***            ***            ***            ***

                     HYDROGRAPH AT STATION        14

   TOTAL RAINFALL =    3.85, TOTAL LOSS =    2.01, TOTAL EXCESS =    1.84

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     33.17-HR
   1338.     12.00        (CFS)     187.        57.        42.          42.
                         (INCHES)  1.500      1.842      1.842        1.842
                         (AC-FT)    93.       114.       114.         114.

                     CUMULATIVE AREA =    1.16 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 33 KK      *        16  *      WATERSHED 16
            *            *
            **************
                         HYDROGRAPH FOR WATERSHED 16

              SUBBASIN RUNOFF DATA

 35 BA          SUBBASIN CHARACTERISTICS
                     TAREA         2.24  SUBBASIN AREA

                PRECIPITATION DATA

 10 PB               STORM         3.85  BASIN TOTAL PRECIPITATION

 12 PI            INCREMENTAL PRECIPITATION PATTERN
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                     .00        .00        .00        .00        .01        .01        .01        .01        .01        .01
                     .01        .01        .01        .01        .01        .01        .01        .02        .02        .07
                     .13        .18        .03        .02        .02        .02        .01        .01        .02        .01
```

```
                    .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00

 36 LS          SCS LOSS RATE
                      STRTL          .44  INITIAL ABSTRACTION
                     CRVNBR        82.00  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

 37 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .35  LAG

                                                                  ***

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

                                                        UNIT HYDROGRAPH
                                                   13 END-OF-PERIOD ORDINATES
              729.     2242.     2396.     1585.      797.      437.      233.      123.       66.       35.
               21.       10.        0.

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION       16

   TOTAL RAINFALL =    3.85, TOTAL LOSS =    1.77, TOTAL EXCESS =    2.08

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     33.17-HR
  2053.      12.17        (CFS)      405.        125.         90.         90.
                        (INCHES)    1.682       2.075       2.075       2.075
                         (AC-FT)     201.        248.        248.        248.

                       CUMULATIVE AREA =    2.24 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 38 KK      *      114   *      CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
            *            *
            **************
                         COMBINE ALL THREE HYDROGRAPHS AT CP 114

 40 HC          HYDROGRAPH COMBINATION
                      ICOMP            3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION      114

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     33.17-HR
```

```
  4956.     12.17        (CFS)      879.        271.        196.        196.
                      (INCHES)     1.600       1.970       1.970       1.970
                       (AC-FT)      436.        537.        537.        537.

                      CUMULATIVE AREA =    5.11 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 41 KK      *     R114   *      ROUTE CP 114
            *            *
            **************
                              ROUTE HYDROGRAPH FROM CP114 TO CP 113

               HYDROGRAPH ROUTING DATA

 43 RM           MUSKINGUM ROUTING
                      NSTPS          1 NUMBER OF SUBREACHES
                      AMSKK        .17 MUSKINGUM K
                          X        .30 MUSKINGUM X

                                                                  ***

    ***              ***              ***              ***              ***

                        HYDROGRAPH AT STATION      R114

PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                    6-HR        24-HR       72-HR      33.17-HR
  4584.      12.33        (CFS)      879.        271.        196.        196.
                      (INCHES)     1.599       1.970       1.970       1.970
                       (AC-FT)      436.        537.        537.        537.

                      CUMULATIVE AREA =    5.11 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 44 KK      *       13   *      WATERSHED 13
            *            *
            **************
                              HYDROGRAPH FOR WATERSHED 13

               SUBBASIN RUNOFF DATA

 46 BA           SUBBASIN CHARACTERISTICS
                      TAREA        1.35  SUBBASIN AREA

                 PRECIPITATION DATA

 10 PB                STORM        3.85  BASIN TOTAL PRECIPITATION

 12 PI             INCREMENTAL PRECIPITATION PATTERN
```

```
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .01     .01     .01     .01     .01     .01
.01     .01     .01     .01     .01     .01     .01     .02     .02     .07
.13     .13     .03     .02     .02     .02     .01     .01     .02     .01
.01     .01     .01     .01     .01     .01     .01     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00
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47 LS          SCS LOSS RATE
                    STRTL          .41  INITIAL ABSTRACTION
                   CRVNBR        83.00  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

48 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .13  LAG

                                                    ***

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

                                                UNIT HYDROGRAPH
                                            6 END-OF-PERIOD ORDINATES
            2346.     1750.      463.      127.       35.        7.

     ***            ***            ***            ***            ***

                     HYDROGRAPH AT STATION        13

   TOTAL RAINFALL =    3.85, TOTAL LOSS =    1.69, TOTAL EXCESS =    2.16

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                   6-HR       24-HR       72-HR     33.17-HR
   2012.      12.00        (CFS)      254.         78.         57.         57.
                         (INCHES)    1.748       2.157       2.157       2.157
                          (AC-FT)     126.        155.        155.        155.

                     CUMULATIVE AREA =    1.35 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
49 KK       *      113   *      CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
            *            *
            **************
                         COMBINE HYDROGRAPHS CP 114 AND WS 13

51 HC          HYDROGRAPH COMBINATION
                    ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                    ***
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     ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION      113

PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                     6-HR       24-HR       72-HR      33.17-HR
   5215.      12.33        (CFS)       1131.        349.        253.         253.
                        (INCHES)       1.628       2.009       2.009        2.009
                         (AC-FT)        561.        692.        692.         692.

                        CUMULATIVE AREA =     6.46 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 52 KK      *      R113  *       ROUTE CP 113 TO CP 112
            *            *
            **************
                              ROUTE HYDROGRAPH FOR CP 113

               HYDROGRAPH ROUTING DATA

 54 RM           MUSKINGUM ROUTING
                       NSTPS          1 NUMBER OF SUBREACHES
                       AMSKK        .19 MUSKINGUM K
                           X        .30 MUSKINGUM X

                                                                  ***
     ***             ***             ***             ***             ***

                        HYDRCGRAPH AT STATION      R113

PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                     6-HR       24-HR       72-HR      33.17-HR
   4984.      12.50        (CFS)       1131.        349.        253.         253.
                        (INCHES)       1.628       2.009       2.009        2.009
                         (AC-FT)        561.        692.        692.         692.

                        CUMULATIVE AREA =     6.46 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 55 KK      *         12 *       WATERSHED 12
            *            *
            **************
                              HYDROGRAPH FOR WATERSHED 12

               SUBBASIN RUNOFF DATA

 57 BA           SUBBASIN CHARACTERISTICS
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                    TAREA          1.43  SUBBASIN AREA

               PRECIPITATION DATA

 10 PS                STORM          3.85  BASIN TOTAL PRECIPITATION

 12 PI            INCREMENTAL PRECIPITATION PATTERN
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .01       .01       .01       .01       .01       .01
                      .01       .01       .01       .01       .01       .01       .01       .02       .02       .07
                      .13       .18       .03       .02       .02       .02       .01       .01       .02       .01
                      .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00

 58 LS           SCS LOSS RATE
                      STRTL          .33  INITIAL ABSTRACTION
                     CRVNBR        86.00  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

 59 UD           SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .27  LAG

                                                                                  ***

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

                                                          UNIT HYDROGRAPH
                                                     10 END-OF-PERIOD ORDINATES
              335.      1955.      1504.      664.      314.      145.       68.       31.       16.        6.

     ***              ***              ***              ***              ***

                        HYDROGRAPH AT STATION       12

   TOTAL RAINFALL =     3.85, TOTAL LOSS =     1.44, TOTAL EXCESS =     2.41

PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                    6-HR        24-HR        72-HR      33.17-HR
  1783.       12.17        (CFS)       298.         93.         67.          67.
                         (INCHES)     1.940       2.411       2.411        2.411
                          (AC-FT)      148.        184.        184.         184.

                        CUMULATIVE AREA =     1.43 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 60 KK      *      112   *      CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
            *            *
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              **************
                                COMBINE HYDROGRAPH FROM CP 113 AND WS 12

 62 HC            HYDROGRAPH COMBINATION
                        ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                                   ***

     ***               ***               ***               ***               ***

                          HYDROGRAPH AT STATION      112

PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                    6-HR        24-HR        72-HR      33.17-HR
   6057.      12.33          (CFS)     1427.         442.         320.         320.
                         (INCHES)     1.682        2.082        2.082        2.082
                          (AC-FT)      708.         876.         876.         876.

                          CUMULATIVE AREA =    7.89 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              **************
              *            *
 63 KK        *      R112  *      ROUTE CP 112 TO CP 111
              *            *
              **************
                                ROUTE HYDROGRAPH CP 112 TO CP 111

                HYDROGRAPH ROUTING DATA

 65 RM            MUSKINGUM ROUTING
                        NSTPS          1 NUMBER OF SUBREACHES
                        AMSKK        .07 MUSKINGUM K
                            X        .30 MUSKINGUM X
                                                                   ***

     ***               ***               ***               ***               ***

                          HYDROGRAPH AT STATION     R112

PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                    6-HR        24-HR        72-HR      33.17-HR
   5980.      12.50          (CFS)     1427.         442.         320.         320.
                         (INCHES)     1.681        2.082        2.082        2.082
                          (AC-FT)      708.         876.         876.         876.

                          CUMULATIVE AREA =    7.89 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              **************
              *            *
 66 KK        *        11  *      WATERSHED 11
```

```
*              *
**************
                    HYDROGRAPH FOR WATERSHED 11

          SUBBASIN RUNOFF DATA

68 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .63  SUBBASIN AREA

               PRECIPITATION DATA

10 PB               STORM         3.85  BASIN TOTAL PRECIPITATION

12 PI            INCREMENTAL PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .01       .02       .02       .07
                    .13       .18       .03       .02       .02       .02       .01       .01       .02       .01
                    .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00

69 LS          SCS LOSS RATE
                    STRTL          .44  INITIAL ABSTRACTION
                   CRVNBR        82.00  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

70 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG          .19  LAG

                                                                                  ***

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

                                                                UNIT HYDROGRAPH
                                                            8 END-OF-PERIOD ORDINATES
              781.      1023.      403.      149.       54.       20.        8.        1.

     ***              ***              ***              ***              ***

                         HYDROGRAPH AT STATION        11

    TOTAL RAINFALL =     3.85, TOTAL LOSS =     1.77, TOTAL EXCESS =     2.08

PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                     6-HR        24-HR        72-HR      33.17-HR
   720.       12.00          (CFS)      114.          35.          25.          25.
                          (INCHES)    1.684        2.075        2.075        2.075
                          (AC-FT)       57.          70.          70.          70.

                         CUMULATIVE AREA =      .63 SQ MI
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 71 KK      *        17  *       WATERSHED 17
            *            *
            **************
                              HYDROGRAPH FOR WATERSHED 17

                SUBBASIN RUNOFF DATA

 73 BA            SUBBASIN CHARACTERISTICS
                        TAREA          .21  SUBBASIN AREA

                  PRECIPITATION DATA

 10 PB                  STORM         3.85  BASIN TOTAL PRECIPITATION

 12 PI              INCREMENTAL PRECIPITATION PATTERN
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .01       .01       .01       .01       .01       .01
                        .01       .01       .01       .01       .01       .01       .01       .02       .02       .07
                        .13       .18       .03       .02       .02       .02       .01       .01       .02       .01
                        .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                        .00       .00       .00

 74 LS            SCS LOSS RATE
                        STRTL          .53  INITIAL ABSTRACTION
                       CRVNBR        79.00  CURVE NUMBER
                        RTIMP          .00  PERCENT IMPERVIOUS AREA

 75 UD            SCS DIMENSIONLESS UNITGRAPH
                         TLAG          .14  LAG

                                                                  ***

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

                                                        UNIT HYDROGRAPH
                                                   6 END-OF-PERIOD ORDINATES
                393.      301.       85.       24.        7.        2.

     ***            ***            ***            ***            ***

                         HYDROGRAPH AT STATION       17

   TOTAL RAINFALL =    3.85, TOTAL LOSS =    2.01, TOTAL EXCESS =    1.84

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     33.17-HR
   254.      12.00        (CFS)      34.         10.         8.          8.
                        (INCHES)   1.500       1.842       1.842       1.842
                         (AC-FT)     17.         21.         21.         21.
```

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                    CUMULATIVE AREA =      .21 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 76 KK      *      111   *      CONCENTRATION PT. 111 ( PROPOSED WEEKES WASH DAM)
            *            *
            **************
                           COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
                           POINT AT WHICH THE PROPOSED WEEKES DAM WOULD BE.

 79 HC          HYDROGRAPH COMBINATION
                      ICOMP           3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION      111

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     33.17-HR
   6412.     12.33        (CFS)     1574.        487.        353.         353.
                       (INCHES)     1.677       2.076       2.076        2.076
                        (AC-FT)      781.        966.        966.         966.

                    CUMULATIVE AREA =    8.73 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 80 KK      *     RD111  *      ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
            *            *
            **************
                           ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.

              HYDROGRAPH ROUTING DATA

 82 RM          MUSKINGUM ROUTING
                      NSTPS           5 NUMBER OF SUBREACHES
                      AMSKK         .64 MUSKINGUM K
                          X         .30 MUSKINGUM X

                                                                  ***

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION    RD111

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     33.17-HR
   5880.     13.00        (CFS)     1573.        487.        353.         353.
```

```
                    (INCHES)      1.675        2.076        2.076        2.076
                     (AC-FT)       780.         965.         966.         966.

                    CUMULATIVE AREA =     8.73 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 83 KK      *     2A     *        WATERSHED 2A
            *            *
            **************
                                HYDROGRAPH FOR WATERSHED 2A

          SUBBASIN RUNOFF DATA

 85 BA          SUBBASIN CHARACTERISTICS
                      TAREA         1.08  SUBBASIN AREA

                PRECIPITATION DATA

 10 PB                STORM         3.85  BASIN TOTAL PRECIPITATION

 12 PI            INCREMENTAL PRECIPITATION PATTERN
                      .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                      .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                      .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                      .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                      .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                      .00        .00        .00        .00        .01        .01        .01        .01        .01        .01
                      .01        .01        .01        .01        .01        .01        .01        .02        .02        .07
                      .13        .18        .03        .02        .02        .02        .01        .01        .02        .01
                      .01        .01        .01        .01        .01        .01        .01        .00        .00        .00
                      .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                      .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                      .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                      .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                      .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                      .00        .00        .00

 86 LS          SCS LOSS RATE
                      STRTL         .67  INITIAL ABSTRACTION
                     CRVNBR       75.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 87 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG         .22  LAG

                                                                  ***

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

                                                        UNIT HYDROGRAPH
                                                   9 END-OF-PERIOD ORDINATES
              977.      1715.      886.      360.      147.      60.      24.      11.      1.

     ***            ***            ***            ***            ***

                     HYDROGRAPH AT STATION       2A
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   TOTAL RAINFALL =     3.85, TOTAL LOSS =     2.29, TOTAL EXCESS =     1.56

PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                    6-HR        24-HR        72-HR      33.17-HR
   904.       12.17        (CFS)       147.         45.          33.          33.
                        (INCHES)      1.268        1.555        1.555        1.555
                         (AC-FT)       73.         90.          90.          90.

                        CUMULATIVE AREA =     1.08 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 88 KK      *     CP2A   *       CONCENTRATION POINT 2A
            *            *
            **************
                          COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.

 90 HC          HYDROGRAPH COMBINATION
                      ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

    ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION     CP2A

PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                    6-HR        24-HR        72-HR      33.17-HR
  6010.       13.00        (CFS)      1718.        532.         385.         385.
                        (INCHES)      1.628       2.018        2.018        2.018
                         (AC-FT)       852.       1056.        1056.        1056.

                        CUMULATIVE AREA =     9.81 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 91 KK      *     RR2A   *       ROUTE HYDROGRAPH TO CP 102
            *            *
            **************
                          ROUTE THE HYDROGRAPH TO CP 102 (POWERLINE DAM)

               HYDROGRAPH ROUTING DATA

 93 RM          MUSKINGUM ROUTING
                      NSTPS          7 NUMBER OF SUBREACHES
                      AMSKK        .89 MUSKINGUM K
                          X        .30 MUSKINGUM X

                                                                  ***
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***             ***             ***             ***             ***

                    HYDROGRAPH AT STATION      RR2A

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     33.17-HR
   5544.     14.00        (CFS)    1713.        532.        385.         385.
                        (INCHES)   1.623       2.018       2.018        2.018
                         (AC-FT)    849.       1056.       1056.        1056.

                        CUMULATIVE AREA =    9.81 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 94 KK      *     2B     *      WATERSHED 2B
            *            *
            **************
                        HYDROGRAPH FOR WATERSHED 2B

              SUBBASIN RUNOFF DATA

 96 BA          SUBBASIN CHARACTERISTICS
                      TAREA         4.79  SUBBASIN AREA

                PRECIPITATION DATA

 10 PB                STORM         3.85  BASIN TOTAL PRECIPITATION

 12 PI            INCREMENTAL PRECIPITATION PATTERN
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .01       .01       .01       .01       .01       .01
                      .01       .01       .01       .01       .01       .01       .01       .02       .02       .07
                      .13       .18       .03       .02       .02       .02       .01       .01       .02       .01
                      .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00

 97 LS          SCS LOSS RATE
                      STRTL          .67  INITIAL ABSTRACTION
                     CRVNBR        75.00  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

 98 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .99  LAG

                                                    ***

                                              UNIT HYDROGRAPH
                                         32 END-OF-PERIOD ORDINATES
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148.     437.     895.     1496.    1949.    2141.    2137.    1941.    1686.    1329.
979.     759.     589.     467.     363.     280.     218.     168.     130.     101.
 79.      61.      48.      37.      29.      23.      19.      15.      11.       7.
  4.       1.

***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION      28

   TOTAL RAINFALL =    3.85, TOTAL LOSS =    2.29, TOTAL EXCESS =    1.56

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     33.17-HR
  1697.      13.00        (CFS)      640.        200.        145.        145.
                        (INCHES)    1.243       1.555       1.555       1.555
                         (AC-FT)     317.        397.        397.        397.

                    CUMULATIVE AREA =    4.79 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
 99 KK    *      102   *      CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
          *            *
          **************
                         COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)

101 HC          HYDROGRAPH COMBINATION
                     ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                          ***

***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION     102

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     33.17-HR
  6408.      14.00        (CFS)     2339.        733.        530.        530.
                        (INCHES)    1.489       1.866       1.866       1.866
                         (AC-FT)    1160.       1453.       1453.       1453.

                    CUMULATIVE AREA =   14.60 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
102 KK    *        5   *      WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
          *            *
          **************
                         HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)

          SUBBASIN RUNOFF DATA
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104 BA          SUBBASIN CHARACTERISTICS
                      TAREA          5.52  SUBBASIN AREA

                PRECIPITATION DATA

 10 PB                STORM          3.85  BASIN TOTAL PRECIPITATION

 12 PI            INCREMENTAL PRECIPITATION PATTERN
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .01       .01       .01       .01       .01       .01
                      .01       .01       .01       .01       .01       .01       .01       .02       .02       .07
                      .13       .18       .03       .02       .02       .02       .01       .01       .02       .01
                      .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00

105 LS          SCS LOSS RATE
                      STRTL          .47  INITIAL ABSTRACTION
                     CRVNBR        81.00  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

106 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .71  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                          23 END-OF-PERIOD ORDINATES
            367.      1151.      2383.      3210.      3347.      2986.      2387.      1613.      1129.       818.
            584.       413.       294.       207.       147.       105.        74.        52.        38.        29.
             20.        13.        6.

     ***        ***        ***        ***        ***

                      HYDROGRAPH AT STATION        5

   TOTAL RAINFALL =    3.85, TOTAL LOSS =    1.85, TOTAL EXCESS =    2.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     33.17-HR
  3238.      12.67        (CFS)     957.        296.        214.        214.
                        (INCHES)   1.612       1.996       1.996       1.996
                         (AC-FT)    475.        588.        588.        588.

                      CUMULATIVE AREA =    5.52 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
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107 KK      *         R5  *      ROUTE HYDROGRAPH FROM WS 5 TO CP 104
            *             *
            **************
                                ROUTE HYDROGRAPH FOR WS 5 TO CP 104

               HYDROGRAPH ROUTING DATA

109 RM           MUSKINGUM ROUTING
                       NSTPS          2 NUMBER OF SUBREACHES
                       AMSKK        .57 MUSKINGUM K
                           X        .30 MUSKINGUM X

                                                                  ***

     ***              ***              ***              ***              ***

                         HYDROGRAPH AT STATION        R5

PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                    6-HR        24-HR        72-HR      33.17-HR
   2893.      13.17          (CFS)     955.         296.         214.         214.
                         (INCHES)    1.609        1.996        1.996        1.996
                          (AC-FT)     474.         588.         588.         588.

                          CUMULATIVE AREA =     5.52 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *             *
110 KK      *          4  *      WATERSHED 4
            *             *
            **************
                                HYDROGRAPH FOR WATERSHED 4

               SUBBASIN RUNOFF DATA

112 BA           SUBBASIN CHARACTERISTICS
                       TAREA        13.11  SUBBASIN AREA

                 PRECIPITATION DATA

 10 PB                 STORM         3.85  BASIN TOTAL PRECIPITATION

 12 PI             INCREMENTAL PRECIPITATION PATTERN
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .01       .01       .01       .01       .01       .01
                       .01       .01       .01       .01       .01       .01       .01       .02       .02       .07
                       .13       .18       .03       .02       .02       .02       .01       .01       .02       .01
                       .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                       .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
```

```
                    .CC        .00        .00

113 LS          SCS LOSS RATE
                     STRTL          .47  INITIAL ABSTRACTION
                    CRVNBR        81.00  CURVE NUMBER
                     RTIMP          .00  PERCENT IMPERVIOUS AREA

114 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG         1.30  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                          41 END-OF-PERIOD ORDINATES
            203.      627.     1208.     2020.     3040.     3870.     4378.     4563.     4541.     4243.
           3845.     3362.     2750.     2167.     1766.     1448.     1202.     1000.      825.      664.
            554.      455.      372.      306.      248.      206.      170.      139.      116.       94.
             78.       64.       53.       45.       38.       32.       25.       19.       14.        8.
              3.

    ***             ***             ***             ***             ***

                     HYDROGRAPH AT STATION        4

   TOTAL RAINFALL =    3.85, TOTAL LOSS =    1.85, TOTAL EXCESS =    2.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                    6-HR       24-HR       72-HR     33.17-HR
  5079.      13.33        (CFS)      2236.        704.        509.        509.
                        (INCHES)     1.586       1.996       1.996       1.996
                         (AC-FT)     1109.       1396.       1396.       1396.

                     CUMULATIVE AREA =   13.11 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
115 KK      *          6 *       WATERSHED 6
            *            *
            **************
                            HYDROGRAPH FOR WATERSHED 6

               SUBBASIN RUNOFF DATA

117 BA          SUBBASIN CHARACTERISTICS
                     TAREA         7.17  SUBBASIN AREA

                PRECIPITATION DATA

 10 PB                STORM         3.85  BASIN TOTAL PRECIPITATION

 12 PI            INCREMENTAL PRECIPITATION PATTERN
                    .CO       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .CO       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .CO       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .CO       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .CO       .00       .00       .00       .01       .01       .01       .01       .01       .01
```

```
                .01       .01       .01       .01       .01       .01       .01       .02       .02       .07
                .13       .18       .03       .02       .02       .02       .01       .01       .02       .01
                .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00

118 LS        SCS LOSS RATE
                STRTL        .53  INITIAL ABSTRACTION
               CRVNBR      79.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

119 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        1.08  LAG

                                                  ***

                                              UNIT HYDROGRAPH
                                          34 END-OF-PERIOD ORDINATES
          180.      530.     1065.     1814.     2496.     2877.     2978.     2867.     2584.     2226.
         1754.     1330.     1050.      828.      672.      534.      417.      331.      264.      208.
          162.      130.      104.       82.       65.       51.       41.       32.       27.       22.
           17.       12.        8.        4.

   ***          ***          ***          ***          ***

                HYDROGRAPH AT STATION        6

  TOTAL RAINFALL =    3.85, TOTAL LOSS =    2.01, TOTAL EXCESS =    1.84

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR       24-HR       72-HR     33.17-HR
  2905.      13.00        (CFS)   1138.        355.        257.        257.
                        (INCHES)  1.476       1.842       1.842       1.842
                         (AC-FT)   564.        705.        705.        705.

                CUMULATIVE AREA =    7.17 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
120 KK    *     104    *      CONCENTRATION PT. 104, HYDROGRAPHS FROM R 5, WS 4, & WS 6
          *            *
          **************
                        COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6

122 HC        HYDROGRAPH COMBINATION
                ICOMP            3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                  ***

   ***          ***          ***          ***          ***

                HYDROGRAPH AT STATION      104
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PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                  6-HR       24-HR       72-HR      33.17-HR
  10808.      13.17        (CFS)    4328.       1355.        981.         981.
                        (INCHES)    1.560       1.953       1.953        1.953
                         (AC-FT)    2146.       2688.       2688.        2688.

                         CUMULATIVE AREA =   25.80 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
123 KK      *      R104  *      ROUTE THE HYDROGRAPH FROM CP 104 TO WHERE NEXT WASH ENTERS.
            *            *
            **************
                                ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS

               HYDROGRAPH ROUTING DATA

125 RM           MUSKINGUM RCUTING
                       NSTPS          1 NUMBER OF SUBREACHES
                       AMSKK        .27 MUSKINGUM K
                           X        .30 MUSKINGUM X

                                                                  ***

     ***              ***              ***              ***              ***

                         HYDROGRAPH AT STATION     R104

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                  6-HR       24-HR       72-HR      33.17-HR
  10473.      13.50        (CFS)    4323.       1355.        981.         981.
                        (INCHES)    1.558       1.953       1.953        1.953
                         (AC-FT)    2144.       2688.       2688.        2688.

                         CUMULATIVE AREA =   25.80 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
126 KK      *          3 *      WATERSHED 3
            *            *
            **************
                                HYDROGRAPH FOR WATERSHED 3

               SUBBASIN RUNOFF DATA

123 BA           SUBBASIN CHARACTERISTICS
                       TAREA        5.92  SUBBASIN AREA

                 PRECIPITATION DATA

 10 PB                 STORM        3.85  BASIN TOTAL PRECIPITATION
```

```
 12 PI            INCREMENTAL PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .01       .02       .02       .07
                    .13       .18       .03       .02       .02       .02       .01       .01       .02       .01
                    .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00

129 LS          SCS LOSS RATE
                      STRTL          .56  INITIAL ABSTRACTION
                     CRVNBR        78.00  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

130 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .85  LAG

                                                   ***

                                                UNIT HYDROGRAPH
                                          27 END-OF-PERIOD ORDINATES
            263.      801.      1668.      2581.      3039.      3052.      2741.      2292.      1679.      1214.
            903.      690.       515.       384.       288.       213.       158.       118.        88.        66.
             49.       37.        29.        23.        16.        10.         5.

    ***            ***            ***            ***            ***

                      HYDROGRAPH AT STATION        3

   TOTAL RAINFALL =    3.85, TOTAL LOSS =    2.08, TOTAL EXCESS =    1.77

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                    6-HR       24-HR       72-HR     33.17-HR
   2704.     12.83        (CFS)       907.        281.        204.        204.
                        (INCHES)     1.425       1.768       1.768       1.768
                         (AC-FT)      450.        558.        558.        558.

                      CUMULATIVE AREA =    5.92 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
131 KK      *     W103   *      CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
            *            *
            **************
                          COMBINE HYDROGRAPHS FROM CP 104 AND WS 3

133 HC          HYDROGRAPH COMBINATION
                      ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE
```

```
                                                                                  ***
     ***              ***              ***              ***              ***

                        HYDROGRAPH AT STATION     W103

PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                    6-HR        24-HR        72-HR      33.17-HR
  12224.      13.33        (CFS)      5218.        1637.        1184.        1184.
                         (INCHES)     1.530        1.919        1.919        1.919
                          (AC-FT)     2588.        3246.        3246.        3246.

                         CUMULATIVE AREA =    31.72 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 134 KK     *     RW103  *      ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
            *            *
            **************
                                ROUTE THE HYDROGRAPH TO POWERLINE DAM

               HYDROGRAPH ROUTING DATA

 136 RM          MUSKINGUM ROUTING
                       NSTPS          1 NUMBER OF SUBREACHES
                       AMSKK        .38 MUSKINGUM K
                           X        .30 MUSKINGUM X
                                                                                  ***
     ***              ***              ***              ***              ***

                        HYDROGRAPH AT STATION    RW103

PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                    6-HR        24-HR        72-HR      33.17-HR
  11669.      13.67        (CFS)      5205.        1637.        1184.        1184.
                         (INCHES)     1.526        1.919        1.919        1.919
                          (AC-FT)     2581.        3246.        3246.        3246.

                         CUMULATIVE AREA =    31.72 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 137 KK     *       PLD  *      CONCENTRATION PT. AT POWERLINE DAM
            *            *
            **************
                               COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN

 139 HC          HYDROGRAPH COMBINATION
```

```
                    ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

     ***            ***            ***            ***            ***

                     HYDROGRAPH AT STATION      PLD

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     33.17-HR
  17913.     13.83        (CFS)    7536.       2369.       1714.        1714.
                        (INCHES)   1.513       1.902       1.902        1.902
                         (AC-FT)   3737.       4699.       4699.        4699.

                         CUMULATIVE AREA =   46.32 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
140 KK      *      RES   *      RESERVOIR ROUTING THROUGH THE STRUCTURE
            *            *
            **************
                           RESERVOIR RATING CURVE

               HYDROGRAPH ROUTING DATA

142 RS           STORAGE ROUTING
                      NSTPS            1  NUMBER OF SUBREACHES
                       ITYP         ELEV  TYPE OF INITIAL CONDITION
                      RSVRIC     1568.20  INITIAL CONDITION
                           X         .00 WORKING R AND D COEFFICIENT

143 SV             STORAGE           .0      175.0      380.0      700.0     1100.0     1600.0     2175.0     2875.0     3675.0     4200.0
                                 4600.0     5525.0     6725.0     7925.0

145 SQ           DISCHARGE           0.         0.        92.       106.      119.       130.       141.       150.       159.       165.
                                   668.      4426.     11084.     20092.

147 SE           ELEVATION      1568.10    1568.20    1570.00    1572.10   1574.10    1576.10    1578.10    1580.10    1582.10    1583.30
                                1584.10    1586.10    1588.10    1590.10

149 SS           SPILLWAY
                       CREL     1583.30  SPILLWAY CREST ELEVATION
                      SPWID         .00  SPILLWAY WIDTH
                       COQW         .00  WEIR COEFFICIENT
                       EXPW        1.50  EXPONENT OF HEAD

150 ST           TOP OF DAM
                      TOPEL     1589.10  ELEVATION AT TOP OF DAM
                     DAMWID    13358.00  DAM WIDTH
                       COQD        2.20  WEIR COEFFICIENT
                       EXPD        1.50  EXPONENT OF HEAD

                                                                  ***

                                   COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

                                         (INCLUDING FLOW OVER DAM)
```

STORAGE	.00	175.00	380.00	700.00	1100.00	1600.00	2175.00	2875.00	3675.00	4200.00
OUTFLOW	.00	.00	92.00	106.00	119.00	130.00	141.00	150.00	159.00	165.00
ELEVATION	1568.10	1568.20	1570.00	1572.10	1574.10	1576.10	1578.10	1580.10	1582.10	1583.30

STORAGE	4600.00	5525.00	6725.00	7925.00
OUTFLOW	668.00	4426.00	11084.00	49479.60
ELEVATION	1584.10	1586.10	1588.10	1590.10

*** *** *** *** ***

HYDROGRAPH AT STATION RES

PEAK OUTFLOW IS 602. AT TIME 25.67 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
602.	25.67	(CFS)	539.	286.	207.	207.
		(INCHES)	.108	.230	.230	.230
		(AC-FT)	267.	568.	568.	568.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	33.17-HR
4547.	25.67	4497.	3388.	2500.	2500.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	33.17-HR
1583.99	25.67	1583.90	1580.42	1577.04	1577.04

CUMULATIVE AREA = 46.32 SQ MI

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	15	1336.	12.00	287.	88.	64.	1.71		
ROUTED TO	R15	1833.	12.17	287.	88.	64.	1.71		
HYDROGRAPH AT	14	1338.	12.00	187.	57.	42.	1.16		
HYDROGRAPH AT	16	2053.	12.17	405.	125.	90.	2.24		
3 COMBINED AT	114	4956.	12.17	879.	271.	196.	5.11		
ROUTED TO	R114	4584.	12.33	879.	271.	196.	5.11		
HYDROGRAPH AT	13	2012.	12.00	254.	78.	57.	1.35		
2 COMBINED AT	113	5215.	12.33	1131.	349.	253.	6.46		
ROUTED TO	R113	4984.	12.50	1131.	349.	253.	6.46		
HYDROGRAPH AT	12	1783.	12.17	298.	93.	67.	1.43		
2 COMBINED AT	112	6057.	12.33	1427.	442.	320.	7.89		
ROUTED TO	R112	5980.	12.50	1427.	442.	320.	7.89		
HYDROGRAPH AT	11	720.	12.00	114.	35.	25.	.63		
HYDROGRAPH AT	17	254.	12.00	34.	10.	8.	.21		
3 COMBINED AT	111	6412.	12.33	1574.	487.	353.	8.73		
ROUTED TO	RD111	5880.	13.00	1573.	487.	353.	8.73		
HYDROGRAPH AT	2A	904.	12.17	147.	45.	33.	1.08		
2 COMBINED AT	CP2A	6010.	13.00	1718.	532.	385.	9.81		
ROUTED TO	RR2A	5544.	14.00	1713.	532.	385.	9.81		
HYDROGRAPH AT	2B	1697.	13.00	640.	200.	145.	4.79		
2 COMBINED AT	102	6408.	14.00	2339.	733.	530.	14.60		
HYDROGRAPH AT	5	3238.	12.67	957.	296.	214.	5.52		
ROUTED TO	R5	2893.	13.17	955.	296.	214.	5.52		
HYDROGRAPH AT	4	5079.	13.33	2236.	704.	509.	13.11		
HYDROGRAPH AT	6	2905.	13.00	1138.	355.	257.	7.17		
3 COMBINED AT	104	10808.	13.17	4328.	1355.	981.	25.80		
ROUTED TO	R104	10473.	13.50	4323.	1355.	981.	25.80		
HYDROGRAPH AT	3	2704.	12.83	907.	281.	204.	5.92		

2 COMBINED AT	W103	12224.	13.33	5218.	1637.	1184.	31.72		
ROUTED TO	RW103	11669.	13.67	5205.	1637.	1184.	31.72		
2 COMBINED AT	PLD	17913.	13.83	7536.	2369.	1714.	46.32		
ROUTED TO	RES	602.	25.67	539.	286.	207.	46.32	1583.99	25.67

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	0.	165.	15588.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1583.99	.00	4547.	602.	.00	25.67	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING        29-DEC-88        14:08:21

PROCESS 63 TERMINATED

ELAPSED TIME  0:00:26, CPU TIME  00:00:00.089, I/O BLOCKS  61
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF       29-DEC-88        14:08:20

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix B

HEC-1 Output

Areal Reduction
using the NOAA Method

```
+OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO

$   $  $   $  $$$$          $   $   $$$   $   $
$   $  $   $  $   $         $   $  $   $  $$ $$
$   $   $ $   $   $         $   $  $      $ $ $
$$$$$    $    $   $         $ $ $   $$$   $ $ $
$   $    $    $   $         $ $ $       $  $   $
$   $    $    $   $    $$   $$ $$  $   $  $   $
$   $    $    $$$$     $$   $   $   $$$   $   $

DEST=HYD.WSM  USER=HYD.WSM  QUEUE=LPT  DEVICE=QLPB
SEQ=493  QPRI=128  CPL=132  LPP=66  COPIES=1  PAGES=164

CREATED:  30-DEC-88  07:16:06
ENQUEUED:  05-JAN-89  14:28:26
PRINTING:  05-JAN-89  14:29:00

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:REDNOAA.OUT

$$$$   $$$$$  $$$$   $   $   $$$     $       $          $$$   $   $  $$$$$
$   $  $      $   $  $$  $  $   $   $ $     $ $         $   $  $   $    $
$   $  $      $   $  $ $ $  $   $   $   $   $   $        $   $  $   $    $
$$$$   $$$$   $   $  $  $$  $   $   $   $   $   $        $   $  $   $    $
$ $    $      $   $  $   $  $   $   $$$$$   $$$$$        $   $  $   $    $
$  $   $      $   $  $   $  $   $   $   $   $   $   $$   $   $  $   $    $
$   $  $$$$$  $$$$   $   $   $$$    $   $   $   $   $$    $$$    $$$     $

+OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
```

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00  30-DEC-88        7:16:06
QPRI=128        SEQ=396
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?46.CLI.00001.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.396

--------
LAST MESSAGE CHANGE      17-NOV-88        14:55:52


                ***************          *******        ***********
                ************        ************        ************
               ***                 ****      ***         ***      ***
              *******             ***                   ***      ***
             ******              ***                   ***      ***
            ***                 ***      ***          ***      ***
          ****                  ***********         ************
        ******                   *******          ************


--------
MOST RECENT LOGON        30-DEC-88        7:13:20

AOS/VS CLI   REV 07.62.00.00    30-DEC-88        7:16:09
) SEARCHLIST :UTIL,:MACROS,:UDD:HYD.WSM,:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM,OWARE
)
)
) LISTFILE REDNOAA.OUT
) DATAFILE REDNOAA.DAT
) SEA :UTIL:HEC1.DIR,[!SEA]
) X HEC1_START
```

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             FEBRUARY 1981             *
*           REVISED 31 JAN 85           *
*                                       *
* RUN DATE12/30/1988   TIME 7:16:11 *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
* (916) 440-3285 OR (FTS) 448-3285   *
*                                       *
*****************************************
```

```
X     X  XXXXXXX   XXXXX            X
X     X  X        X     X          XX
X     X  X        X                 X
XXXXXXX  XXXX     X        XXXXX    X
X     X  X        X                 X
X     X  X        X     X           X
X     X  XXXXXXX   XXXXX           XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID      WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID      CONVERSION OF MODEL FROM TR-20
  3           ID                    100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
  4           ID                    DEVELOPMENT, MUSKINGUM ROUTING
  5           ID         CONDITIONS:    1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                           POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                        2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                           AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                           LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                        3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                        4: ADJUSTED WATERSHED AREAS.
 12           ID                        5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                        6: NO MODIFICATIONS TO POWERLINE F.R.S.
 14           ID                        7: AREAL REDUCTION BASED ON NOAA ATLAS 2, 1973.
              *DIAGRAM
 15           IT       10        0        0      200
 16           IO        5
 17           IN       15
 18           JD     3.85      .01
 19           PC        0     .002     .005     .008     .011     .014     .017     .020     .023     .026
 20           PC     .029     .032     .035     .038     .041     .044     .048     .052     .056     .060
 21           PC     .064     .068     .072     .076     .080     .085     .090     .095     .100     .105
 22           PC     .110     .115     .120     .126     .133     .140     .147     .155     .163     .172
 23           PC     .181     .191     .203     .218     .236     .257     .283     .387     .663     .707
 24           PC     .735     .758     .766     .791     .804     .815     .825     .834     .842     .849
 25           PC     .856     .863     .869     .875     .881     .887     .893     .898     .903     .908
 26           PC     .913     .918     .922     .926     .930     .934     .938     .942     .946     .950
 27           PC     .953     .956     .959     .962     .965     .968     .971     .974     .977     .980
 28           PC     .983     .986     .992     .995     .998    1.000    1.000    1.000    1.000    1.000
 29           JD     3.80       10
 30           JD     3.72       30
 31           JD     3.67       50

 32           KK       15  WATERSHED 15
 33           KM       HYDROGRAPH FOR WATERSHED 15
 34           BA     1.76
 35           LS        0       80
 36           UD      .18

 37           KK      R15 ROUTE HYDROGRAPH FROM WS 15
 38           KM      ROUTE HYDROGRAPH FROM WATERSHED 15
 39           RM        1      .11       .3

 40           KK       14 WATERSHED 14
 41           KM      HYDROGRAPH FOR WATERSHED 14
 42           BA     1.11
 43           LS        0       79
 44           UD      .15

 45           KK       16 WATERSHED 16
 46           KM      HYDROGRAPH FOR WATERSHED 16
 47           BA     2.16
 48           LS        0       82
 49           UD      .35
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  50          KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
  51          KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
  52          HC       3

  53          KK    R114 ROUTE CP 114
  54          KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
  55          RM       1      .17       .3

  56          KK      13 WATERSHED 13
  57          KM     HYDROGRAPH FOR WATERSHED 13
  58          BA    1.29
  59          LS       0       83
  60          UD    .126

  61          KK     113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
  62          KM     COMBINE HYDROGRAPHS CP 114 AND WS 13
  63          HC       2

  64          KK    R113 ROUTE CP 113 TO CP 112
  65          KM     ROUTE HYDROGRAPH FOR CP 113
  66          RM       1      .19       .3

  67          KK      12 WATERSHED 12
  68          KM     HYDROGRAPH FOR WATERSHED 12
  69          BA    1.32
  70          LS       0       86
  71          UD     .27

  72          KK     112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
  73          KM     COMBINE HYDROGRAPH FROM CP 113 AND WS 12
  74          HC       2

  75          KK    R112 ROUTE CP 112 TO CP 111
  76          KM     ROUTE HYDROGRAPH CP 112 TO CP 111
  77          RM       1      .07       .3

  78          KK      11 WATERSHED 11
  79          KM     HYDROGRAPH FOR WATERSHED 11
  80          BA     .70
  81          LS       0       89
  82          UD    .186

  83          KK      17 WATERSHED 17
  84          KM     HYDROGRAPH FOR WATERSHED 17
  85          BA     .37
  86          LS       0       79
  87          UD    .138

  88          KK      10   WATERSHED 10
  89          KM     HYDROGRAPH FOR WATERSHED 10
  90          BA     .54
  91          LS       0       79
  92          UD     .14
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  93          KK      111 CONCENTRATION PT. 111
  94          KM      COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
  95          HC        4

  96          KK    RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  97          KM      ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  98          RM        5      .64       .3

  99          KK       2A  WATERSHED 2A
 100          KM       HYDROGRAPH FOR WATERSHED 2A
 101          BA     1.09
 102          LS        0       82
 103          UD      .22

 104          KK     CP2A  CONCENTRATION POINT 2A
 105          KM     COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
 106          HC        2

 107          KK   DIVERT     POINT OF DIVERSION FOR WEEKES WASH
 108          DT     FLOW
 109          DI        0     6500     7000     9000    10000    15000
 110          DQ        0        0      260     1300     1880     4600

 111          KK     RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
 112          KM      ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 113          RM        2      .42       .3

 114          KK       2BE WATERSHED 2B EAST
 115          KM       HYDROGRAPH FOR WATERSHED 2B EAST
 116          BA     1.22
 117          LS        0       82
 118          UD      .48

 119          KK     1C2B  CONCENTRATION POINT NORTH OF FREEWAY
 120          KM      CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 121          HC        2

 122          KK   DET2BE    ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 123          KM       ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 124          RS        1    ELEV     1636
 125          SV        0      6.0     13.0     29.0     47.0     69.0     93.0    122.0    153.0    184.0
 126          SV      217      239
 127          SE     1636     1637     1638     1640     1642     1644     1646     1648     1650     1652
 128          SE     1654     1655
 129          SQ        0       22      194      584     1050     1604     2236     2900     3534     4408
 130          SQ     4622     4860
 131          ST     1650      320      2.2      1.5

 132          KK    FRWAY
 133          KM     DIVERT ALL FLOW THAT GO UNDER THE ROAD
 134          DT    SPILL
 135          DI        0     3665     5000    10000    15000
 136          DQ        0        0     1335     6335    11335
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 137          KK     CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 138          KM      ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 139          RM        1       .1       .3

 140          KK     WASH   ROUTE FLOWS THROUGH THE WASH
 141          KM       ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 142          RM        2      .50       .3

 143          KK   RSPILL
 144          KM      RETRIEVE FLOW DEIVERTED FROM THE EMERGENCY SPILLWAY
 145          DR    SPILL

 146          KK    IDAHO
 147          KM     ROUTE THE RETRIEVED FLOW DOWN IDAYO ROAD.
 148          RM        1       .1       .3

 149          KK       WW
 150          KM     COMBINE ALL THE FLOW FROM THE FREEWAY
 151          HC        2

 152          KK      RWW
 153          KM     ROUTE THE FLOW TO POWERLINE F.R.S.
 154          RM        4      .98       .3

 155          KK     2BWW  WATERSHED 2B WEST, WEST
 156          KM       HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 157          BA      .45
 158          LS        0       82
 159          UD       .4

 160          KK     2BWE  WATERSHED 2B WEST, EAST
 161          KM      RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 162          KO        1
 163          BA      .70
 164          LS        0       82
 165          UD       .3

 166          KK   DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 167          KM       ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 168          RS        1     ELEV  1623.5
 169          SV        0       .6      8.3     17.5     28.2     36.0     48.6
 170          SE   1623.5   1624.0   1626.0   1628.0   1630.0   1632.0   1634.0
 171          SQ        0        0       31       93      135      169      208
 172          ST   1630.0      110      2.2      1.5

 173          KK     CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 174          KM     COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 175          HC        2
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 176          KK     NDIV
 177          DT     EXIT
 178          DI        0     1218     5000    10000
 179          DQ        0        0     3782     8782

 180          KK   NDRCUT  ROUTE THROUGH THE FREEWAY
 181          KM     ROUTE COMBINED FLOW THROUGH 3 BBL. 6 X 8 BOX CULVERTS
 182          RS        1     ELEV  1622.6
 183          SV        0      .02      .16     1.12     4.17    25.42
 184          SE   1622.6   1623.0   1624.0   1626.0   1628.0   1630.0
 185          SQ        0        0      101      372      738     1111
 186          ST   1630.0     2875      2.2      1.5

 187          KK     R2BW  ROUTE TO CP102
 188          KM      ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 189          RM        2      .40       .3

 190          KK      2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 191          KM      HYDROGRAPH FOR WATERSHED 2B SOUTH
 192          BA     1.91
 193          LS        0       80
 194          UD      .32

 195          KK      102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 196          KM      COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 197          HC        3

 198          KK        5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 199          KM      HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 200          BA     5.65
 201          LS        0       85
 202          UD      .71

 203          KK       R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 204          KM       ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 205          RM        1      .07       .3

 206          KK        4 WATERSHED 4
 207          KM       HYDROGRAPH FOR WATERSHED 4
 208          BA    11.85
 209          LS        0       86
 210          UD     1.30

 211          KK      104  CONCENTRATION POINT 104
 212          KM      COMBINE HYDROGRAPHS AT CP 104
 213          HC        2

 214          KK     R104
 215          KM     RCUTE CP 104 TO 106
 216          RM        2      .50       .3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 217          KK        7  WATERSHED 7
 218          KM     HYDROGRAPH FOR WATERSHED 7
 219          BA      .61
 220          LS        0       86
 221          UD       .3

 222          KK        6 WATERSHED 6
 223          KM       HYDROGRAPH FOR WATERSHED 6
 224          BA     7.86
 225          LS        0       83
 226          UD     1.08

 227          KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 228          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 229          HC        3

 230          KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 231          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 232          RM        1      .27       .3

 233          KK       3N WATERSHED 3N
 234          KM       HYDROGRAPH FOR WATERSHED 3N
 235          BA     2.89
 236          LS        0       85
 237          UD      .41

 238          KK     CULV   ROUTE FLOWS THROUGH CULVERTS
 239          KM      ROUTE FLOWS THROUGH THE CULVERTS
 240          RS      1.0     ELEV     1665
 241          SV        0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
 242          SE     1665   1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 243          SQ        0      119      375      688     1063     1462     1938     2375     2875     3375

 244          KK    RCULV  ROUTE FLOWS TO W103
 245          KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
 246          RM        2       .5       .3

 247          KK       3S  WATERSHED 3 SOUTH
 248          KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
 249          BA     2.39
 250          LS        0       85
 251          UD     .436

 252          KK      103
 253          HC        2

 254          KK       3A   WATERSHED 3A
 255          KM      HYDROGRAPH FOR WATERSHED 3A
 256          BA     1.20
 257          LS        0       86
 258          UD       .4
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 259          KK   CP103
 260          KM     CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 261          HC       2

 262          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 263          KM      COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 264          HC       2

 265          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 266          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 267          RM       1     .16      .3

 268          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 269          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 270          KO       3
 271          HC       2

 272          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 273          KM     RESERVOIR RATING CURVE
 274          RS       1    ELEV  1568.2
 275          SV       0     175     380     700    1100    1600    2175    2875    3675    4200
 276          SV    4600    5525    6725    7925
 277          SQ       0      75      92     106     119     130     141     150     159     165
 278          SQ    1228    7360   16800   27280
 279          SE  1568.1  1568.2  1570.0  1572.1  1574.1  1576.1  1578.1  1580.1  1582.1  1583.3
 280          SE  1584.1  1586.1  1588.1  1590.1
 281          SS  1583.3       0       0       0
 282          ST  1539.1   13358     2.2     1.5
 283          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW
  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

  32          15
               V
               V
  37         R15
               .
               .
  40           .          14
               .           .
               .           .
  45           .           .          16
               .           .           .
               .           .           .
  50         114..........................
               V
               V
  53        R114
               .
               .
  56           .          13
               .           .
               .           .
  61         113............
               V
               V
  64        R113
               .
               .
  67           .          12
               .           .
               .           .
  72         112............
               V
               V
  75        R112
               .
               .
  78           .          11
               .           .
               .           .
  83           .           .          17
               .           .           .
               .           .           .
  88           .           .           .          1C
               .           .           .           .
               .           .           .           .
  93         111......................................
               V
               V
  96       RD111
               .
               .
  99           .          2A
               .           .
               .           .
 104        CP2A............
               .
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108          .------->     FLOW
107     DIVERT
             V
             V
111       RR2A
             .
             .
114          .          23E
             .           .
             .           .
119       102B............
             V
             V
122     DET2BE
             .
             .
134          .------->   SPILL
132      FPWAY
             V
             V
137       CHAN
             V
             V
140       WASH
             .
             .
145          .           .<-------   SPILL
143          .      RSPILL
             .           V
             .           V
146          .       IDAHO
             .           .
             .           .
149         WW............
             V
             V
152        RWW
             .
             .
155          .        2BWW
             .           .
             .           .
160          .           .        2BWE
             .           .           V
             .           .           V
166          .           .      DET2BW
             .           .           .
             .           .           .
173          .        C004............
             .           .
             .           .
177          .           .------->    EXIT
176          .        NDIV
             .           V
             .           V
180          .      NDROUT
             .           V
             .           V
187          .        R2BW
             .           .
             .           .
190          .           .         2BS
```

```
                .          .          .
                .          .          .
195          102.......................
                .
                .
198             .          5
                .          V
                .          V
203             .         R5
                .          .
                .          .
206             .          .          4
                .          .          .
                .          .          .
211             .        104...........
                .          V
                .          V
214             .       R104
                .          .
                .          .
217             .          .          7
                .          .          .
                .          .          .
222             .          .          .          6
                .          .          .          .
                .          .          .          .
227             .        106........................
                .          V
                .          V
230             .       R106
                .          .
                .          .
233             .          .         3N
                .          .          V
                .          .          V
238             .          .       CULV
                .          .          V
                .          .          V
244             .          .      RCULV
                .          .          .
                .          .          .
247             .          .          .         3S
                .          .          .          .
                .          .          .          .
252             .          .        103...........
                .          .          .
                .          .          .
254             .          .          .         3A
                .          .          .          .
                .          .          .          .
259             .          .     CP103............
                .          .          .
                .          .          .
262             .       W103...........
                .          V
                .          V
265             .      RW103
                .          .
                .          .
268          PLD............
                V
                V
272          RES
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*          REVISED 31 JAN 85           *
*                                      *
*  RUN DATE12/30/1988   TIME 7:16:21 * *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
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                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                                 100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
                                 DEVELOPMENT, MUSKINGUM ROUTING
                       CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                        POINT OF WEEKES WASH AT JUNCTION ROAD.
                                     2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                        AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                        LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                     3: SUPERSTITION FREEWAY IN PLACE.
                                     4: ADJUSTED WATERSHED AREAS.
                                     5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                     6: NO MODIFICATIONS TO POWERLINE F.R.S.
                                     7: AREAL REDUCTION BASED ON NOAA ATLAS 2, 1973.

16 IO          OUTPUT CONTROL VARIABLES
                     IPRNT            5  PRINT CONTROL
                     IPLOT            0  PLOT CONTROL
                     QSCAL           0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN           10  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME         0000  STARTING TIME
                        NQ          200  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      2    0  ENDING DATE
                    NDTIME         0910  ENDING TIME

                 COMPUTATION INTERVAL     .17 HOURS
                      TOTAL TIME BASE   33.17 HOURS

        ENGLISH UNITS
             DRAINAGE AREA          SQUARE MILES
             PRECIPITATION DEPTH    INCHES
             LENGTH, ELEVATION      FEET
             FLOW                   CUBIC FEET PER SECOND
             STORAGE VOLUME         ACRE-FEET
             SURFACE AREA           ACRES
             TEMPERATURE            DEGREES FAHRENHEIT

18 JD          INDEX STORM NO. 1
                      STRM        3.65  PRECIPITATION DEPTH
                      TRDA         .01  TRANSPOSITION DRAINAGE AREA

19 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
```

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.01	.02	.02	.07
.13	.18	.03	.02	.02	.02	.01	.01	.02	.01
.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00							

29 JD INDEX STORM NO. 2

STRM 3.80 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.01	.02	.02	.07
.13	.18	.03	.02	.02	.02	.01	.01	.02	.01
.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00							

30 JD INDEX STORM NO. 3

STRM 3.72 PRECIPITATION DEPTH

TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.01	.02	.02	.07
.13	.18	.03	.02	.02	.02	.01	.01	.02	.01
.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00							

31 JD INDEX STORM NO. 4

STRM 3.67 PRECIPITATION DEPTH

TRDA 50.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

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.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .01     .01     .01     .01     .01     .01
.01     .01     .01     .01     .01     .01     .01     .02     .02     .07
.13     .18     .03     .02     .02     .02     .01     .01     .02     .01
.01     .01     .01     .01     .01     .01     .01     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
 160 KK       *     2BWE   *        WATERSHED 2B WEST, EAST
              *            *
              **************

 162 KO           OUTPUT CONTROL VARIABLES
                        IPRNT          1  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE

                 SUBBASIN RUNOFF DATA

 163 BA           SUBBASIN CHARACTERISTICS
                        TAREA        .70  SUBBASIN AREA

 164 LS           SCS LOSS RATE
                        STRTL        .44  INITIAL ABSTRACTION
                       CRVNBR      82.00  CURVE NUMBER
                        RTIMP        .00  PERCENT IMPERVIOUS AREA

 165 UD           SCS DIMENSIONLESS UNITGRAPH
                         TLAG        .30  LAG
```

***

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

UNIT HYDROGRAPH
11 END-OF-PERIOD ORDINATES

325. 864. 762. 385. 193. 94. 46. 23. 11. 6.
2.

****

HYDROGRAPH AT 2BWE
TRANSPOSITION AREA .0 SQ MI

****

DA	MON	HRMN	CRD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	*	1		1640	101	.01	.00	.01	34.
1		0010	2	.01	.01	.00	0.	*	1		1650	102	.01	.00	.01	32.
1		0020	3	.01	.01	.00	0.	*	1		1700	103	.01	.00	.01	30.
1		0030	4	.01	.01	.00	0.	*	1		1710	104	.01	.00	.01	29.
1		0040	5	.01	.01	.00	0.	*	1		1720	105	.01	.00	.01	29.
1		0050	6	.01	.01	.00	0.	*	1		1730	106	.01	.00	.01	29.
1		0100	7	.01	.01	.00	0.	*	1		1740	107	.01	.00	.01	29.
1		0110	8	.01	.01	.00	0.	*	1		1750	108	.01	.00	.01	28.
1		0120	9	.01	.01	.00	0.	*	1		1800	109	.01	.00	.01	27.
1		0130	10	.01	.01	.00	0.	*	1		1810	110	.01	.00	.01	25.
1		0140	11	.01	.01	.00	0.	*	1		1820	111	.01	.00	.01	24.
1		0150	12	.01	.01	.00	0.	*	1		1830	112	.01	.00	.01	24.
1		0200	13	.01	.01	.00	0.	*	1		1840	113	.01	.00	.01	23.
1		0210	14	.01	.01	.00	0.	*	1		1850	114	.01	.00	.01	23.
1		0220	15	.01	.01	.00	0.	*	1		1900	115	.01	.00	.01	23.
1		0230	16	.01	.01	.00	0.	*	1		1910	116	.01	.00	.01	23.
1		0240	17	.01	.01	.00	0.	*	1		1920	117	.01	.00	.01	23.
1		0250	18	.01	.01	.00	0.	*	1		1930	118	.01	.00	.01	23.
1		0300	19	.01	.01	.00	0.	*	1		1940	119	.01	.00	.01	23.
1		0310	20	.01	.01	.00	0.	*	1		1950	120	.01	.00	.01	23.
1		0320	21	.01	.01	.00	0.	*	1		2000	121	.01	.00	.01	22.
1		0330	22	.01	.01	.00	0.	*	1		2010	122	.01	.00	.01	20.
1		0340	23	.01	.01	.00	0.	*	1		2020	123	.01	.00	.01	19.
1		0350	24	.01	.01	.00	0.	*	1		2030	124	.01	.00	.01	18.
1		0400	25	.01	.01	.00	0.	*	1		2040	125	.01	.00	.01	18.
1		0410	26	.01	.01	.00	0.	*	1		2050	126	.01	.00	.01	18.
1		0420	27	.01	.01	.00	0.	*	1		2100	127	.01	.00	.01	18.
1		0430	28	.01	.01	.00	0.	*	1		2110	128	.01	.00	.01	18.
1		0440	29	.01	.01	.00	0.	*	1		2120	129	.01	.00	.01	18.
1		0450	30	.01	.01	.00	0.	*	1		2130	130	.01	.00	.01	18.
1		0500	31	.01	.01	.00	0.	*	1		2140	131	.01	.00	.01	18.
1		0510	32	.01	.01	.00	0.	*	1		2150	132	.01	.00	.01	18.
1		0520	33	.01	.01	.00	0.	*	1		2200	133	.01	.00	.01	18.
1		0530	34	.01	.01	.00	0.	*	1		2210	134	.01	.00	.01	18.
1		0540	35	.01	.01	.00	0.	*	1		2220	135	.01	.00	.01	18.
1		0550	36	.01	.01	.00	0.	*	1		2230	136	.01	.00	.01	18.
1		0600	37	.01	.01	.00	0.	*	1		2240	137	.01	.00	.01	18.
1		0610	38	.01	.01	.00	0.	*	1		2250	138	.01	.00	.01	19.
1		0620	39	.01	.01	.00	0.	*	1		2300	139	.02	.00	.01	23.
1		0630	40	.01	.01	.00	0.	*	1		2310	140	.01	.00	.01	26.
1		0640	41	.01	.01	.00	0.	*	1		2320	141	.01	.00	.01	24.
1		0650	42	.01	.01	.00	0.	*	1		2330	142	.01	.00	.01	21.
1		0700	43	.01	.01	.00	0.	*	1		2340	143	.01	.00	.00	18.
1		0710	44	.01	.01	.00	0.	*	1		2350	144	.00	.00	.00	15.
1		0720	45	.01	.01	.00	0.	*	2		0000	145	.00	.00	.00	11.

1	0730	46	.01	.01	.00	0.	*	2	0010	146	.00	.00	.00	6.
1	0740	47	.01	.01	.00	0.	*	2	0020	147	.00	.00	.00	3.
1	0750	48	.01	.01	.00	0.	*	2	0030	148	.00	.00	.00	1.
1	0800	49	.01	.01	.00	0.	*	2	0040	149	.00	.00	.00	1.
1	0810	50	.02	.01	.00	0.	*	2	0050	150	.00	.00	.00	0.
1	0820	51	.02	.02	.00	1.	*	2	0100	151	.00	.00	.00	0.
1	0830	52	.02	.02	.00	1.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	2.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	3.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	3.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	4.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	5.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	6.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	7.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	9.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	10.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.03	.02	.01	11.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	13.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	15.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	18.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	23.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.05	.03	.01	28.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	34.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	41.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.07	.04	.03	50.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.27	.15	.12	90.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.49	.21	.28	230.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.71	.22	.49	509.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	716.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	602.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.06	398.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.05	275.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	197.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	140.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	108.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	107.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.03	105.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	91.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	76.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.03	.01	.02	67.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	61.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	56.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	52.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	48.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	44.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	42.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	41.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	40.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.02	.00	.01	38.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.02	.00	.01	36.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.02	.00	.01	35.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.02	.00	.01	35.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.02	.00	.01	34.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.02	.00	.01	34.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.02	.00	.01	34.	*	2	0910	200	.00	.00	.00	0.
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TOTAL RAINFALL = 3.85, TOTAL LOSS = 1.77, TOTAL EXCESS = 2.08

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
716.	12.17	(CFS)	127.	39.	28.	28.

(INCHES)	1.682	2.075	2.075	2.075
(AC-FT)	63.	77.	77.	77.

CUMULATIVE AREA = .70 SQ MI

HYDROGRAPH AT 2BWE
TRANSPOSITION AREA 10.0 SQ MI

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	1		1640	101	.01	.00	.01	33.
1		0010	2	.01	.01	.00	0.	1		1650	102	.01	.00	.01	31.
1		0020	3	.01	.01	.00	0.	1		1700	103	.01	.00	.01	30.
1		0030	4	.01	.01	.00	0.	1		1710	104	.01	.00	.01	29.
1		0040	5	.01	.01	.00	0.	1		1720	105	.01	.00	.01	29.
1		0050	6	.01	.01	.00	0.	1		1730	106	.01	.00	.01	28.
1		0100	7	.01	.01	.00	0.	1		1740	107	.01	.00	.01	28.
1		0110	8	.01	.01	.00	0.	1		1750	108	.01	.00	.01	28.
1		0120	9	.01	.01	.00	0.	1		1800	109	.01	.00	.01	27.
1		0130	10	.01	.01	.00	0.	1		1810	110	.01	.00	.01	25.
1		0140	11	.01	.01	.00	0.	1		1820	111	.01	.00	.01	24.
1		0150	12	.01	.01	.00	0.	1		1830	112	.01	.00	.01	23.
1		0200	13	.01	.01	.00	0.	1		1840	113	.01	.00	.01	23.
1		0210	14	.01	.01	.00	0.	1		1850	114	.01	.00	.01	23.
1		0220	15	.01	.01	.00	0.	1		1900	115	.01	.00	.01	23.
1		0230	16	.01	.01	.00	0.	1		1910	116	.01	.00	.01	23.
1		0240	17	.01	.01	.00	0.	1		1920	117	.01	.00	.01	23.
1		0250	18	.01	.01	.00	0.	1		1930	118	.01	.00	.01	23.
1		0300	19	.01	.01	.00	0.	1		1940	119	.01	.00	.01	23.
1		0310	20	.01	.01	.00	0.	1		1950	120	.01	.00	.01	22.
1		0320	21	.01	.01	.00	0.	1		2000	121	.01	.00	.01	21.
1		0330	22	.01	.01	.00	0.	1		2010	122	.01	.00	.01	20.
1		0340	23	.01	.01	.00	0.	1		2020	123	.01	.00	.01	18.
1		0350	24	.01	.01	.00	0.	1		2030	124	.01	.00	.01	18.
1		0400	25	.01	.01	.00	0.	1		2040	125	.01	.00	.01	17.
1		0410	26	.01	.01	.00	0.	1		2050	126	.01	.00	.01	17.
1		0420	27	.01	.01	.00	0.	1		2100	127	.01	.00	.01	17.
1		0430	28	.01	.01	.00	0.	1		2110	128	.01	.00	.01	17.
1		0440	29	.01	.01	.00	0.	1		2120	129	.01	.00	.01	17.
1		0450	30	.01	.01	.00	0.	1		2130	130	.01	.00	.01	17.
1		0500	31	.01	.01	.00	0.	1		2140	131	.01	.00	.01	17.
1		0510	32	.01	.01	.00	0.	1		2150	132	.01	.00	.01	17.
1		0520	33	.01	.01	.00	0.	1		2200	133	.01	.00	.01	17.
1		0530	34	.01	.01	.00	0.	1		2210	134	.01	.00	.01	17.
1		0540	35	.01	.01	.00	0.	1		2220	135	.01	.00	.01	17.
1		0550	36	.01	.01	.00	0.	1		2230	136	.01	.00	.01	17.
1		0600	37	.01	.01	.00	0.	1		2240	137	.01	.00	.01	17.
1		0610	38	.01	.01	.00	0.	1		2250	138	.01	.00	.01	18.
1		0620	39	.01	.01	.00	0.	1		2300	139	.02	.00	.01	22.
1		0630	40	.01	.01	.00	0.	1		2310	140	.01	.00	.01	25.
1		0640	41	.01	.01	.00	0.	1		2320	141	.01	.00	.01	23.
1		0650	42	.01	.01	.00	0.	1		2330	142	.01	.00	.01	20.
1		0700	43	.01	.01	.00	0.	1		2340	143	.01	.00	.00	18.
1		0710	44	.01	.01	.00	0.	1		2350	144	.00	.00	.00	15.
1		0720	45	.01	.01	.00	0.	2		0000	145	.00	.00	.00	10.
1		0730	46	.01	.01	.00	0.	2		0010	146	.00	.00	.00	6.
1		0740	47	.01	.01	.00	0.	2		0020	147	.00	.00	.00	3.
1		0750	48	.01	.01	.00	0.	2		0030	148	.00	.00	.00	1.

1	0800	49	.01	.01	.00	0.	*	2	0040	149	.00	.00	.00	1.
1	0810	50	.02	.01	.00	0.	*	2	0050	150	.00	.00	.00	0.
1	0820	51	.02	.02	.00	1.	*	2	0100	151	.00	.00	.00	0.
1	0830	52	.02	.02	.00	1.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	2.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	2.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	3.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	4.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	5.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	6.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	7.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	8.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	9.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.03	.02	.01	11.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	12.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	14.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	17.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	22.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.05	.03	.01	27.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	33.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	40.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.07	.04	.03	49.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.26	.14	.12	88.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.48	.21	.27	224.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.70	.22	.48	497.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	702.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	590.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.05	390.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.04	270.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	193.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	137.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	106.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	105.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.03	103.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	89.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	75.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.03	.01	.02	66.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	60.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	55.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	51.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	47.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	44.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	41.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	40.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	39.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.02	.00	.01	38.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.02	.00	.01	36.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.02	.00	.01	35.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.02	.00	.01	34.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.02	.00	.01	34.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.02	.00	.01	34.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.02	.00	.01	34.	*	2	0910	200	.00	.00	.00	0.
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TOTAL RAINFALL = 3.80, TOTAL LOSS = 1.77, TOTAL EXCESS = 2.03

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
702.	12.17	(CFS)	124.	38.	28.	28.
		(INCHES)	1.649	2.033	2.033	2.033
		(AC-FT)	62.	76.	76.	76.

CUMULATIVE AREA = .70 SQ MI

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HYDROGRAPH AT 2BWE
TRANSPOSITION AREA 30.0 SQ MI

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DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	1		1640	101	.01	.00	.01	32.
1		0010	2	.00	.00	.00	0.	1		1650	102	.01	.00	.01	30.
1		0020	3	.01	.01	.00	0.	1		1700	103	.01	.00	.01	29.
1		0030	4	.01	.01	.00	0.	1		1710	104	.01	.00	.01	28.
1		0040	5	.01	.01	.00	0.	1		1720	105	.01	.00	.01	28.
1		0050	6	.01	.01	.00	0.	1		1730	106	.01	.00	.01	28.
1		0100	7	.01	.01	.00	0.	1		1740	107	.01	.00	.01	28.
1		0110	8	.01	.01	.00	0.	1		1750	108	.01	.00	.01	27.
1		0120	9	.01	.01	.00	0.	1		1800	109	.01	.00	.01	26.
1		0130	10	.01	.01	.00	0.	1		1810	110	.01	.00	.01	24.
1		0140	11	.01	.01	.00	0.	1		1820	111	.01	.00	.01	23.
1		0150	12	.01	.01	.00	0.	1		1830	112	.01	.00	.01	23.
1		0200	13	.01	.01	.00	0.	1		1840	113	.01	.00	.01	22.
1		0210	14	.01	.01	.00	0.	1		1850	114	.01	.00	.01	22.
1		0220	15	.01	.01	.00	0.	1		1900	115	.01	.00	.01	22.
1		0230	16	.01	.01	.00	0.	1		1910	116	.01	.00	.01	22.
1		0240	17	.01	.01	.00	0.	1		1920	117	.01	.00	.01	22.
1		0250	18	.01	.01	.00	0.	1		1930	118	.01	.00	.01	22.
1		0300	19	.01	.01	.00	0.	1		1940	119	.01	.00	.01	22.
1		0310	20	.01	.01	.00	0.	1		1950	120	.01	.00	.01	22.
1		0320	21	.01	.01	.00	0.	1		2000	121	.01	.00	.01	21.
1		0330	22	.01	.01	.00	0.	1		2010	122	.01	.00	.01	19.
1		0340	23	.01	.01	.00	0.	1		2020	123	.01	.00	.01	18.
1		0350	24	.01	.01	.00	0.	1		2030	124	.01	.00	.01	17.
1		0400	25	.01	.01	.00	0.	1		2040	125	.01	.00	.01	17.
1		0410	26	.01	.01	.00	0.	1		2050	126	.01	.00	.01	17.
1		0420	27	.01	.01	.00	0.	1		2100	127	.01	.00	.01	17.
1		0430	28	.01	.01	.00	0.	1		2110	128	.01	.00	.01	17.
1		0440	29	.01	.01	.00	0.	1		2120	129	.01	.00	.01	17.
1		0450	30	.01	.01	.00	0.	1		2130	130	.01	.00	.01	17.
1		0500	31	.01	.01	.00	0.	1		2140	131	.01	.00	.01	17.
1		0510	32	.01	.01	.00	0.	1		2150	132	.01	.00	.01	17.
1		0520	33	.01	.01	.00	0.	1		2200	133	.01	.00	.01	17.
1		0530	34	.01	.01	.00	0.	1		2210	134	.01	.00	.01	17.
1		0540	35	.01	.01	.00	0.	1		2220	135	.01	.00	.01	17.
1		0550	36	.01	.01	.00	0.	1		2230	136	.01	.00	.01	17.
1		0600	37	.01	.01	.00	0.	1		2240	137	.01	.00	.01	17.
1		0610	38	.01	.01	.00	0.	1		2250	138	.01	.00	.01	18.
1		0620	39	.01	.01	.00	0.	1		2300	139	.01	.00	.01	22.
1		0630	40	.01	.01	.00	0.	1		2310	140	.01	.00	.01	25.
1		0640	41	.01	.01	.00	0.	1		2320	141	.01	.00	.01	23.
1		0650	42	.01	.01	.00	0.	1		2330	142	.01	.00	.01	20.
1		0700	43	.01	.01	.00	0.	1		2340	143	.00	.00	.00	18.
1		0710	44	.01	.01	.00	0.	1		2350	144	.00	.00	.00	14.
1		0720	45	.01	.01	.00	0.	2		0000	145	.00	.00	.00	10.
1		0730	46	.01	.01	.00	0.	2		0010	146	.00	.00	.00	6.
1		0740	47	.01	.01	.00	0.	2		0020	147	.00	.00	.00	3.
1		0750	48	.01	.01	.00	0.	2		0030	148	.00	.00	.00	1.
1		0800	49	.01	.01	.00	0.	2		0040	149	.00	.00	.00	1.
1		0810	50	.01	.01	.00	0.	2		0050	150	.00	.00	.00	0.
1		0820	51	.02	.02	.00	0.	2		0100	151	.00	.00	.00	0.

1	0830	52	.02	.02	.00	1.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	1.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	2.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	3.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	3.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	4.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	5.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	6.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	7.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	9.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.02	.02	.00	10.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	11.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	13.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	16.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	20.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.04	.03	.01	25.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	31.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	38.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.06	.04	.02	47.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.26	.14	.11	84.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.47	.21	.26	215.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.68	.22	.46	479.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	678.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	571.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.05	377.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.04	261.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	187.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	133.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	103.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	102.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.03	101.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	86.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	73.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.02	.01	.02	64.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	58.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	53.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	49.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	46.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	42.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	40.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	39.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	38.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.01	.00	.01	37.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.01	.00	.01	35.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.01	.00	.01	34.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.01	.00	.01	33.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.01	.00	.01	33.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.01	.00	.01	33.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.01	.00	.01	33.	*	2	0910	200	.00	.00	.00	0.
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TOTAL RAINFALL = 3.72, TOTAL LOSS = 1.75, TOTAL EXCESS = 1.97

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
678.	12.17	(CFS)	120.	37.	27.	27.
		(INCHES)	1.595	1.966	1.966	1.966
		(AC-FT)	60.	73.	73.	73.

CUMULATIVE AREA = .70 SQ MI

HYDROGRAPH AT 2BWE
TRANSPOSITION AREA 50.0 SQ MI

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	1		1640	101	.01	.00	.01	32.
1		0010	2	.00	.00	.00	0.	1		1650	102	.01	.00	.01	30.
1		0020	3	.01	.01	.00	0.	1		1700	103	.01	.00	.01	28.
1		0030	4	.01	.01	.00	0.	1		1710	104	.01	.00	.01	28.
1		0040	5	.01	.01	.00	0.	1		1720	105	.01	.00	.01	27.
1		0050	6	.01	.01	.00	0.	1		1730	106	.01	.00	.01	27.
1		0100	7	.01	.01	.00	0.	1		1740	107	.01	.00	.01	27.
1		0110	8	.01	.01	.00	0.	1		1750	108	.01	.00	.01	27.
1		0120	9	.01	.01	.00	0.	1		1800	109	.01	.00	.01	26.
1		0130	10	.01	.01	.00	0.	1		1810	110	.01	.00	.01	24.
1		0140	11	.01	.01	.00	0.	1		1820	111	.01	.00	.01	23.
1		0150	12	.01	.01	.00	0.	1		1830	112	.01	.00	.01	22.
1		0200	13	.01	.01	.00	0.	1		1840	113	.01	.00	.01	22.
1		0210	14	.01	.01	.00	0.	1		1850	114	.01	.00	.01	22.
1		0220	15	.01	.01	.00	0.	1		1900	115	.01	.00	.01	22.
1		0230	16	.01	.01	.00	0.	1		1910	116	.01	.00	.01	22.
1		0240	17	.01	.01	.00	0.	1		1920	117	.01	.00	.01	22.
1		0250	18	.01	.01	.00	0.	1		1930	118	.01	.00	.01	22.
1		0300	19	.01	.01	.00	0.	1		1940	119	.01	.00	.01	22.
1		0310	20	.01	.01	.00	0.	1		1950	120	.01	.00	.01	22.
1		0320	21	.01	.01	.00	0.	1		2000	121	.01	.00	.01	20.
1		0330	22	.01	.01	.00	0.	1		2010	122	.01	.00	.01	19.
1		0340	23	.01	.01	.00	0.	1		2020	123	.01	.00	.01	18.
1		0350	24	.01	.01	.00	0.	1		2030	124	.01	.00	.01	17.
1		0400	25	.01	.01	.00	0.	1		2040	125	.01	.00	.01	17.
1		0410	26	.01	.01	.00	0.	1		2050	126	.01	.00	.01	17.
1		0420	27	.01	.01	.00	0.	1		2100	127	.01	.00	.01	17.
1		0430	28	.01	.01	.00	0.	1		2110	128	.01	.00	.01	16.
1		0440	29	.01	.01	.00	0.	1		2120	129	.01	.00	.01	16.
1		0450	30	.01	.01	.00	0.	1		2130	130	.01	.00	.01	16.
1		0500	31	.01	.01	.00	0.	1		2140	131	.01	.00	.01	16.
1		0510	32	.01	.01	.00	0.	1		2150	132	.01	.00	.01	17.
1		0520	33	.01	.01	.00	0.	1		2200	133	.01	.00	.01	17.
1		0530	34	.01	.01	.00	0.	1		2210	134	.01	.00	.01	17.
1		0540	35	.01	.01	.00	0.	1		2220	135	.01	.00	.01	17.
1		0550	36	.01	.01	.00	0.	1		2230	136	.01	.00	.01	17.
1		0600	37	.01	.01	.00	0.	1		2240	137	.01	.00	.01	17.
1		0610	38	.01	.01	.00	0.	1		2250	138	.01	.00	.01	18.
1		0620	39	.01	.01	.00	0.	1		2300	139	.01	.00	.01	21.
1		0630	40	.01	.01	.00	0.	1		2310	140	.01	.00	.01	24.
1		0640	41	.01	.01	.00	0.	1		2320	141	.01	.00	.01	22.
1		0650	42	.01	.01	.00	0.	1		2330	142	.01	.00	.01	20.
1		0700	43	.01	.01	.00	0.	1		2340	143	.00	.00	.00	17.
1		0710	44	.01	.01	.00	0.	1		2350	144	.00	.00	.00	14.
1		0720	45	.01	.01	.00	0.	2		0000	145	.00	.00	.00	10.
1		0730	46	.01	.01	.00	0.	2		0010	146	.00	.00	.00	6.
1		0740	47	.01	.01	.00	0.	2		0020	147	.00	.00	.00	3.
1		0750	48	.01	.01	.00	0.	2		0030	148	.00	.00	.00	1.
1		0800	49	.01	.01	.00	0.	2		0040	149	.00	.00	.00	1.
1		0810	50	.01	.01	.00	0.	2		0050	150	.00	.00	.00	0.
1		0820	51	.02	.02	.00	0.	2		0100	151	.00	.00	.00	0.
1		0830	52	.02	.02	.00	1.	2		0110	152	.00	.00	.00	0.
1		0840	53	.02	.02	.00	1.	2		0120	153	.00	.00	.00	0.
1		0850	54	.02	.02	.00	2.	2		0130	154	.00	.00	.00	0.

1	0900	55	.02	.02	.00	2.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	3.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	4.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	5.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	6.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	7.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	8.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.02	.02	.00	9.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	11.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	13.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	16.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	20.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.04	.03	.01	24.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	30.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	37.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.06	.04	.02	45.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.25	.14	.11	81.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.46	.21	.26	209.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.68	.22	.45	468.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	663.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	559.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.05	370.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.04	256.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	184.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	131.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	101.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	100.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.02	99.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	85.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	72.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.02	.01	.02	63.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	57.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	52.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	48.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	45.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	42.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	39.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	38.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	37.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.01	.00	.01	36.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.01	.00	.01	34.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.01	.00	.01	33.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.01	.00	.01	33.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.01	.00	.01	32.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.01	.00	.01	32.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.01	.00	.01	32.	*	2	0910	200	.00	.00	.00	0.
							*							

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TOTAL RAINFALL = 3.67, TOTAL LOSS = 1.75, TOTAL EXCESS = 1.92

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
663.	12.17	(CFS)	118.	36.	26.	26.
		(INCHES)	1.561	1.924	1.924	1.924
		(AC-FT)	58.	72.	72.	72.

CUMULATIVE AREA = .70 SQ MI

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INTERPOLATED HYDROGRAPH AT 2BWE

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0820	51	1.	1		1640	101	33.	2		0100	151	0.
1		0010	2	0.	1		0830	52	1.	1		1650	102	31.	2		0110	152	0.
1		0020	3	0.	1		0840	53	2.	1		1700	103	30.	2		0120	153	0.
1		0030	4	0.	1		0850	54	3.	1		1710	104	29.	2		0130	154	0.
1		0040	5	0.	1		0900	55	3.	1		1720	105	29.	2		0140	155	0.
1		0050	6	0.	1		0910	56	4.	1		1730	106	29.	2		0150	156	0.
1		0100	7	0.	1		0920	57	5.	1		1740	107	29.	2		0200	157	0.
1		0110	8	0.	1		0930	58	6.	1		1750	108	28.	2		0210	158	0.
1		0120	9	0.	1		0940	59	7.	1		1800	109	27.	2		0220	159	0.
1		0130	10	0.	1		0950	60	8.	1		1810	110	25.	2		0230	160	0.
1		0140	11	0.	1		1000	61	9.	1		1820	111	24.	2		0240	161	0.
1		0150	12	0.	1		1010	62	11.	1		1830	112	23.	2		0250	162	0.
1		0200	13	0.	1		1020	63	12.	1		1840	113	23.	2		0300	163	0.
1		0210	14	0.	1		1030	64	15.	1		1850	114	23.	2		0310	164	0.
1		0220	15	0.	1		1040	65	18.	1		1900	115	23.	2		0320	165	0.
1		0230	16	0.	1		1050	66	22.	1		1910	116	23.	2		0330	166	0.
1		0240	17	0.	1		1100	67	27.	1		1920	117	23.	2		0340	167	0.
1		0250	18	0.	1		1110	68	33.	1		1930	118	23.	2		0350	168	0.
1		0300	19	0.	1		1120	69	41.	1		1940	119	23.	2		0400	169	0.
1		0310	20	0.	1		1130	70	50.	1		1950	120	23.	2		0410	170	0.
1		0320	21	0.	1		1140	71	89.	1		2000	121	21.	2		0420	171	0.
1		0330	22	0.	1		1150	72	226.	1		2010	122	20.	2		0430	172	0.
1		0340	23	0.	1		1200	73	502.	1		2020	123	18.	2		0440	173	0.
1		0350	24	0.	1		1210	74	707.	1		2030	124	18.	2		0450	174	0.
1		0400	25	0.	1		1220	75	595.	1		2040	125	18.	2		0500	175	0.
1		0410	26	0.	1		1230	76	393.	1		2050	126	17.	2		0510	176	0.
1		0420	27	0.	1		1240	77	272.	1		2100	127	17.	2		0520	177	0.
1		0430	28	0.	1		1250	78	194.	1		2110	128	17.	2		0530	178	0.
1		0440	29	0.	1		1300	79	138.	1		2120	129	17.	2		0540	179	0.
1		0450	30	0.	1		1310	80	106.	1		2130	130	17.	2		0550	180	0.
1		0500	31	0.	1		1320	81	106.	1		2140	131	17.	2		0600	181	0.
1		0510	32	0.	1		1330	82	104.	1		2150	132	17.	2		0610	182	0.
1		0520	33	0.	1		1340	83	90.	1		2200	133	17.	2		0620	183	0.
1		0530	34	0.	1		1350	84	76.	1		2210	134	17.	2		0630	184	0.
1		0540	35	0.	1		1400	85	66.	1		2220	135	17.	2		0640	185	0.
1		0550	36	0.	1		1410	86	60.	1		2230	136	17.	2		0650	186	0.
1		0600	37	0.	1		1420	87	55.	1		2240	137	17.	2		0700	187	0.
1		0610	38	0.	1		1430	88	51.	1		2250	138	18.	2		0710	188	0.
1		0620	39	0.	1		1440	89	47.	1		2300	139	22.	2		0720	189	0.
1		0630	40	0.	1		1450	90	44.	1		2310	140	25.	2		0730	190	0.
1		0640	41	0.	1		1500	91	41.	1		2320	141	24.	2		0740	191	0.
1		0650	42	0.	1		1510	92	40.	1		2330	142	21.	2		0750	192	0.
1		0700	43	0.	1		1520	93	39.	1		2340	143	18.	2		0800	193	0.
1		0710	44	0.	1		1530	94	38.	1		2350	144	15.	2		0810	194	0.
1		0720	45	0.	1		1540	95	36.	2		0000	145	10.	2		0820	195	0.
1		0730	46	0.	1		1550	96	35.	2		0010	146	6.	2		0830	196	0.
1		0740	47	0.	1		1600	97	34.	2		0020	147	3.	2		0840	197	0.
1		0750	48	0.	1		1610	98	34.	2		0030	148	1.	2		0850	198	0.
1		0800	49	0.	1		1620	99	34.	2		0040	149	1.	2		0900	199	0.
1		0810	50	0.	1		1630	100	34.	2		0050	150	0.	2		0910	200	0.

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
707.	12.17	(CFS)	125.	39.	28.	28.
		(INCHES)	1.662	2.049	2.049	2.049
		(AC-FT)	62.	77.	77.	77.

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                    CUMULATIVE AREA =      .70 SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
268 KK      *     PLD    *      CONCENTRATION PT. AT POWERLINE DAM
            *            *
            **************

270 KO          OUTPUT CONTROL VARIABLES
                      IPRNT            3  PRINT CONTROL
                      IPLOT            0  PLOT CONTROL
                      QSCAL           0.  HYDROGRAPH PLOT SCALE

271 HC          HYDROGRAPH COMBINATION
                      ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

     ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION       PLD
                      TRANSPOSITION AREA        .0 SQ MI

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                   6-HR       24-HR       72-HR     33.17-HR
  14312.      13.67        (CFS)     8802.       2837.       2053.        2053.
                         (INCHES)    1.739       2.241       2.242        2.242
                          (AC-FT)    4364.       5626.       5628.        5628.

                       CUMULATIVE AREA =   47.07 SQ MI

     ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION       PLD
                      TRANSPOSITION AREA      10.0 SQ MI

PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                   6-HR       24-HR       72-HR     33.17-HR
  14026.      13.67        (CFS)     8630.       2781.       2013.        2013.
                         (INCHES)    1.705       2.198       2.198        2.198
                          (AC-FT)    4279.       5517.       5518.        5518.
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CUMULATIVE AREA = 47.07 SQ MI

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HYDROGRAPH AT STATION PLD
TRANSPOSITION AREA 30.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
13570.	13.67	(CFS)	8355.	2694.	1950.	1950.
		(INCHES)	1.650	2.128	2.129	2.129
		(AC-FT)	4143.	5343.	5344.	5344.

CUMULATIVE AREA = 47.07 SQ MI

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HYDROGRAPH AT STATION PLD
TRANSPOSITION AREA 50.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
13285.	13.67	(CFS)	8184.	2639.	1910.	1910.
		(INCHES)	1.616	2.085	2.085	2.085
		(AC-FT)	4058.	5234.	5235.	5235.

CUMULATIVE AREA = 47.07 SQ MI

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INTERPOLATED HYDROGRAPH AT PLD

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
13319.	13.67	(CFS)	8204.	2645.	1914.	1914.
		(INCHES)	1.620	2.090	2.090	2.090
		(AC-FT)	4068.	5247.	5248.	5248.

CUMULATIVE AREA = 47.07 SQ MI

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	15	1859.	12.00	291.	89.	65.	1.76		
ROUTED TO	R15	1856.	12.17	291.	89.	65.	1.76		
HYDROGRAPH AT	14	1260.	12.00	176.	54.	39.	1.11		
HYDROGRAPH AT	16	1947.	12.17	385.	119.	86.	2.16		
3 COMBINED AT	114	4796.	12.17	849.	261.	189.	5.03		
ROUTED TO	R114	4433.	12.33	849.	261.	189.	5.03		
HYDROGRAPH AT	13	1895.	12.00	239.	74.	53.	1.29		
2 COMBINED AT	113	5023.	12.33	1085.	335.	242.	6.32		
ROUTED TO	R113	4793.	12.50	1084.	335.	242.	6.32		
HYDROGRAPH AT	12	1624.	12.17	272.	84.	61.	1.32		
2 COMBINED AT	112	5720.	12.33	1352.	418.	303.	7.64		
ROUTED TO	R112	5679.	12.50	1352.	418.	303.	7.64		
HYDROGRAPH AT	11	1029.	12.00	159.	50.	36.	.70		
HYDROGRAPH AT	17	442.	12.00	59.	18.	13.	.37		
HYDROGRAPH AT	10	639.	12.00	86.	26.	19.	.54		
4 COMBINED AT	111	6486.	12.33	1651.	512.	370.	9.25		
ROUTED TO	RD111	6061.	13.00	1649.	512.	370.	9.25		
HYDROGRAPH AT	2A	1210.	12.17	195.	60.	43.	1.09		
2 COMBINED AT	CP2A	6211.	13.00	1835.	571.	413.	10.34		
DIVERSION TO	FLOW	0.	.17	0.	0.	0.	10.34		
HYDROGRAPH AT	DIVERT	6211.	13.00	1835.	571.	413.	10.34		
ROUTED TO	RR2A	5812.	13.50	1833.	571.	413.	10.34		
HYDROGRAPH AT	2BE	943.	12.33	217.	67.	49.	1.22		
2 COMBINED AT	102B	6008.	13.50	2036.	635.	460.	11.56		
ROUTED TO	DET2BE	5780.	13.67	2020.	635.	460.	11.56	1651.49	13.67
DIVERSION TO	SPILL	2115.	13.67	204.	51.	37.	11.56		
HYDROGRAPH AT	FRWAY	3665.	13.33	1816.	584.	423.	11.56		
ROUTED TO	CHAN	3685.	13.50	1816.	584.	423.	11.56		

ROUTED TO	WASH	3648.	14.50	1811.	584.	422.	11.56		
HYDROGRAPH AT	RSPILL	2115.	13.67	204.	51.	37.	11.56		
ROUTED TO	IDAHO	2130.	13.67	204.	51.	37.	11.56		
2 COMBINED AT	WW	5244.	13.83	2016.	635.	459.	11.56		
ROUTED TO	RWW	4382.	14.83	2007.	635.	459.	11.56		
HYDROGRAPH AT	2BWW	382.	12.33	80.	25.	18.	.45		
HYDROGRAPH AT	2BWE	707.	12.17	125.	39.	28.	.70		
ROUTED TO	DET2BW	288.	12.67	110.	38.	28.	.70	1630.46	12.83
2 COMBINED AT	C004	511.	12.50	187.	63.	45.	1.15		
DIVERSION TO	EXIT	0.	.17	0.	0.	0.	1.15		
HYDROGRAPH AT	NDIV	511.	12.50	187.	63.	45.	1.15		
ROUTED TO	NDROUT	510.	12.67	187.	63.	45.	1.15	1626.43	12.50
ROUTED TO	R2BW	489.	13.00	187.	63.	45.	1.15		
HYDROGRAPH AT	2BS	1695.	12.17	315.	97.	70.	1.91		
3 COMBINED AT	102	4607.	14.83	2334.	787.	570.	14.62		
HYDROGRAPH AT	5	3814.	12.67	1115.	347.	251.	5.65		
ROUTED TO	R5	3838.	12.67	1115.	347.	251.	5.65		
HYDROGRAPH AT	4	5482.	13.17	2378.	750.	543.	11.85		
2 COMBINED AT	104	8359.	12.83	3445.	1083.	784.	17.50		
ROUTED TO	R104	7967.	13.50	3438.	1083.	784.	17.50		
HYDROGRAPH AT	7	719.	12.17	126.	39.	28.	.61		
HYDROGRAPH AT	6	3714.	13.00	1431.	447.	323.	7.86		
3 COMBINED AT	106	11196.	13.33	4896.	1543.	1116.	25.97		
ROUTED TO	R106	10881.	13.67	4888.	1543.	1116.	25.97		
HYDROGRAPH AT	3N	2720.	12.33	573.	178.	129.	2.89		
ROUTED TO	CULV	2500.	12.33	573.	178.	129.	2.89	1668.50	12.33
ROUTED TO	RCULV	2212.	12.83	573.	178.	129.	2.89		
HYDROGRAPH AT	3S	2193.	12.33	474.	147.	106.	2.39		
2 COMBINED AT	103	3344.	12.67	1043.	324.	235.	5.28		
HYDROGRAPH AT	3A	1181.	12.33	247.	77.	56.	1.20		
2 COMBINED AT	CP103	4255.	12.50	1288.	401.	290.	6.48		

2 COMBINED AT	W103	12407.	13.50	6061.	1918.	1388.	32.45		
ROUTED TO	RW103	12329.	13.67	6056.	1918.	1388.	32.45		
2 COMBINED AT	PLD	13319.	13.67	8204.	2645.	1914.	47.07		
ROUTED TO	RES	1201.	24.00	1150.	573.	432.	47.07	1584.07	24.17

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.75	1.75	180.	5937.	1.00	13.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.68	1.68	179.	5808.	1.00	13.67	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.57	1.57	177.	5599.	1.00	13.67	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.49	1.49	176.	5463.	1.00	13.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DETZBW

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.74	.74	31.	300.	1.00	12.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.68	.68	31.	281.	1.00	12.67	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.56	.56	30.	245.	1.00	12.67	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.46	.46	30.	219.	.67	12.83	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.87	.00	2.	530.	.00	12.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.70	.00	2.	500.	.00	12.67	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.51	.00	2.	465.	.00	12.50	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.43	.00	2.	451.	.00	12.50	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1584.25	.00	4672.	1703.	.00	20.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1584.20	.00	4648.	1548.	.00	21.33	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1584.12	.00	4611.	1299.	.00	22.50	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1584.07	.00	4586.	1190.	.00	24.17	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING        30-DEC-88        7:17:00
```

```
PROCESS 56 TERMINATED

ELAPSED TIME  0:00:52, CPU TIME  00:00:00.091, I/O BLOCKS  58
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF        30-DEC-88        7:17:00


****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix C

HEC-1 Output

Areal Reduction
the Osborn Method

```
+1111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111+

                    $   $  $   $  $$$$        $   $   $$$   $   $
                    $   $  $   $  $   $       $   $  $   $  $$ $$
                    $   $   $ $   $   $       $   $  $      $ $ $
                    $$$$$    $    $   $       $ $ $   $$$   $ $ $
                    $   $    $    $   $       $ $ $      $  $   $
                    $   $    $    $   $  $$   $$ $$  $   $  $   $
                    $   $    $    $$$$   $$   $   $   $$$   $   $

                  DEST=HYD.WSM  USER=HYD.WSM  QUEUE=LPT  DEVICE=@LPB
                SEQ=494  QPRI=128  CPL=132  LPP=66  COPIES=1  PAGES=164

                            CREATED:  30-DEC-88  07:17:06
                           ENQUEUED:  05-JAN-89  14:28:28
                           PRINTING:  05-JAN-89  14:31:43

      PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:REDOSB.OUT

              $$$$   $$$$$  $$$$    $$$    $$$   $$$$         $$$   $   $  $$$$$
              $   $  $      $   $  $   $  $   $  $   $       $   $  $   $    $
              $   $  $      $   $  $   $  $      $   $       $   $  $   $    $
              $$$$   $$$$   $   $  $   $   $$$   $$$$        $   $  $   $    $
              $ $    $      $   $  $   $      $  $   $       $   $  $   $    $
              $  $   $      $   $  $   $  $   $  $   $  $$   $   $  $   $    $
              $   $  $$$$$  $$$$    $$$    $$$   $$$$   $$    $$$    $$$     $

+1111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111+


                                AOS/VS REV 7.62.00.00


                              AOS/VS REVISION 7.62.00.00
                          AOS/VS XLPT-32 REVISION 7.62.00.00
```

```
**** AOS/VS REV 7.62.00.CO / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00  30-DEC-88        7:17:08
QPRI=128        SEQ=397
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?46.CLI.00002.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.397

--------
LAST MESSAGE CHANGE     17-NOV-88       14:55:52


                ***************          *******        ************
                ************        *************       ************
               ***                 ****      ***        ***      ***
              *******             ***                  ***      ***
             ******              ***                  ***      ***
            ***                 ***      ***         ***      ***
          ****                  ************        *************
        ******                   *******         *************


--------
MOST RECENT LOGON       30-DEC-88        7:16:08

AOS/VS CLI   REV 07.62.0C.00    30-DEC-88        7:17:09
) SEARCHLIST :UTIL/:MACRCS/:UDD:HYD.WSM/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
)
) LISTFILE REDOSB.OUT
) DATAFILE REDOSB.DAT
) SEA :UTIL:HEC1.DIR/[!SEA]
) X HEC1_START
```

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             FEBRUARY 1981             *
*           REVISED 31 JAN 85           *
*                                       *
*  RUN DATE12/30/1988   TIME 7:17:10 *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*  (916) 440-3285 OR (FTS) 448-3285   *
*                                       *
*****************************************
```

```
X      X  XXXXXXX   XXXXX            X
X      X  X         X     X         XX
X      X  X         X               X
XXXXXXX  XXXX       X        XXXXX  X
X      X  X         X               X
X      X  X         X     X         X
X      X  XXXXXXX   XXXXX          XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID      WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID      CONVERSION OF MODEL FROM TR-20
  3           ID                    100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
  4           ID                    DEVELOPMENT, MUSKINGUM ROUTING
  5           ID         CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                          POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                       2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                          AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                          LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                       3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                       4: ADJUSTED WATERSHED AREAS.
 12           ID                       5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                       6: NO MODIFICATIONS TO POWERLINE F.R.S.
 14           ID                       7: AREAL REDUCTION USING OSBORN CURVES, 1980.
              *DIAGRAM
 15           IT       10        0        0      200
 16           IO        5
 17           IN       15
 18           JD     3.85      .01
 19           PC        0     .002     .005     .008     .011     .014     .017     .020     .023     .026
 20           PC     .029     .032     .035     .038     .041     .044     .048     .052     .056     .060
 21           PC     .064     .068     .072     .076     .080     .085     .090     .095     .100     .105
 22           PC     .110     .115     .120     .126     .133     .140     .147     .155     .163     .172
 23           PC     .181     .191     .203     .218     .236     .257     .283     .387     .663     .707
 24           PC     .735     .758     .766     .791     .804     .815     .825     .834     .842     .849
 25           PC     .856     .863     .869     .875     .881     .887     .893     .898     .903     .908
 26           PC     .913     .918     .922     .926     .930     .934     .938     .942     .946     .950
 27           PC     .953     .956     .959     .962     .965     .968     .971     .974     .977     .980
 28           PC     .983     .986     .992     .995     .998    1.000    1.000    1.000    1.000    1.000
 29           JD     3.38       10
 30           JD     2.94       30
 31           JD     2.66       50

 32           KK       15  WATERSHED 15
 33           KM       HYDROGRAPH FOR WATERSHED 15
 34           BA     1.76
 35           LS        0       80
 36           UD      .18

 37           KK      R15 ROUTE HYDROGRAPH FROM WS 15
 38           KM      ROUTE HYDROGRAPH FROM WATERSHED 15
 39           RM        1      .11       .3

 40           KK       14 WATERSHED 14
 41           KM      HYDROGRAPH FOR WATERSHED 14
 42           BA     1.11
 43           LS        0       79
 44           UD      .15

 45           KK       16 WATERSHED 16
 46           KM      HYDROGRAPH FOR WATERSHED 16
 47           BA     2.16
 48           LS        0       82
 49           UD      .35
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  50          KK      114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
  51          KM      COMBINE ALL THREE HYDROGRAPHS AT CP 114
  52          HC        3

  53          KK     R114 ROUTE CP 114
  54          KM      ROUTE HYDROGRAPH FROM CP114 TO CP 113
  55          RM        1      .17       .3

  56          KK       13 WATERSHED 13
  57          KM      HYDROGRAPH FOR WATERSHED 13
  58          BA     1.29
  59          LS        0       83
  60          UD     .126

  61          KK      113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
  62          KM      COMBINE HYDROGRAPHS CP 114 AND WS 13
  63          HC        2

  64          KK     R113 ROUTE CP 113 TO CP 112
  65          KM      ROUTE HYDROGRAPH FOR CP 113
  66          RM        1      .19       .3

  67          KK       12 WATERSHED 12
  68          KM      HYDROGRAPH FOR WATERSHED 12
  69          BA     1.32
  70          LS        0       86
  71          UD      .27

  72          KK      112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
  73          KM      COMBINE HYDROGRAPH FROM CP 113 AND WS 12
  74          HC        2

  75          KK     R112 ROUTE CP 112 TO CP 111
  76          KM      ROUTE HYDROGRAPH CP 112 TO CP 111
  77          RM        1      .07       .3

  78          KK       11 WATERSHED 11
  79          KM      HYDROGRAPH FOR WATERSHED 11
  80          BA      .70
  81          LS        0       89
  82          UD     .186

  83          KK       17 WATERSHED 17
  84          KM      HYDROGRAPH FOR WATERSHED 17
  85          BA      .37
  86          LS        0       79
  87          UD     .138

  88          KK       10   WATERSHED 10
  89          KM      HYDROGRAPH FOR WATERSHED 10
  90          BA      .54
  91          LS        0       79
  92          UD      .14
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 93           KK     111 CONCENTRATION PT. 111
 94           KM     COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
 95           HC       4

 96           KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
 97           KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
 98           RM       5     .64      .3

 99           KK      2A  WATERSHED 2A
100           KM      HYDROGRAPH FOR WATERSHED 2A
101           BA    1.09
102           LS       0       82
103           UD     .22

104           KK    CP2A  CONCENTRATION POINT 2A
105           KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
106           HC       2

107           KK  DIVERT    POINT OF DIVERSION FOR WEEKES WASH
108           DT    FLOW
109           DI       0    6500    7000    9000   10000   15000
110           DQ       0       0     260    1300    1880    4600

111           KK    PR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
112           KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
113           RM       2     .42      .3

114           KK     2BE WATERSHED 2B EAST
115           KM     HYDROGRAPH FOR WATERSHED 2B EAST
116           BA    1.22
117           LS       0       82
118           UD     .48

119           KK    102B  CONCENTRATION POINT NORTH OF FREEWAY
120           KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
121           HC       2

122           KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
123           KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
124           RS       1    ELEV    1636
125           SV       0     6.0    13.0    29.0    47.0    69.0    93.0   122.0   153.0   184.0
126           SV     217     239
127           SE    1636    1637    1638    1640    1642    1644    1646    1648    1650    1652
128           SE    1654    1655
129           SQ       0      22     194     584    1050    1604    2236    2900    3534    4408
130           SQ    4622    4860
131           ST    1650     320     2.2     1.5

132           KK   FRWAY
133           KM    DIVERT ALL FLOW THAT GO UNDER THE ROAD
134           DT   SPILL
135           DI       0    3665    5000   10000   15000
136           DQ       0       0    1335    6335   11335
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 137          KK    CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 138          KM     ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 139          RM       1       .1       .3

 140          KK    WASH   ROUTE FLOWS THROUGH THE WASH
 141          KM      ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 142          RM       2      .50       .3

 143          KK  RSPILL
 144          KM     RETRIEVE FLOW DEIVERTED FROM THE EMERGENCY SPILLWAY
 145          DR   SPILL

 146          KK   IDAHO
 147          KM    RCUTE THE RETRIEVED FLOW DOWN IDAYO ROAD.
 148          RM       1       .1       .3

 149          KK      WW
 150          KM    COMBINE ALL THE FLOW FROM THE FREEWAY
 151          HC       2

 152          KK     RWW
 153          KM    RCUTE THE FLOW TO POWERLINE F.R.S.
 154          RM       4      .98       .3

 155          KK    2BWW  WATERSHED 2B WEST, WEST
 156          KM      HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 157          BA     .45
 158          LS       0       82
 159          UD      .4

 160          KK    2BWE  WATERSHED 2B WEST, EAST
 161          KM     RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 162          KO       1
 163          BA     .70
 164          LS       0       82
 165          UD      .3

 166          KK  DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 167          KM      ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 168          RS       1    ELEV  1623.5
 169          SV       0       .6      8.3     17.5     28.2     36.0     48.6
 170          SE  1623.5  1624.0  1626.0  1628.0  1630.0  1632.0  1634.0
 171          SQ       0       0      31      93     135     169     208
 172          ST  1630.0     110     2.2     1.5

 173          KK    CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 174          KM    COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 175          HC       2
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 176          KK     NDIV
 177          DT     EXIT
 178          DI        0     1218     5000    10000
 179          DQ        0        0     3782     9782

 180          KK   NDRCUT  ROUTE THROUGH THE FREEWAY
 181          KM     RCUTE COMBINED FLOW THROUGH 3 BBL. 6 X 8 BOX CULVERTS
 182          RS        1     ELEV  1622.6
 183          SV        0      .02      .16     1.12     4.17    25.42
 184          SE   1622.6   1623.0   1624.0   1626.0   1628.0   1630.0
 185          SQ        0        0      101      372      738     1111
 186          ST   1630.0     2875      2.2      1.5

 187          KK     R2BW  ROUTE TO CP102
 188          KM      ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 189          RM        2      .40       .3

 190          KK      2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 191          KM      HYDROGRAPH FOR WATERSHED 2B SOUTH
 192          BA     1.91
 193          LS        0       80
 194          UD      .32

 195          KK      102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 196          KM      COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 197          HC        3

 198          KK        5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 199          KM      HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 200          BA     5.65
 201          LS        0       85
 202          UD      .71

 203          KK       R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 204          KM       ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 205          RM        1      .07       .3

 206          KK        4 WATERSHED 4
 207          KM       HYDROGRAPH FOR WATERSHED 4
 208          BA    11.85
 209          LS        0       86
 210          UD     1.30

 211          KK      104  CONCENTRATION POINT 104
 212          KM      COMBINE HYDROGRAPHS AT CP 104
 213          HC        2

 214          KK     R104
 215          KM     ROUTE CP 104 TO 106
 216          RM        2      .50       .3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 217          KK        7  WATERSHED 7
 218          KM     HYDROGRAPH FOR WATERSHED 7
 219          BA      .61
 220          LS        0       86
 221          UD       .3

 222          KK        6 WATERSHED 6
 223          KM       HYDROGRAPH FOR WATERSHED 6
 224          BA     7.86
 225          LS        0       83
 226          UD     1.08

 227          KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 228          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 229          HC        3

 230          KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 231          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 232          RM        1      .27       .3

 233          KK       3N WATERSHED 3N
 234          KM       HYDROGRAPH FOR WATERSHED 3N
 235          BA     2.89
 236          LS        0       85
 237          UD      .41

 238          KK     CULV   ROUTE FLOWS THROUGH CULVERTS
 239          KM      ROUTE FLOWS THROUGH THE CULVERTS
 240          RS      1.0     ELEV     1665
 241          SV        0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
 242          SE     1665   1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 243          SQ        0      119      375      688     1063     1462     1938     2375     2875     3375

 244          KK    RCULV  ROUTE FLOWS TO W103
 245          KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
 246          RM        2       .5       .3

 247          KK       3S  WATERSHED 3 SOUTH
 248          KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
 249          BA     2.39
 250          LS        0       85
 251          UD     .436

 252          KK      103
 253          HC        2

 254          KK       3A   WATERSHED 3A
 255          KM      HYDROGRAPH FOR WATERSHED 3A
 256          BA     1.20
 257          LS        0       86
 258          UD       .4
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 259          KK   CP103
 260          KM     CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 261          HC       2

 262          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 263          KM      COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 264          HC       2

 265          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 266          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 267          RM       1     .16      .3

 268          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 269          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 270          KO       3
 271          HC       2

 272          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 273          KM     RESERVOIR RATING CURVE
 274          RS       1    ELEV  1568.2
 275          SV       0     175     380     700    1100    1600    2175    2875    3675    4200
 276          SV    4600    5525    6725    7925
 277          SQ       0      75      92     106     119     130     141     150     159     165
 278          SQ    1228    7360   16800   27280
 279          SE  1568.1  1568.2  1570.0  1572.1  1574.1  1576.1  1578.1  1580.1  1582.1  1583.3
 280          SE  1584.1  1586.1  1588.1  1590.1
 281          SS  1583.3       0       0       0
 282          ST  1589.1   13358     2.2     1.5
 283          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW
  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

  32          15
               V
               V
  37         R15
               .
               .
  40           .          14
               .           .
               .           .
  45           .           .          16
               .           .           .
               .           .           .
  50         114.......................
               V
               V
  53        R114
               .
               .
  56           .          13
               .           .
               .           .
  61         113............
               V
               V
  64        R113
               .
               .
  67           .          12
               .           .
               .           .
  72         112............
               V
               V
  75        R112
               .
               .
  78           .          11
               .           .
               .           .
  83           .           .          17
               .           .           .
               .           .           .
  88           .           .           .          10
               .           .           .           .
               .           .           .           .
  93         111.......................................
               V
               V
  96       RD111
               .
               .
  99           .          2A
               .           .
               .           .
 104        CP2A............
               .
```

```
108          .-------->    FLOW
107     DIVERT
             V
             V
111       RR2A
             .
             .
114          .         2BE
             .           .
             .           .
119       102B............
             V
             V
122     DET2BE
             .
             .
134          .-------->   SPILL
132      FRWAY
             V
             V
137       CHAN
             V
             V
140       WASH
             .
             .
145          .           .<-------   SPILL
143          .      RSPILL
             .           V
             .           V
146          .       IDAHO
             .           .
             .           .
149         WW............
             V
             V
152        RWW
             .
             .
155          .        2BWW
             .           .
             .           .
160          .           .        2BWE
             .           .           V
             .           .           V
166          .           .      DET2BW
             .           .           .
             .           .           .
173          .        C004............
             .           .
             .           .
177          .           .-------->    EXIT
176          .        NDIV
             .           V
             .           V
180          .      NDROUT
             .           V
             .           V
187          .        R2BW
             .           .
             .           .
190          .           .         2BS
```

```
                .          .          .
                .          .          .
195           102.......................
                .
                .
198             .          5
                .          V
                .          V
203             .         R5
                .          .
                .          .
206             .          .          4
                .          .          .
                .          .          .
211             .        104...........
                .          V
                .          V
214             .       R104
                .          .
                .          .
217             .          .          7
                .          .          .
                .          .          .
222             .          .          .          6
                .          .          .          .
                .          .          .          .
227             .        106......................
                .          V
                .          V
230             .       R106
                .          .
                .          .
233             .          .         3N
                .          .          V
                .          .          V
238             .          .       CULV
                .          .          V
                .          .          V
244             .          .      RCULV
                .          .          .
                .          .          .
247             .          .          .         3S
                .          .          .          .
                .          .          .          .
252             .          .        103...........
                .          .          .
                .          .          .
254             .          .          .         3A
                .          .          .          .
                .          .          .          .
259             .          .      CP103...........
                .          .          .
                .          .          .
262             .       W103...........
                .          V
                .          V
265             .      RW103
                .          .
                .          .
268           PLD...........
                V
                V
272           RES
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            FEBRUARY 1981              *
*          REVISED 31 JAN 85            *
*                                       *
*  RUN DATE12/30/1988   TIME 7:17:21 *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*     U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*        DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285   *
*                                       *
*****************************************
```

WEEKES WASH - POWERLINE F.R.S ANALYSIS
CONVERSION OF MODEL FROM TR-20
100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
DEVELOPMENT, MUSKINGUM ROUTING

CONDITIONS:
1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT POINT OF WEEKES WASH AT JUNCTION ROAD.
2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE LOTS, WITH NO DETENTION REQUIREMENTS. WORST CASE SCENA
3: SUPERSTITION FREEWAY IN PLACE.
4: ADJUSTED WATERSHED AREAS.
5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
6: NO MODIFICATIONS TO POWERLINE F.R.S.
7: AREAL REDUCTION USING OSBORN CURVES, 1980.

```
16 IO          OUTPUT CONTROL VARIABLES
                     IPRNT            5  PRINT CONTROL
                     IPLOT            0  PLOT CONTROL
                     QSCAL           0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN           10  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME         0000  STARTING TIME
                        NQ          200  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      2    0  ENDING DATE
                    NDTIME         0910  ENDING TIME

                 COMPUTATION INTERVAL      .17 HOURS
                      TOTAL TIME BASE    33.17 HOURS

        ENGLISH UNITS
             DRAINAGE AREA          SQUARE MILES
             PRECIPITATION DEPTH    INCHES
             LENGTH, ELEVATION      FEET
             FLOW                   CUBIC FEET PER SECOND
             STORAGE VOLUME         ACRE-FEET
             SURFACE AREA           ACRES
             TEMPERATURE            DEGREES FAHRENHEIT

18 JD          INDEX STORM NO. 1
                      STRM        3.85  PRECIPITATION DEPTH
                      TRDA         .01  TRANSPOSITION DRAINAGE AREA

19 PI            PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
```

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.01	.02	.02	.07
.13	.18	.03	.02	.02	.02	.01	.01	.02	.01
.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00							

29 JD INDEX STORM NO. 2

STRM 3.38 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.01	.02	.02	.07
.13	.18	.03	.02	.02	.02	.01	.01	.02	.01
.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00							

30 JD INDEX STORM NO. 3

STRM 2.94 PRECIPITATION DEPTH

TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.01	.02	.02	.07
.13	.18	.03	.02	.02	.02	.01	.01	.02	.01
.01	.01	.01	.01	.01	.01	.01	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00							

31 JD INDEX STORM NO. 4

STRM 2.66 PRECIPITATION DEPTH

TRDA 50.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

```
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .01     .01     .01     .01     .01     .01
.01     .01     .01     .01     .01     .01     .01     .02     .02     .07
.13     .18     .03     .02     .02     .02     .01     .01     .02     .01
.01     .01     .01     .01     .01     .01     .01     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00
```

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** ***

```
              **************
              *            *
 160 KK       *     2BWE   *        WATERSHED 2B WEST, EAST
              *            *
              **************

 162 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          1  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE

                 SUBBASIN RUNOFF DATA

 163 BA            SUBBASIN CHARACTERISTICS
                        TAREA        .70  SUBBASIN AREA

 164 LS            SCS LOSS RATE
                        STRTL        .44  INITIAL ABSTRACTION
                       CRVNBR      82.00  CURVE NUMBER
                        RTIMP        .00  PERCENT IMPERVIOUS AREA

 165 UD            SCS DIMENSIONLESS UNITGRAPH
                         TLAG        .30  LAG
```

***

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

UNIT HYDROGRAPH
11 END-OF-PERIOD ORDINATES

325. 864. 762. 385. 193. 94. 46. 23. 11. 6.
2.

****

HYDROGRAPH AT 2BWE
TRANSPOSITION AREA .0 SQ MI

****

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	*	1		1640	101	.01	.00	.01	34.
1		0010	2	.01	.01	.00	0.	*	1		1650	102	.01	.00	.01	32.
1		0020	3	.01	.01	.00	0.	*	1		1700	103	.01	.00	.01	30.
1		0030	4	.01	.01	.00	0.	*	1		1710	104	.01	.00	.01	29.
1		0040	5	.01	.01	.00	0.	*	1		1720	105	.01	.00	.01	29.
1		0050	6	.01	.01	.00	0.	*	1		1730	106	.01	.00	.01	29.
1		0100	7	.01	.01	.00	0.	*	1		1740	107	.01	.00	.01	29.
1		0110	8	.01	.01	.00	0.	*	1		1750	108	.01	.00	.01	28.
1		0120	9	.01	.01	.00	0.	*	1		1800	109	.01	.00	.01	27.
1		0130	10	.01	.01	.00	0.	*	1		1810	110	.01	.00	.01	25.
1		0140	11	.01	.01	.00	0.	*	1		1820	111	.01	.00	.01	24.
1		0150	12	.01	.01	.00	0.	*	1		1830	112	.01	.00	.01	24.
1		0200	13	.01	.01	.00	0.	*	1		1840	113	.01	.00	.01	23.
1		0210	14	.01	.01	.00	0.	*	1		1850	114	.01	.00	.01	23.
1		0220	15	.01	.01	.00	0.	*	1		1900	115	.01	.00	.01	23.
1		0230	16	.01	.01	.00	0.	*	1		1910	116	.01	.00	.01	23.
1		0240	17	.01	.01	.00	0.	*	1		1920	117	.01	.00	.01	23.
1		0250	18	.01	.01	.00	0.	*	1		1930	118	.01	.00	.01	23.
1		0300	19	.01	.01	.00	0.	*	1		1940	119	.01	.00	.01	23.
1		0310	20	.01	.01	.00	0.	*	1		1950	120	.01	.00	.01	23.
1		0320	21	.01	.01	.00	0.	*	1		2000	121	.01	.00	.01	22.
1		0330	22	.01	.01	.00	0.	*	1		2010	122	.01	.00	.01	20.
1		0340	23	.01	.01	.00	0.	*	1		2020	123	.01	.00	.01	19.
1		0350	24	.01	.01	.00	0.	*	1		2030	124	.01	.00	.01	18.
1		0400	25	.01	.01	.00	0.	*	1		2040	125	.01	.00	.01	18.
1		0410	26	.01	.01	.00	0.	*	1		2050	126	.01	.00	.01	18.
1		0420	27	.01	.01	.00	0.	*	1		2100	127	.01	.00	.01	18.
1		0430	28	.01	.01	.00	0.	*	1		2110	128	.01	.00	.01	18.
1		0440	29	.01	.01	.00	0.	*	1		2120	129	.01	.00	.01	18.
1		0450	30	.01	.01	.00	0.	*	1		2130	130	.01	.00	.01	18.
1		0500	31	.01	.01	.00	0.	*	1		2140	131	.01	.00	.01	18.
1		0510	32	.01	.01	.00	0.	*	1		2150	132	.01	.00	.01	18.
1		0520	33	.01	.01	.00	0.	*	1		2200	133	.01	.00	.01	18.
1		0530	34	.01	.01	.00	0.	*	1		2210	134	.01	.00	.01	18.
1		0540	35	.01	.01	.00	0.	*	1		2220	135	.01	.00	.01	18.
1		0550	36	.01	.01	.00	0.	*	1		2230	136	.01	.00	.01	18.
1		0600	37	.01	.01	.00	0.	*	1		2240	137	.01	.00	.01	18.
1		0610	38	.01	.01	.00	0.	*	1		2250	138	.01	.00	.01	19.
1		0620	39	.01	.01	.00	0.	*	1		2300	139	.02	.00	.01	23.
1		0630	40	.01	.01	.00	0.	*	1		2310	140	.01	.00	.01	26.
1		0640	41	.01	.01	.00	0.	*	1		2320	141	.01	.00	.01	24.
1		0650	42	.01	.01	.00	0.	*	1		2330	142	.01	.00	.01	21.
1		0700	43	.01	.01	.00	0.	*	1		2340	143	.01	.00	.00	18.
1		0710	44	.01	.01	.00	0.	*	1		2350	144	.00	.00	.00	15.
1		0720	45	.01	.01	.00	0.	*	2		0000	145	.00	.00	.00	11.

1	0730	46	.01	.01	.00	0.	*	2	0010	146	.00	.00	.00	6.
1	0740	47	.01	.01	.00	0.	*	2	0020	147	.00	.00	.00	3.
1	0750	48	.01	.01	.00	0.	*	2	0030	148	.00	.00	.00	1.
1	0800	49	.01	.01	.00	0.	*	2	0040	149	.00	.00	.00	1.
1	0810	50	.02	.01	.00	0.	*	2	0050	150	.00	.00	.00	0.
1	0820	51	.02	.02	.00	1.	*	2	0100	151	.00	.00	.00	0.
1	0830	52	.02	.02	.00	1.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	2.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	3.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	3.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	4.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	5.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	6.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	7.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	9.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	10.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.03	.02	.01	11.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	13.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	15.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	18.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	23.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.05	.03	.01	28.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	34.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	41.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.07	.04	.03	50.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.27	.15	.12	90.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.49	.21	.28	230.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.71	.22	.49	509.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	716.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	602.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.06	398.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.05	275.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	197.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	140.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	108.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	107.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.03	105.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	91.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	76.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.03	.01	.02	67.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	61.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	56.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	52.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	48.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	44.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	42.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	41.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	40.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.02	.00	.01	38.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.02	.00	.01	36.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.02	.00	.01	35.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.02	.00	.01	35.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.02	.00	.01	34.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.02	.00	.01	34.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.02	.00	.01	34.	*	2	0910	200	.00	.00	.00	0.
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TOTAL RAINFALL = 3.85, TOTAL LOSS = 1.77, TOTAL EXCESS = 2.08

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
716.	12.17	(CFS)	127.	39.	28.	28.

(INCHES)	1.682	2.075	2.075	2.075
(AC-FT)	63.	77.	77.	77.

CUMULATIVE AREA = .70 SQ MI

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HYDROGRAPH AT 2BWE
TRANSPOSITION AREA 10.0 SQ MI

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DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	*	1		1640	101	.01	.00	.01	28.
1		0010	2	.00	.00	.00	0.	*	1		1650	102	.01	.00	.01	27.
1		0020	3	.01	.01	.00	0.	*	1		1700	103	.01	.00	.01	25.
1		0030	4	.01	.01	.00	0.	*	1		1710	104	.01	.00	.01	25.
1		0040	5	.01	.01	.00	0.	*	1		1720	105	.01	.00	.01	24.
1		0050	6	.01	.01	.00	0.	*	1		1730	106	.01	.00	.01	24.
1		0100	7	.01	.01	.00	0.	*	1		1740	107	.01	.00	.01	24.
1		0110	8	.01	.01	.00	0.	*	1		1750	108	.01	.00	.01	24.
1		0120	9	.01	.01	.00	0.	*	1		1800	109	.01	.00	.01	23.
1		0130	10	.01	.01	.00	0.	*	1		1810	110	.01	.00	.01	21.
1		0140	11	.01	.01	.00	0.	*	1		1820	111	.01	.00	.01	20.
1		0150	12	.01	.01	.00	0.	*	1		1830	112	.01	.00	.01	20.
1		0200	13	.01	.01	.00	0.	*	1		1840	113	.01	.00	.01	20.
1		0210	14	.01	.01	.00	0.	*	1		1850	114	.01	.00	.01	20.
1		0220	15	.01	.01	.00	0.	*	1		1900	115	.01	.00	.01	20.
1		0230	16	.01	.01	.00	0.	*	1		1910	116	.01	.00	.01	20.
1		0240	17	.01	.01	.00	0.	*	1		1920	117	.01	.00	.01	20.
1		0250	18	.01	.01	.00	0.	*	1		1930	118	.01	.00	.01	20.
1		0300	19	.01	.01	.00	0.	*	1		1940	119	.01	.00	.01	20.
1		0310	20	.01	.01	.00	0.	*	1		1950	120	.01	.00	.01	19.
1		0320	21	.01	.01	.00	0.	*	1		2000	121	.01	.00	.01	18.
1		0330	22	.01	.01	.00	0.	*	1		2010	122	.01	.00	.01	17.
1		0340	23	.01	.01	.00	0.	*	1		2020	123	.01	.00	.01	16.
1		0350	24	.01	.01	.00	0.	*	1		2030	124	.01	.00	.01	15.
1		0400	25	.01	.01	.00	0.	*	1		2040	125	.01	.00	.01	15.
1		0410	26	.01	.01	.00	0.	*	1		2050	126	.01	.00	.01	15.
1		0420	27	.01	.01	.00	0.	*	1		2100	127	.01	.00	.01	15.
1		0430	28	.01	.01	.00	0.	*	1		2110	128	.01	.00	.01	15.
1		0440	29	.01	.01	.00	0.	*	1		2120	129	.01	.00	.01	15.
1		0450	30	.01	.01	.00	0.	*	1		2130	130	.01	.00	.01	15.
1		0500	31	.01	.01	.00	0.	*	1		2140	131	.01	.00	.01	15.
1		0510	32	.01	.01	.00	0.	*	1		2150	132	.01	.00	.01	15.
1		0520	33	.01	.01	.00	0.	*	1		2200	133	.01	.00	.01	15.
1		0530	34	.01	.01	.00	0.	*	1		2210	134	.01	.00	.01	15.
1		0540	35	.01	.01	.00	0.	*	1		2220	135	.01	.00	.01	15.
1		0550	36	.01	.01	.00	0.	*	1		2230	136	.01	.00	.01	15.
1		0600	37	.01	.01	.00	0.	*	1		2240	137	.01	.00	.01	15.
1		0610	38	.01	.01	.00	0.	*	1		2250	138	.01	.00	.01	16.
1		0620	39	.01	.01	.00	0.	*	1		2300	139	.01	.00	.01	19.
1		0630	40	.01	.01	.00	0.	*	1		2310	140	.01	.00	.01	22.
1		0640	41	.01	.01	.00	0.	*	1		2320	141	.01	.00	.01	20.
1		0650	42	.01	.01	.00	0.	*	1		2330	142	.01	.00	.01	18.
1		0700	43	.01	.01	.00	0.	*	1		2340	143	.00	.00	.00	16.
1		0710	44	.01	.01	.00	0.	*	1		2350	144	.00	.00	.00	13.
1		0720	45	.01	.01	.00	0.	*	2		0000	145	.00	.00	.00	9.
1		0730	46	.01	.01	.00	0.	*	2		0010	146	.00	.00	.00	5.
1		0740	47	.01	.01	.00	0.	*	2		0020	147	.00	.00	.00	3.
1		0750	48	.01	.01	.00	0.	*	2		0030	148	.00	.00	.00	1.

1	0800	49	.01	.01	.00	0.	*	2	0040	149	.00	.00	.00	1.
1	0810	50	.01	.01	.00	0.	*	2	0050	150	.00	.00	.00	0.
1	0820	51	.01	.01	.00	0.	*	2	0100	151	.00	.00	.00	0.
1	0830	52	.02	.02	.00	0.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	0.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	0.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	1.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	1.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	2.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	3.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	4.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	5.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	6.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.02	.02	.00	7.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.02	.02	.00	8.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.00	10.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.03	.03	.01	12.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	15.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.04	.03	.01	19.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.03	.01	24.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.05	.04	.02	29.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.06	.04	.02	37.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.23	.14	.09	67.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.43	.21	.22	177.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.62	.22	.40	404.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.10	.03	.07	578.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.08	.02	.06	490.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.06	.02	.05	325.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.05	.01	.04	226.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.03	.01	.03	162.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.01	116.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.04	89.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.04	.01	.03	89.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.02	88.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.02	.01	.02	76.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.02	.01	.02	64.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.02	.01	.02	56.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	51.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.01	47.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.01	43.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	40.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	37.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	35.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	34.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.01	.00	.01	33.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.01	.00	.01	32.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.01	.00	.01	31.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.01	.00	.01	30.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.01	.00	.01	29.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.01	.00	.01	29.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.01	.00	.01	29.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.01	.00	.01	29.	*	2	0910	200	.00	.00	.00	0.
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TOTAL RAINFALL = 2.38, TOTAL LOSS = 1.70, TOTAL EXCESS = 1.68

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
578.	12.17	(CFS)	103.	32.	23.	23.
		(INCHES)	1.369	1.684	1.684	1.684
		(AC-FT)	51.	63.	63.	63.

CUMULATIVE AREA = .70 SQ MI

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HYDROGRAPH AT 2BWE
TRANSPOSITION AREA 30.0 SQ MI

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DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	*	1		1640	101	.01	.00	.01	23.
1		0010	2	.00	.00	.00	0.	*	1		1650	102	.01	.00	.01	22.
1		0020	3	.00	.00	.00	0.	*	1		1700	103	.01	.00	.01	21.
1		0030	4	.01	.01	.00	0.	*	1		1710	104	.01	.00	.01	20.
1		0040	5	.01	.01	.00	0.	*	1		1720	105	.01	.00	.01	20.
1		0050	6	.01	.01	.00	0.	*	1		1730	106	.01	.00	.01	20.
1		0100	7	.01	.01	.00	0.	*	1		1740	107	.01	.00	.01	20.
1		0110	8	.01	.01	.00	0.	*	1		1750	108	.01	.00	.01	20.
1		0120	9	.01	.01	.00	0.	*	1		1800	109	.01	.00	.01	19.
1		0130	10	.01	.01	.00	0.	*	1		1810	110	.01	.00	.01	18.
1		0140	11	.01	.01	.00	0.	*	1		1820	111	.01	.00	.01	17.
1		0150	12	.01	.01	.00	0.	*	1		1830	112	.01	.00	.01	17.
1		0200	13	.01	.01	.00	0.	*	1		1840	113	.01	.00	.01	16.
1		0210	14	.01	.01	.00	0.	*	1		1850	114	.01	.00	.01	16.
1		0220	15	.01	.01	.00	0.	*	1		1900	115	.01	.00	.01	16.
1		0230	16	.01	.01	.00	0.	*	1		1910	116	.01	.00	.01	16.
1		0240	17	.01	.01	.00	0.	*	1		1920	117	.01	.00	.01	16.
1		0250	18	.01	.01	.00	0.	*	1		1930	118	.01	.00	.01	16.
1		0300	19	.01	.01	.00	0.	*	1		1940	119	.01	.00	.01	16.
1		0310	20	.01	.01	.00	0.	*	1		1950	120	.01	.00	.01	16.
1		0320	21	.01	.01	.00	0.	*	1		2000	121	.01	.00	.00	15.
1		0330	22	.01	.01	.00	0.	*	1		2010	122	.01	.00	.00	14.
1		0340	23	.01	.01	.00	0.	*	1		2020	123	.01	.00	.00	13.
1		0350	24	.01	.01	.00	0.	*	1		2030	124	.01	.00	.00	13.
1		0400	25	.01	.01	.00	0.	*	1		2040	125	.01	.00	.00	12.
1		0410	26	.01	.01	.00	0.	*	1		2050	126	.01	.00	.00	12.
1		0420	27	.01	.01	.00	0.	*	1		2100	127	.01	.00	.00	12.
1		0430	28	.01	.01	.00	0.	*	1		2110	128	.01	.00	.00	12.
1		0440	29	.01	.01	.00	0.	*	1		2120	129	.01	.00	.00	12.
1		0450	30	.01	.01	.00	0.	*	1		2130	130	.01	.00	.00	12.
1		0500	31	.01	.01	.00	0.	*	1		2140	131	.01	.00	.00	12.
1		0510	32	.01	.01	.00	0.	*	1		2150	132	.01	.00	.00	12.
1		0520	33	.01	.01	.00	0.	*	1		2200	133	.01	.00	.00	12.
1		0530	34	.01	.01	.00	0.	*	1		2210	134	.01	.00	.00	12.
1		0540	35	.01	.01	.00	0.	*	1		2220	135	.01	.00	.00	12.
1		0550	36	.01	.01	.00	0.	*	1		2230	136	.01	.00	.00	12.
1		0600	37	.01	.01	.00	0.	*	1		2240	137	.01	.00	.00	12.
1		0610	38	.01	.01	.00	0.	*	1		2250	138	.01	.00	.01	13.
1		0620	39	.01	.01	.00	0.	*	1		2300	139	.01	.00	.01	16.
1		0630	40	.01	.01	.00	0.	*	1		2310	140	.01	.00	.00	18.
1		0640	41	.01	.01	.00	0.	*	1		2320	141	.01	.00	.00	17.
1		0650	42	.01	.01	.00	0.	*	1		2330	142	.01	.00	.00	15.
1		0700	43	.01	.01	.00	0.	*	1		2340	143	.00	.00	.00	13.
1		0710	44	.01	.01	.00	0.	*	1		2350	144	.00	.00	.00	11.
1		0720	45	.01	.01	.00	0.	*	2		0000	145	.00	.00	.00	7.
1		0730	46	.01	.01	.00	0.	*	2		0010	146	.00	.00	.00	4.
1		0740	47	.01	.01	.00	0.	*	2		0020	147	.00	.00	.00	2.
1		0750	48	.01	.01	.00	0.	*	2		0030	148	.00	.00	.00	1.
1		0800	49	.01	.01	.00	0.	*	2		0040	149	.00	.00	.00	0.
1		0810	50	.01	.01	.00	0.	*	2		0050	150	.00	.00	.00	0.
1		0820	51	.01	.01	.00	0.	*	2		0100	151	.00	.00	.00	0.

1	0830	52	.01	.01	.00	0.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.01	.01	.00	0.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.01	.01	.00	0.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.01	.01	.00	0.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	0.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	0.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	0.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	1.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	1.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	2.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.02	.02	.00	3.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.02	.02	.00	4.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.02	.02	.00	5.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.03	.03	.00	7.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.03	.03	.01	9.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.04	.03	.01	12.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.04	.03	.01	15.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.05	.04	.01	19.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.05	.04	.01	25.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.20	.14	.07	48.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.37	.20	.17	131.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.54	.22	.32	310.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.09	.03	.06	453.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.07	.02	.05	387.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.05	.02	.04	259.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.05	.01	.03	181.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.03	.01	.02	131.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.01	94.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.05	.01	.03	73.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.04	.01	.03	73.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.02	72.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.02	.01	.02	62.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.02	.01	.01	52.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.02	.01	.01	46.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.01	42.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.01	39.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.01	36.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.01	.00	.01	33.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.01	.00	.01	31.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.01	.00	.01	29.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.01	.00	.01	28.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.01	.00	.01	27.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.01	.00	.01	26.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.01	.00	.01	25.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.01	.00	.01	24.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.01	.00	.01	24.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.01	.00	.01	24.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.01	.00	.01	24.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.01	.00	.01	24.	*	2	0910	200	.00	.00	.00	0.
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TOTAL RAINFALL = 2.94, TOTAL LOSS = 1.61, TOTAL EXCESS = 1.33

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
453.	12.17	(CFS)	82.	25.	18.	18.
		(INCHES)	1.084	1.332	1.332	1.332
		(AC-FT)	40.	50.	50.	50.

CUMULATIVE AREA = .70 SQ MI

HYDROGRAPH AT 2BWE
TRANSPOSITION AREA 50.0 SQ MI

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	1		1640	101	.01	.00	.01	20.
1		0010	2	.00	.00	.00	0.	1		1650	102	.01	.00	.01	19.
1		0020	3	.00	.00	.00	0.	1		1700	103	.01	.00	.01	18.
1		0030	4	.01	.01	.00	0.	1		1710	104	.01	.00	.01	18.
1		0040	5	.01	.01	.00	0.	1		1720	105	.01	.00	.01	18.
1		0050	6	.01	.01	.00	0.	1		1730	106	.01	.00	.01	17.
1		0100	7	.01	.01	.00	0.	1		1740	107	.01	.00	.01	17.
1		0110	8	.01	.01	.00	0.	1		1750	108	.01	.00	.01	17.
1		0120	9	.01	.01	.00	0.	1		1800	109	.01	.00	.01	16.
1		0130	10	.01	.01	.00	0.	1		1810	110	.01	.00	.01	15.
1		0140	11	.01	.01	.00	0.	1		1820	111	.01	.00	.01	15.
1		0150	12	.01	.01	.00	0.	1		1830	112	.01	.00	.01	14.
1		0200	13	.01	.01	.00	0.	1		1840	113	.01	.00	.01	14.
1		0210	14	.01	.01	.00	0.	1		1850	114	.01	.00	.01	14.
1		0220	15	.01	.01	.00	0.	1		1900	115	.01	.00	.01	14.
1		0230	16	.01	.01	.00	0.	1		1910	116	.01	.00	.01	14.
1		0240	17	.01	.01	.00	0.	1		1920	117	.01	.00	.01	14.
1		0250	18	.01	.01	.00	0.	1		1930	118	.01	.00	.01	14.
1		0300	19	.01	.01	.00	0.	1		1940	119	.01	.00	.01	14.
1		0310	20	.01	.01	.00	0.	1		1950	120	.01	.00	.00	14.
1		0320	21	.01	.01	.00	0.	1		2000	121	.01	.00	.00	13.
1		0330	22	.01	.01	.00	0.	1		2010	122	.01	.00	.00	12.
1		0340	23	.01	.01	.00	0.	1		2020	123	.01	.00	.00	11.
1		0350	24	.01	.01	.00	0.	1		2030	124	.01	.00	.00	11.
1		0400	25	.01	.01	.00	0.	1		2040	125	.01	.00	.00	11.
1		0410	26	.01	.01	.00	0.	1		2050	126	.01	.00	.00	11.
1		0420	27	.01	.01	.00	0.	1		2100	127	.01	.00	.00	11.
1		0430	28	.01	.01	.00	0.	1		2110	128	.01	.00	.00	11.
1		0440	29	.01	.01	.00	0.	1		2120	129	.01	.00	.00	11.
1		0450	30	.01	.01	.00	0.	1		2130	130	.01	.00	.00	11.
1		0500	31	.01	.01	.00	0.	1		2140	131	.01	.00	.00	11.
1		0510	32	.01	.01	.00	0.	1		2150	132	.01	.00	.00	11.
1		0520	33	.01	.01	.00	0.	1		2200	133	.01	.00	.00	11.
1		0530	34	.01	.01	.00	0.	1		2210	134	.01	.00	.00	11.
1		0540	35	.01	.01	.00	0.	1		2220	135	.01	.00	.00	11.
1		0550	36	.01	.01	.00	0.	1		2230	136	.01	.00	.00	11.
1		0600	37	.01	.01	.00	0.	1		2240	137	.01	.00	.00	11.
1		0610	38	.01	.01	.00	0.	1		2250	138	.01	.00	.01	11.
1		0620	39	.01	.01	.00	0.	1		2300	139	.01	.00	.01	14.
1		0630	40	.01	.01	.00	0.	1		2310	140	.01	.00	.00	16.
1		0640	41	.01	.01	.00	0.	1		2320	141	.01	.00	.00	15.
1		0650	42	.01	.01	.00	0.	1		2330	142	.01	.00	.00	13.
1		0700	43	.01	.01	.00	0.	1		2340	143	.00	.00	.00	11.
1		0710	44	.01	.01	.00	0.	1		2350	144	.00	.00	.00	9.
1		0720	45	.01	.01	.00	0.	2		0000	145	.00	.00	.00	6.
1		0730	46	.01	.01	.00	0.	2		0010	146	.00	.00	.00	4.
1		0740	47	.01	.01	.00	0.	2		0020	147	.00	.00	.00	2.
1		0750	48	.01	.01	.00	0.	2		0030	148	.00	.00	.00	1.
1		0800	49	.01	.01	.00	0.	2		0040	149	.00	.00	.00	0.
1		0810	50	.01	.01	.00	0.	2		0050	150	.00	.00	.00	0.
1		0820	51	.01	.01	.00	0.	2		0100	151	.00	.00	.00	0.
1		0830	52	.01	.01	.00	0.	2		0110	152	.00	.00	.00	0.
1		0840	53	.01	.01	.00	0.	2		0120	153	.00	.00	.00	0.
1		0850	54	.01	.01	.00	0.	2		0130	154	.00	.00	.00	0.

1	0900	55	.01	.01	.00	0.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.01	.01	.00	0.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.01	.01	.00	0.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.01	.01	.00	0.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	0.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	0.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	0.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.02	.02	.00	1.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.02	.02	.00	2.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.02	.02	.00	2.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.03	.02	.00	4.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.03	.03	.00	5.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.03	.03	.00	7.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.04	.03	.01	10.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.04	.03	.01	13.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.05	.04	.01	18.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.18	.13	.05	36.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.34	.20	.14	103.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.49	.22	.27	253.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.08	.03	.05	376.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.06	.02	.04	324.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.05	.02	.03	218.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.04	.01	.03	153.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.03	.01	.02	111.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.01	.00	.01	80.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.04	.01	.03	62.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.03	.01	.02	62.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.02	.01	.02	62.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.02	.01	.01	53.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.02	.01	.01	45.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.02	.01	.01	40.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.01	36.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.01	33.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.01	.00	.01	31.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.01	.00	.01	29.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.01	.00	.01	26.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.01	.00	.01	25.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.01	.00	.01	24.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.01	.00	.01	24.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.01	.00	.01	23.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.01	.00	.01	22.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.01	.00	.01	21.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.01	.00	.01	21.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.01	.00	.01	21.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.01	.00	.01	21.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.01	.00	.01	21.	*	2	0910	200	.00	.00	.00	0.
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TOTAL RAINFALL = 2.66, TOTAL LOSS = 1.54, TOTAL EXCESS = 1.12

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
376.	12.17	(CFS)	69.	21.	15.	15.
		(INCHES)	.910	1.117	1.117	1.117
		(AC-FT)	34.	42.	42.	42.

CUMULATIVE AREA = .70 SQ MI

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INTERPOLATED HYDROGRAPH AT 2BWE

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0820	51	0.	1		1640	101	30.	2		0100	151	0.
1		0010	2	0.	1		0830	52	1.	1		1650	102	29.	2		0110	152	0.
1		0020	3	0.	1		0840	53	1.	1		1700	103	27.	2		0120	153	0.
1		0030	4	0.	1		0850	54	1.	1		1710	104	27.	2		0130	154	0.
1		0040	5	0.	1		0900	55	2.	1		1720	105	26.	2		0140	155	0.
1		0050	6	0.	1		0910	56	3.	1		1730	106	26.	2		0150	156	0.
1		0100	7	0.	1		0920	57	3.	1		1740	107	26.	2		0200	157	0.
1		0110	8	0.	1		0930	58	4.	1		1750	108	26.	2		0210	158	0.
1		0120	9	0.	1		0940	59	5.	1		1800	109	25.	2		0220	159	0.
1		0130	10	0.	1		0950	60	6.	1		1810	110	23.	2		0230	160	0.
1		0140	11	0.	1		1000	61	7.	1		1820	111	22.	2		0240	161	0.
1		0150	12	0.	1		1010	62	8.	1		1830	112	21.	2		0250	162	0.
1		0200	13	0.	1		1020	63	10.	1		1840	113	21.	2		0300	163	0.
1		0210	14	0.	1		1030	64	12.	1		1850	114	21.	2		0310	164	0.
1		0220	15	0.	1		1040	65	14.	1		1900	115	21.	2		0320	165	0.
1		0230	16	0.	1		1050	66	18.	1		1910	116	21.	2		0330	166	0.
1		0240	17	0.	1		1100	67	22.	1		1920	117	21.	2		0340	167	0.
1		0250	18	0.	1		1110	68	28.	1		1930	118	21.	2		0350	168	0.
1		0300	19	0.	1		1120	69	34.	1		1940	119	21.	2		0400	169	0.
1		0310	20	0.	1		1130	70	42.	1		1950	120	21.	2		0410	170	0.
1		0320	21	0.	1		1140	71	76.	1		2000	121	20.	2		0420	171	0.
1		0330	22	0.	1		1150	72	197.	1		2010	122	18.	2		0430	172	0.
1		0340	23	0.	1		1200	73	444.	1		2020	123	17.	2		0440	173	0.
1		0350	24	0.	1		1210	74	631.	1		2030	124	16.	2		0450	174	0.
1		0400	25	0.	1		1220	75	533.	1		2040	125	16.	2		0500	175	0.
1		0410	26	0.	1		1230	76	353.	1		2050	126	16.	2		0510	176	0.
1		0420	27	0.	1		1240	77	245.	1		2100	127	16.	2		0520	177	0.
1		0430	28	0.	1		1250	78	176.	1		2110	128	16.	2		0530	178	0.
1		0440	29	0.	1		1300	79	125.	1		2120	129	16.	2		0540	179	0.
1		0450	30	0.	1		1310	80	96.	1		2130	130	16.	2		0550	180	0.
1		0500	31	0.	1		1320	81	96.	1		2140	131	16.	2		0600	181	0.
1		0510	32	0.	1		1330	82	95.	1		2150	132	16.	2		0610	182	0.
1		0520	33	0.	1		1340	83	81.	1		2200	133	16.	2		0620	183	0.
1		0530	34	0.	1		1350	84	69.	1		2210	134	16.	2		0630	184	0.
1		0540	35	0.	1		1400	85	61.	1		2220	135	16.	2		0640	185	0.
1		0550	36	0.	1		1410	86	55.	1		2230	136	16.	2		0650	186	0.
1		0600	37	0.	1		1420	87	50.	1		2240	137	16.	2		0700	187	0.
1		0610	38	0.	1		1430	88	47.	1		2250	138	17.	2		0710	188	0.
1		0620	39	0.	1		1440	89	43.	1		2300	139	20.	2		0720	189	0.
1		0630	40	0.	1		1450	90	40.	1		2310	140	23.	2		0730	190	0.
1		0640	41	0.	1		1500	91	38.	1		2320	141	22.	2		0740	191	0.
1		0650	42	0.	1		1510	92	37.	1		2330	142	19.	2		0750	192	0.
1		0700	43	0.	1		1520	93	36.	1		2340	143	17.	2		0800	193	0.
1		0710	44	0.	1		1530	94	34.	1		2350	144	14.	2		0810	194	0.
1		0720	45	0.	1		1540	95	33.	2		0000	145	10.	2		0820	195	0.
1		0730	46	0.	1		1550	96	32.	2		0010	146	5.	2		0830	196	0.
1		0740	47	0.	1		1600	97	31.	2		0020	147	3.	2		0840	197	0.
1		0750	48	0.	1		1610	98	31.	2		0030	148	1.	2		0850	198	0.
1		0800	49	0.	1		1620	99	31.	2		0040	149	1.	2		0900	199	0.
1		0810	50	0.	1		1630	100	31.	2		0050	150	0.	2		0910	200	0.

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
631.	12.17	(CFS)	112.	35.	25.	25.
		(INCHES)	1.489	1.835	1.835	1.835
		(AC-FT)	56.	68.	68.	68.

```
                    CUMULATIVE AREA =      .7C SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WAPNING *** TIME INTERVAL IS GREATEP THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN PE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
 268 KK   *     PLD    *      CONCENTRATION PT. AT POWERLINE DAM
          *            *
          **************

 270 KO          OUTPUT CONTROL VARIABLES
                      IPRNT            3  PRINT CONTROL
                      IPLOT            0  PLOT CONTROL
                      QSCAL           0.  HYDROGRAPH PLOT SCALE

 271 HC          HYDROGRAPH COMBINATION
                      ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                                  ***

     ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION       PLD
                      TRANSPOSITION AREA        .0 SQ MI

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                  6-HR        24-HR       72-HR      33.17-HR
   14312.      13.67        (CFS)    8802.        2837.       2053.        2053.
                          (INCHES)   1.739        2.241       2.242        2.242
                           (AC-FT)   4364.        5626.       5628.        5628.

                        CUMULATIVE AREA =    47.07 SQ MI

     ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION       PLD
                      TRANSPOSITION AREA      10.0 SQ MI

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                  6-HR        24-HR       72-HR      33.17-HR
   11651.      13.67        (CFS)    7201.        2325.       1682.        1682.
                          (INCHES)   1.422        1.837       1.837        1.837
                           (AC-FT)   3571.        4611.       4612.        4612.
```

CUMULATIVE AREA = 47.07 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION PLD
TRANSPOSITION AREA 30.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		6-HR	MAXIMUM AVERAGE FLOW 24-HR	72-HR	33.17-HR
9254.	13.83	(CFS)	5744.	1861.	1347.	1347.
		(INCHES)	1.135	1.470	1.470	1.470
		(AC-FT)	2848.	3691.	3692.	3692.

CUMULATIVE AREA = 47.07 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION PLD
TRANSPOSITION AREA 50.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		6-HR	MAXIMUM AVERAGE FLOW 24-HR	72-HR	33.17-HR
7780.	13.83	(CFS)	4844.	1576.	1140.	1140.
		(INCHES)	.957	1.245	1.245	1.245
		(AC-FT)	2402.	3126.	3126.	3126.

CUMULATIVE AREA = 47.07 SQ MI

*** *** *** *** ***

INTERPOLATED HYDROGRAPH AT PLD

PEAK FLOW (CFS)	TIME (HR)		6-HR	MAXIMUM AVERAGE FLOW 24-HR	72-HR	33.17-HR
7954.	13.83	(CFS)	4951.	1610.	1165.	1165.
		(INCHES)	.978	1.272	1.272	1.272
		(AC-FT)	2455.	3193.	3193.	3193.

CUMULATIVE AREA = 47.07 SQ MI

PUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	15	1599.	12.00	252.	77.	56.	1.76		
ROUTED TO	R15	1601.	12.17	252.	77.	56.	1.76		
HYDROGRAPH AT	14	1099.	12.00	155.	47.	34.	1.11		
HYDROGRAPH AT	16	1678.	12.17	334.	103.	74.	2.16		
3 COMBINED AT	114	4015.	12.17	715.	220.	159.	5.03		
ROUTED TO	R114	3709.	12.33	715.	220.	159.	5.03		
HYDROGRAPH AT	13	1673.	12.00	211.	65.	47.	1.29		
2 COMBINED AT	113	4186.	12.33	910.	280.	203.	6.32		
ROUTED TO	R113	3990.	12.50	909.	280.	203.	6.32		
HYDROGRAPH AT	12	1446.	12.17	242.	75.	54.	1.32		
2 COMBINED AT	112	4742.	12.33	1132.	350.	253.	7.64		
ROUTED TO	R112	4715.	12.50	1131.	350.	253.	7.64		
HYDROGRAPH AT	11	938.	12.00	145.	45.	33.	.70		
HYDROGRAPH AT	17	399.	12.00	53.	16.	12.	.37		
HYDROGRAPH AT	10	570.	12.00	77.	24.	17.	.54		
4 COMBINED AT	111	5365.	12.33	1376.	426.	308.	9.25		
ROUTED TO	RD111	5014.	13.00	1374.	426.	308.	9.25		
HYDROGRAPH AT	2A	1071.	12.17	172.	53.	38.	1.09		
2 COMBINED AT	CP2A	5101.	13.00	1516.	471.	341.	10.34		
DIVERSION TO	FLOW	0.	.17	0.	0.	0.	10.34		
HYDROGRAPH AT	DIVERT	5101.	13.00	1516.	471.	341.	10.34		
ROUTED TO	RR2A	4777.	13.50	1513.	471.	341.	10.34		
HYDROGRAPH AT	2BE	827.	12.33	192.	59.	43.	1.22		
2 COMBINED AT	102B	4851.	13.50	1650.	515.	373.	11.56		
ROUTED TO	DET2BE	4348.	13.67	1636.	515.	372.	11.56	1647.43	13.83
DIVERSION TO	SPILL	751.	13.67	45.	11.	8.	11.56		
HYDROGRAPH AT	FRWAY	3605.	13.83	1590.	503.	364.	11.56		
ROUTED TO	CHAN	3602.	14.00	1589.	503.	364.	11.56		

ROUTED TO	WASH	3520.	14.33	1585.	503.	364.	11.56		
HYDROGRAPH AT	RSPILL	751.	13.67	45.	11.	8.	11.56		
ROUTED TO	IDAHO	741.	13.83	45.	11.	8.	11.56		
2 COMBINED AT	WW	3663.	14.00	1631.	515.	372.	11.56		
ROUTED TO	RWW	3433.	15.33	1622.	514.	372.	11.56		
HYDROGRAPH AT	2BWW	346.	12.33	73.	23.	16.	.45		
HYDROGRAPH AT	2BWE	631.	12.17	112.	35.	25.	.70		
ROUTED TO	DET2BW	194.	12.67	97.	34.	25.	.70	1627.96	13.00
2 COMBINED AT	CO04	446.	12.33	164.	55.	40.	1.15		
DIVERSION TO	EXIT	0.	.17	0.	0.	0.	1.15		
HYDROGRAPH AT	NDIV	446.	12.33	164.	55.	40.	1.15		
ROUTED TO	NDROUT	435.	12.50	164.	55.	40.	1.15	1625.15	12.33
ROUTED TO	R2BW	406.	12.83	164.	55.	40.	1.15		
HYDROGRAPH AT	2BS	1456.	12.17	273.	84.	61.	1.91		
3 COMBINED AT	102	3491.	15.33	1792.	612.	443.	14.62		
HYDROGRAPH AT	5	3247.	12.67	952.	296.	214.	5.65		
ROUTED TO	R5	3263.	12.67	952.	296.	214.	5.65		
HYDROGRAPH AT	4	4484.	13.17	1957.	616.	446.	11.85		
2 COMBINED AT	104	6398.	13.00	2661.	835.	604.	17.50		
ROUTED TO	R104	6107.	13.50	2656.	835.	604.	17.50		
HYDROGRAPH AT	7	652.	12.17	114.	35.	26.	.61		
HYDROGRAPH AT	6	3094.	13.00	1200.	374.	271.	7.86		
3 COMBINED AT	106	7930.	13.33	3502.	1103.	798.	25.97		
ROUTED TO	R106	7721.	13.67	3498.	1103.	798.	25.97		
HYDROGRAPH AT	3N	2361.	12.33	499.	154.	112.	2.89		
ROUTED TO	CULV	2206.	12.33	499.	154.	112.	2.89	1667.53	12.33
ROUTED TO	RCULV	1936.	12.83	498.	154.	112.	2.89		
HYDROGRAPH AT	3S	1913.	12.33	415.	128.	93.	2.39		
2 COMBINED AT	103	2884.	12.67	893.	277.	200.	5.28		
HYDROGRAPH AT	3A	1054.	12.33	221.	68.	50.	1.20		
2 COMBINED AT	CP103	3634.	12.50	1097.	340.	246.	6.48		

2 COMBINED AT	W103	8352.	13.50	4134.	1308.	947.	32.45		
ROUTED TO	RW103	8302.	13.67	4131.	1308.	947.	32.45		
2 COMBINED AT	PLD	7954.	13.83	4951.	1610.	1165.	47.07		
ROUTED TO	RES	153.	27.17	153.	133.	114.	47.07	1580.54	27.17

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.75	1.75	180.	5937.	1.00	13.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1650.90	.90	167.	4531.	.67	13.67	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1648.99	.00	137.	3214.	.00	13.83	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1647.43	.00	114.	2711.	.00	13.83	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BW

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.74	.74	31.	300.	1.00	12.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1629.83	.00	27.	131.	.00	13.00	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1628.65	.00	21.	107.	.00	13.00	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1627.96	.00	17.	92.	.00	13.00	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.87	.00	2.	530.	.00	12.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.14	.00	1.	398.	.00	12.33	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1625.59	.00	1.	317.	.00	12.33	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1625.15	.00	1.	257.	.00	12.33	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1584.25	.00	4672.	1703.	.00	20.67	.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1583.67	.00	4384.	653.	.00	25.67	.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1581.93	.00	3608.	158.	.00	27.17	.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1580.54	.00	3052.	152.	.00	27.17	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING        30-DEC-88        7:17:57
```

```
PROCESS 56 TERMINATED

ELAPSED TIME  0:00:50, CPU TIME  00:00:00.090, I/O BLOCKS  58
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF        30-DEC-88        7:17:58


****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix D

HEC-1 Output

Powerline F.R.S.
Future Conditions and Assumptions
Hydrology for the Probable Maximum Flood
(6 Hour Duration)
(Alternative G)

DEST=HYD.WSM USER=HYD.WSM QUEUE=LPT DEVICE=@LPB
SEQ=500 QPRI=128 CPL=132 LPP=66 COPIES=1 PAGES=78

CREATED: 05-JAN-89 14:32:30
ENQUEUED: 05-JAN-89 14:35:40
PRINTING: 05-JAN-89 14:35:41

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:POWERLINE.OUT

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00    5-JAN-89        14:32:32
QPRI=128          SEQ=498
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?31.CLI.00001.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.498

--------
LAST MESSAGE CHANGE      17-NOV-88        14:55:52

                ***************          *******        ***********
                ************        ************        ***********
                ***                 ****      ***        ***      ***
               *******             ***                  ***      ***
              ******             ***                   ***      ***
             ***                ***       ***         ***      ***
            ****                ***********         ************
           ******                *******          ************

--------
MOST RECENT LOGON         5-JAN-89        14:25:50

AOS/VS CLI    REV 07.62.00.00      5-JAN-89        14:32:33
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:UDD:OP/:PER/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
) LISTFILE POWERLINE.OUT
) DATAFILE POWERLINE.DAT
) SEA :UTIL:HEC1.DIR/[!SEA]
) X HEC1_START
```

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             FEBRUARY 1981             *
*            REVISED 31 JAN 85          *
*                                       *
*  RUN DATE 1/ 5/1989   TIME14:32:36 *
*                                       *
*****************************************
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*  (916) 440-3285 OR (FTS) 448-3285   *
*                                       *
*****************************************
```

```
X     X  XXXXXXX   XXXXX            X
X     X  X         X     X         XX
X     X  X         X               X
XXXXXXX  XXXX      X         XXXXX  X
X     X  X         X               X
X     X  X         X     X         X
X     X  XXXXXXX   XXXXX           XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID      WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID      CONVERSION OF MODEL FROM TR-20
  3           ID                  1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
  4           ID                  DEVELOPMENT, MUSKINGUM ROUTING
  5           ID         CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                          POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                       2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                          AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                          LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                       3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                       4: ADJUSTED WATERSHED AREAS.
 12           ID                       5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                       6: NO MODIFICATIONS TO POWERLINE F.R.S.
              *DIAGRAM
 14           IT      10        0        0      400
 15           IO       5
 16           JR    FLOW       .5      1.0

 17           KK      15  WATERSHED 15
 18           KM      HYDROGRAPH FOR WATERSHED 15
 19           BA   11.08
 20           IN      60
 21           PI     .47      .81     7.02     1.71     0.75      .32
 22           BA    1.76
 23           LS       0       80
 24           UD     .18

 25           KK     R15 ROUTE HYDROGRAPH FROM WS 15
 26           KM     ROUTE HYDROGRAPH FROM WATERSHED 15
 27           RM       1      .11       .3

 28           KK      14 WATERSHED 14
 29           KM     HYDROGRAPH FOR WATERSHED 14
 30           BA    1.11
 31           LS       0       79
 32           UD     .15

 33           KK      16 WATERSHED 16
 34           KM     HYDROGRAPH FOR WATERSHED 16
 35           BA    2.16
 36           LS       0       82
 37           UD     .35

 38           KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
 39           KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
 40           HC       3

 41           KK    R114 ROUTE CP 114
 42           KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
 43           RM       1      .17       .3
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 44           KK      13 WATERSHED 13
 45           KM     HYDROGRAPH FOR WATERSHED 13
 46           BA    1.29
 47           LS       0       83
 48           UD    .126

 49           KK     113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
 50           KM     COMBINE HYDROGRAPHS CP 114 AND WS 13
 51           HC       2

 52           KK    R113 ROUTE CP 113 TO CP 112
 53           KM     ROUTE HYDROGRAPH FOR CP 113
 54           RM       1      .19       .3

 55           KK      12 WATERSHED 12
 56           KM     HYDROGRAPH FOR WATERSHED 12
 57           BA    1.32
 58           LS       0       86
 59           UD     .27

 60           KK     112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
 61           KM     COMBINE HYDROGRAPH FROM CP 113 AND WS 12
 62           HC       2

 63           KK    R112 ROUTE CP 112 TO CP 111
 64           KM     ROUTE HYDROGRAPH CP 112 TO CP 111
 65           RM       1      .07       .3

 66           KK      11 WATERSHED 11
 67           KM     HYDROGRAPH FOR WATERSHED 11
 68           BA     .70
 69           LS       0       89
 70           UD    .186

 71           KK      17 WATERSHED 17
 72           KM     HYDROGRAPH FOR WATERSHED 17
 73           BA     .37
 74           LS       0       79
 75           UD    .136

 76           KK      10   WATERSHED 10
 77           KM     HYDROGRAPH FOR WATERSHED 10
 78           BA     .54
 79           LS       0       79
 80           UD     .14

 81           KK     111 CONCENTRATION PT. 111
 82           KM     COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
 83           HC       4
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  84          KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  85          KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  86          RM       5      .64       .3

  87          KK      2A  WATERSHED 2A
  88          KM      HYDROGRAPH FOR WATERSHED 2A
  89          BA    1.09
  90          LS       0       82
  91          UD     .22

  92          KK    CP2A  CONCENTRATION POINT 2A
  93          KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
  94          HC       2

  95          KK    FLOW    POINT OF DIVERSION FOR WEEKES WASH
  96          KO       3
  97          DT  DIVERT
  98          DI       0    6500    7000    9000   10000   15000
  99          DQ       0       0     260    1300    1880    4600

 100          KK    RH2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
 101          KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 102          RM       2      .42       .3

 103          KK     2BE WATERSHED 2B EAST
 104          KM     HYDROGRAPH FOR WATERSHED 2B EAST
 105          BA    1.22
 106          LS       0       82
 107          UD     .48

 108          KK    102B  CONCENTRATION POINT NORTH OF FREEWAY
 109          KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 110          HC       2

 111          KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 112          KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 113          KM      PRINCIPLE OUTLET IS 2-12 X 12 (FOOT) BOX CULVERTS
 114          KM      INVERT IS AT 1636; EMERGENCY SPILLWAY CREST IS AT 1650.
 115          RS       1    ELEV    1636
 116          SV       0     6.0    13.0    29.0    47.0    69.0    93.0   122.0   153.0   134.0
 117          SV     217     239
 118          SE    1636    1637    1638    1640    1642    1644    1646    1648    1650    1652
 119          SE    1654    1655
 120          SQ       0      22     194     584    1050    1604    2236    2900    3534    4108
 121          SQ    4622    4860
 122          ST    1650     320     2.2     1.5

 123          KK   FRWAY
 124          KM    DIVERT ALL FLOWS FROM EMERGENCY SPILLWAY
 125          DT   SPILL
 126          DI       0    3665    5000   10000   15000
 127          DQ       0       0    1335    6335   11335
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 128          KK     CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 129          KM      ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 130          RM        1       .1       .3

 131          KK     WASH   ROUTE FLOWS THROUGH THE WASH
 132          KM       ROUTE FLOWS THRCUGH THE NATURAL WASH SYSTEM
 133          RM        2      .50       .3

 134          KK   RSPILL
 135          KM     RETRIEVE FLOW DIVERTED FROM THE EMERGENCY SPILLWAY
 136          DR    SPILL

 137          KK    IDAHO
 138          KM     RCUTE THE RETRIEVED FLOW DOWN IDAHO RD.
 139          RM        1       .1       .3

 140          KK       WW
 141          KM      COMBINE ALL FLOWS FROM FREEWAY
 142          HC        2

 143          KK      RWW
 144          KM      ROUTE FLOWS TO POWERLINE F.R.S.
 145          RM        4      .98       .3

 146          KK     2BWW  WATERSHED 2B WEST, WEST
 147          KM       HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 148          BA      .45
 149          LS        0       82
 150          UD       .4

 151          KK     2BWE  WATERSHED 2B WEST, EAST
 152          KM      RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 153          BA      .70
 154          LS        0       82
 155          UD       .3

 156          KK     16BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 157          KM       ROUTE FLOWS THRCUGH THE DETENTION NOPTH OF THE SUPERSTITION FREEWAY
 158          RS        1     ELEV  1623.5
 159          SV        0       .6      8.3     17.5     28.2     36.0     48.6
 160          SE   1623.5   1624.0   1626.0   1628.0   1630.0   1632.0   1634.0
 161          SQ        0        0       31       93      135      169      208
 162          ST   1630.0      110      2.2      1.5

 163          KK     CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 164          KM     COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 165          HC        2

 166          KK     NDIV
 167          KM     DIVERSION OF FLOW OVER THE NORTH DIVERSION DAM.
 168          KO        3
 169          DT     EXIT
 170          DI        0     1218     5000    10000
 171          DQ        0        0     3782     3782
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 172          KK  NDROUT  ROUTE THROUGH THE FREEWAY
 173          KM    ROUTE COMBINED FLOW THROUGH 2 - 10  X 8  BOX CULVERTS
 174          RS       1     ELEV  1622.6
 175          SV       0     0.02     0.16     1.12     4.17    25.42
 176          SE  1622.5  1623.0  1624.0  1626.0  1628.0  1630.0
 177          SQ       0       0      101      372      738    1111
 178          ST  1630.0    2875      2.2      1.5

 179          KK    R2BW  ROUTE TO CP102
 180          KM     ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 181          RM       2     .40      .3

 182          KK     2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 183          KM     HYDROGRAPH FOR WATERSHED 2B SOUTH
 184          BA    1.91
 185          LS       0      80
 186          UD     .32

 187          KK     102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 188          KM     COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 189          HC       3

 190          KK       5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 191          KM     HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 192          BA    5.65
 193          LS       0      85
 194          UD     .71

 195          KK      R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 196          KM      ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 197          RM       1     .07      .3

 198          KK       4 WATERSHED 4
 199          KM      HYDROGRAPH FOR WATERSHED 4
 200          BA   11.85
 201          LS       0      86
 202          UD    1.30

 203          KK     104  CONCENTRATION POINT 104
 204          KM     COMBINE HYDROGRAPHS AT CP 104
 205          HC       2

 206          KK    R104
 207          KM    ROUTE CP 104 TO 106
 208          RM       2     .50      .3

 209          KK       7  WATERSHED 7
 210          KM    HYDROGRAPH FOR WATERSHED 7
 211          BA     .61
 212          LS       0      86
 213          UD      .3
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 214          KK        6 WATERSHED 6
 215          KM       HYDROGRAPH FOR WATERSHED 6
 216          BA     7.86
 217          LS        0       83
 218          UD     1.08

 219          KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 220          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 221          HC        3

 222          KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 223          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 224          RM        1      .27       .3

 225          KK       3N WATERSHED 3N
 226          KM       HYDROGRAPH FOR WATERSHED 3N
 227          BA     2.89
 228          LS        0       85
 229          UD      .41

 230          KK     CULV   ROUTE FLOWS THROUGH CULVERTS
 231          KM      ROUTE FLOWS THROUGH THE CULVERTS
 232          RS      1.0     ELEV     1665
 233          SV        0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
 234          SE     1665   1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 235          SQ        0      119      375      688     1063     1462     1938     2375     2875     3375

 236          KK    RCULV  ROUTE FLOWS TO W103
 237          KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
 238          RM        2       .5       .3

 239          KK       3S  WATERSHED 3 SOUTH
 240          KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
 241          BA     2.39
 242          LS        0       85
 243          UD     .436

 244          KK      103
 245          HC        2

 246          KK       3A   WATERSHED 3A
 247          KM      HYDROGRAPH FOR WATERSHED 3A
 248          BA     1.20
 249          LS        0       86
 250          UD       .4

 251          KK    CP103
 252          KM      CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 253          HC        2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 254          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 255          KM      COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 256          HC       2

 257          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 258          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 259          RM       1      .16       .3

 260          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 261          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 262          KO       3
 263          HC       2

 264          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 265          KM     RESERVOIR RATING CURVE
 266          RS       1     ELEV  1568.2
 267          SV       0      175      380      700     1100     1600     2175     2875     3675     4200
 268          SV    4600     5525     6725     7925
 269          SQ       0       75       92      106      119      130      141      150      159      165
 270          SQ    1228     7360    16800    27280
 271          SE  1568.1   1568.2   1570.0   1572.1   1574.1   1576.1   1578.1   1580.1   1582.1   1583.3
 272          SE  1584.1   1586.1   1588.1   1590.1
 273          SS  1583.3        0        0        0
 274          ST  1589.1    13358      2.2      1.5
 275          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE        (V) ROUTING          (--->) DIVERSION OR PUMP FLOW
  NO.        (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

  17           15
               V
               V
  25          R15
               .
               .
  28           .          14
               .           .
               .           .
  33           .           .          16
               .           .           .
               .           .           .
  38          114.........................
               V
               V
  41         R114
               .
               .
  44           .          13
               .           .
               .           .
  49          113............
               V
               V
  52         R113
               .
               .
  55           .          12
               .           .
               .           .
  60          112............
               V
               V
  63         R112
               .
               .
  66           .          11
               .           .
               .           .
  71           .           .          17
               .           .           .
               .           .           .
  76           .           .           .          10
               .           .           .           .
               .           .           .           .
  81          111.......................................
               V
               V
  84        RD111
               .
               .
  87           .          2A
               .           .
               .           .
  92         CP2A............
               .
```

```
 97          .-------> DIVERT
 95       FLOW
             V
             V
100       RR2A
             .
             .
103          .         2FE
             .           .
             .           .
108       102E............
             V
             V
111     DET2BE
             .
             .
125          .------->   SPILL
123      FRWAY
             V
             V
126       CHAN
             V
             V
131       WASH
             .
             .
136          .           .<-------   SPILL
134          .      RSPILL
             .           V
             .           V
137          .       IDAHO
             .           .
             .           .
140         WW............
             V
             V
143        RWW
             .
             .
146          .        2BWW
             .           .
             .           .
151          .           .        2BWE
             .           .           V
             .           .           V
156          .           .        16BW
             .           .           .
             .           .           .
163          .        C004............
             .           .
             .           .
169          .           .------->    EXIT
166          .        NDIV
             .           V
             .           V
172          .      NDROUT
             .           V
             .           V
179          .        R2BW
             .           .
             .           .
182          .           .         2BS
```

```
                .          .          .
                .          .          .
187           102.......................
                .
                .
190             .          5
                .          V
                .          V
195             .         P5
                .          .
                .          .
198             .          .          4
                .          .          .
                .          .          .
203             .        104...........
                .          V
                .          V
206             .       R104
                .          .
                .          .
209             .          .          7
                .          .          .
                .          .          .
214             .          .          .          6
                .          .          .          .
                .          .          .          .
219             .        106.......................
                .          V
                .          V
222             .       R106
                .          .
                .          .
225             .          .         3N
                .          .          V
                .          .          V
230             .          .       CULV
                .          .          V
                .          .          V
236             .          .      RCULV
                .          .          .
                .          .          .
239             .          .          .         3S
                .          .          .          .
                .          .          .          .
244             .          .        103...........
                .          .          .
                .          .          .
246             .          .          .         3A
                .          .          .          .
                .          .          .          .
251             .          .      CP103...........
                .          .          .
                .          .          .
254             .       W103...........
                .          V
                .          V
257             .      RW103
                .          .
                .          .
260           PLD...........
                V
                V
264           RES
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             FEBRUARY 1981             *
*           REVISED 31 JAN 85           *
*                                       *
*  RUN DATE 1/ 5/1989   TIME14:32:50 *
*                                       *
*****************************************
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*  (916) 440-3285 OR (FTS) 448-3285     *
*                                       *
*****************************************
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```
                    WEEKES WASH - POWERLINE F.P.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                                 1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
                                 DEVELOPMENT, MUSKINGUM ROUTING
                       CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                        POINT OF WEEKES WASH AT JUNCTION ROAD.
                                     2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                        AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                        LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                     3: SUPERSTITION FREEWAY IN PLACE.
                                     4: ADJUSTED WATERSHED AREAS.
                                     5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                     6: NO MODIFICATIONS TO POWERLINE F.R.S.

 15 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN          10  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         400  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3    0  ENDING DATE
                     NDTIME       1830  ENDING TIME

                  COMPUTATION INTERVAL      .17 HOURS
                       TOTAL TIME BASE   66.50 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

    JP          MULTI-PLAN OPTION
                      NPLAN           1  NUMBER OF PLANS

    JP          MULTI-RATIO OPTION
                    RATIOS OF RUNOFF
                    .50      1.00

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 95 KK      *      FLOW  *          POINT OF DIVERSION FOR WEEKES WASH
            *            *
            **************

 96 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

    DT          DIVERSION
                     ISTAQ      DIVERT  DIVERSION HYDROGRAPH IDENTIFICATION

    DI             INFLOW        .00   6500.00   7000.00   9000.00  10000.00  15000.00

    DQ      DIVERTED FLOW        .00       .00    260.00   1300.00   1880.00   4600.00
                                                                  ***

     ***            ***            ***            ***            ***

                       DIVERSION HYDROGRAPH   DIVERT
                         FOR PLAN 1, RATIO =  .50

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     66.50-HR
   4965.      3.83        (CFS)     829.        207.         75.         75.
                        (INCHES)    .745        .745        .745        .745
                         (AC-FT)    411.        411.        411.        411.

                       CUMULATIVE AREA =   10.34 SQ MI

     ***            ***            ***            ***            ***

                       HYDROGRAPH AT STATION     FLOW
                         FOR PLAN 1, RATIO =  .50

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     66.50-HR
  10706.      3.83        (CFS)    4079.       1022.        369.        369.
                        (INCHES)   3.668       3.676       3.676       3.676
```

```
                    (AC-FT)      2023.        2027.        2027.        2027.

                    CUMULATIVE AREA =    10.34 SQ MI

     ***            ***            ***            ***            ***

                     DIVERSION HYDROGRAPH   DIVERT
                       FOR PLAN 1, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                   6-HR       24-HR       72-HR      66.50-HR
   13490.       3.83        (CFS)      2953.       738.        266.         266.
                         (INCHES)     2.656       2.656       2.656        2.656
                          (AC-FT)     1464.       1464.       1464.        1464.

                    CUMULATIVE AREA =    10.34 SQ MI

     ***            ***            ***            ***            ***

                     HYDROGRAPH AT STATION      FLOW
                       FOR PLAN 1, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                   6-HR       24-HR       72-HR      66.50-HR
   17352.       3.83        (CFS)      6862.       1720.       621.         621.
                         (INCHES)     6.170       6.187       6.187        6.187
                          (AC-FT)     3402.       3412.       3412.        3412.

                    CUMULATIVE AREA =    10.34 SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 166 KK     *     NDIV   *
            *            *
            **************

 168 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          3  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE

     DT          DIVERSION
                      ISTAD       EXIT  DIVERSION HYDROGRAPH IDENTIFICATION

     DI             INFLOW        .00   1218.00   5000.00  10000.00

     DQ      DIVERTED FLOW        .00       .00   3782.00   8782.00

                                                                  ***
```

```
***          ***          ***          ***          ***

                DIVERSION HYDROGRAPH      EXIT
                  FOR PLAN 1, RATIO =  .50

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     66.50-HR
   927.       3.17        (CFS)      87.         22.          8.          8.
                        (INCHES)    .705        .705        .705        .705
                         (AC-FT)    43.         43.         43.         43.

                CUMULATIVE AREA =     1.15 SQ MI

***          ***          ***          ***          ***

                HYDROGRAPH AT STATION     NDIV
                  FOR PLAN 1, RATIO =  .50

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     66.50-HR
  1218.       2.83        (CFS)     431.        114.         41.         41.
                        (INCHES)   3.483       3.696       3.698       3.698
                         (AC-FT)   214.        227.        227.        227.

                CUMULATIVE AREA =     1.15 SQ MI

***          ***          ***          ***          ***

                DIVERSION HYDROGRAPH      EXIT
                  FOR PLAN 1, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     66.50-HR
  3105.       3.17        (CFS)     450.        112.         41.         41.
                        (INCHES)   3.635       3.635       3.635       3.635
                         (AC-FT)   223.        223.        223.        223.

                CUMULATIVE AREA =     1.15 SQ MI

***          ***          ***          ***          ***

                HYDROGRAPH AT STATION     NDIV
                  FOR PLAN 1, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     66.50-HR
  1213.       2.67        (CFS)     607.        160.         58.         58.
                        (INCHES)   4.911       5.180       5.182       5.182
                         (AC-FT)   301.        318.        318.        318.

                CUMULATIVE AREA =     1.15 SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
```

```
*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 260 KK     *     PLD    *      CONCENTRATION PT. AT POWERLINE DAM
            *            *
            **************

 262 KO          OUTPUT CONTROL VARIABLES
                      IPRNT            3  PRINT CONTROL
                      IPLOT            0  PLOT CONTROL
                      QSCAL           0.  HYDROGRAPH PLOT SCALE

 263 HC          HYDROGRAPH COMBINATION
                      ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

     ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION      PLD
                          FOR PLAN 1, RATIO =  .50

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                  6-HR       24-HR       72-HR     66.50-HR
   40324.       4.67        (CFS)    21294.      5516.       1991.       1991.
                         (INCHES)    4.206      4.358       4.358       4.358
                          (AC-FT)    10559.     10941.      10941.      10941.

                        CUMULATIVE AREA =   47.07 SQ MI

     ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION      PLD
                          FOR PLAN 1, RATIO = 1.00

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                  6-HR       24-HR       72-HR     66.50-HR
   80002.       4.50        (CFS)    41158.     10641.      3840.       3840.
                         (INCHES)    8.130      8.407       8.407       8.407
                          (AC-FT)    20409.     21106.      21106.      21106.

                        CUMULATIVE AREA =   47.07 SQ MI
```

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO FLOWS RATIO 1 .50	RATIO 2 1.00
HYDROGRAPH AT	15	1.76	1	FLOW	3601.	7203.
				TIME	3.00	3.00
ROUTED TO	R15	1.76	1	FLOW	3502.	7003.
				TIME	3.00	3.00
HYDROGRAPH AT	14	1.11	1	FLOW	2274.	4548.
				TIME	3.00	3.00
HYDROGRAPH AT	16	2.16	1	FLOW	4079.	8157.
				TIME	3.00	3.00
3 COMBINED AT	114	5.03	1	FLOW	9855.	19709.
				TIME	3.00	3.00
ROUTED TO	R114	5.03	1	FLOW	9562.	19125.
				TIME	3.17	3.17
HYDROGRAPH AT	13	1.29	1	FLOW	2748.	5495.
				TIME	3.00	3.00
2 COMBINED AT	113	6.32	1	FLOW	11803.	23606.
				TIME	3.00	3.00
ROUTED TO	R113	6.32	1	FLOW	11365.	22730.
				TIME	3.17	3.17
HYDROGRAPH AT	12	1.32	1	FLOW	2743.	5485.
				TIME	3.00	3.00
2 COMBINED AT	112	7.64	1	FLOW	13857.	27714.
				TIME	3.17	3.17
ROUTED TO	R112	7.64	1	FLOW	13590.	27181.
				TIME	3.17	3.17
HYDROGRAPH AT	11	.70	1	FLOW	1531.	3061.
				TIME	3.00	3.00
HYDROGRAPH AT	17	.37	1	FLOW	761.	1521.
				TIME	3.00	3.00
HYDROGRAPH AT	10	.54	1	FLOW	1109.	2219.
				TIME	3.00	3.00
4 COMBINED AT	111	9.25	1	FLOW	15971.	31942.
				TIME	3.17	3.17
ROUTED TO	RD111	9.25	1	FLOW	15054.	30107.
				TIME	3.83	3.83
HYDROGRAPH AT	2A	1.09	1	FLOW	2236.	4471.

				TIME	3.00	3.00
2 COMBINED AT	CP2A	10.34	1	FLOW	15671.	31342.
				TIME	3.83	3.83
DIVERSION TO	DIVERT	10.34	1	FLOW	4965.	13490.
				TIME	3.83	3.83
HYDROGRAPH AT	FLOW	10.34	1	FLOW	10706.	17852.
				TIME	3.83	3.83
ROUTED TO	RR2A	10.34	1	FLOW	10396.	17236.
				TIME	4.17	4.17
HYDROGRAPH AT	2PE	1.22	1	FLOW	2150.	4299.
				TIME	3.17	3.17
2 COMBINED AT	1C2B	11.56	1	FLOW	11185.	18814.
				TIME	4.17	4.17
ROUTED TO	DET2BE	11.56	1	FLOW	11040.	18571.
				TIME	4.33	4.17
			** PEAK STAGES IN FEET **			
			1	STAGE	1654.33	1657.06
				TIME	4.33	4.17
DIVERSION TO	SPILL	11.56	1	FLOW	7375.	14906.
				TIME	4.33	4.17
HYDROGRAPH AT	FRWAY	11.56	1	FLOW	3665.	3665.
				TIME	3.33	3.00
ROUTED TO	CHAN	11.56	1	FLOW	3685.	3694.
				TIME	3.50	3.17
ROUTED TO	WASH	11.56	1	FLOW	3665.	3665.
				TIME	5.83	6.17
HYDROGRAPH AT	RSPILL	.00	1	FLOW	7375.	14906.
				TIME	4.33	4.17
ROUTED TO	IDAHO	.00	1	FLOW	7371.	14935.
				TIME	4.33	4.33
2 COMBINED AT	WW	11.56	1	FLOW	10998.	18592.
				TIME	4.33	4.33
ROUTED TO	RWW	11.56	1	FLOW	10296.	17380.
				TIME	5.33	5.33
HYDROGRAPH AT	2BWW	.45	1	FLOW	828.	1656.
				TIME	3.17	3.17
HYDROGRAPH AT	2BWE	.70	1	FLOW	1372.	2745.
				TIME	3.00	3.00
ROUTED TO	16BW	.70	1	FLOW	1317.	2667.
				TIME	3.17	3.17
			** PEAK STAGES IN FEET **			
			1	STAGE	1632.80	1634.67
				TIME	3.17	3.17

2 COMBINED AT	CC04	1.15	1	FLOW	2145.	4323.
				TIME	3.17	3.17
DIVERSION TO	EXIT	1.15	1	FLOW	927.	3105.
				TIME	3.17	3.17
HYDROGRAPH AT	NDIV	1.15	1	FLOW	1218.	1218.
				TIME	2.83	2.67
ROUTED TO	NDRCUT	1.15	1	FLOW	1070.	1218.
				TIME	3.67	3.83
			** PEAK STAGES IN FEET **			
			1	STAGE	1629.78	1630.06
				TIME	3.67	3.83
ROUTED TO	R2BW	1.15	1	FLOW	1049.	1210.
				TIME	4.00	4.33
HYDROGRAPH AT	2BS	1.91	1	FLOW	3600.	7200.
				TIME	3.00	3.00
3 COMBINED AT	102	14.62	1	FLOW	11009.	19069.
				TIME	5.33	5.17
HYDROGRAPH AT	5	5.65	1	FLOW	8877.	17753.
				TIME	3.33	3.33
ROUTED TO	R5	5.65	1	FLOW	8800.	17600.
				TIME	3.50	3.50
HYDROGRAPH AT	4	11.85	1	FLOW	13555.	27109.
				TIME	4.00	4.00
2 COMBINED AT	104	17.50	1	FLOW	20710.	41419.
				TIME	3.67	3.67
ROUTED TO	R104	17.50	1	FLOW	19890.	39781.
				TIME	4.17	4.17
HYDROGRAPH AT	7	.61	1	FLOW	1247.	2494.
				TIME	3.00	3.00
HYDROGRAPH AT	6	7.86	1	FLOW	9600.	19201.
				TIME	3.83	3.83
3 COMBINED AT	106	25.97	1	FLOW	28791.	57583.
				TIME	4.17	4.17
ROUTED TO	R106	25.97	1	FLOW	28308.	56615.
				TIME	4.33	4.33
HYDROGRAPH AT	3N	2.89	1	FLOW	5465.	10931.
				TIME	3.17	3.17
ROUTED TO	CLLV	2.89	1	FLOW	5186.	10358.
				TIME	3.17	3.17
			** PEAK STAGES IN FEET **			
			1	STAGE	1671.31	1676.48
				TIME	3.17	3.17

ROUTED TO	RCULV	2.39	1	FLOW	4833.	9623.
				TIME	3.67	3.67
HYDROGRAPH AT	3S	2.39	1	FLOW	4469.	8939.
				TIME	3.17	3.17
2 COMBINED AT	103	5.28	1	FLOW	7872.	15586.
				TIME	3.33	3.33
HYDROGRAPH AT	3A	1.20	1	FLOW	2300.	4599.
				TIME	3.17	3.17
2 COMBINED AT	CP103	6.48	1	FLOW	9947.	19536.
				TIME	3.33	3.33
2 COMBINED AT	W103	32.45	1	FLOW	33359.	66720.
				TIME	4.17	4.17
ROUTED TO	RW103	32.45	1	FLOW	33166.	66343.
				TIME	4.33	4.33
2 COMBINED AT	PLD	47.07	1	FLOW	40324.	80002.
				TIME	4.67	4.50
ROUTED TO	RES	47.07	1	FLOW	20061.	76225.
				TIME	6.33	5.00

** PEAK STAGES IN FEET **

1	STAGE	1588.72	1590.47
	TIME	6.33	5.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2PE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1654.33	4.33	224.	11040.	2.83	4.33	.00
1.00	1657.06	7.06	284.	18571.	3.83	4.17	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION 168W

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1632.80	2.80	41.	1317.	3.00	3.17	.00
1.00	1634.67	4.67	53.	2667.	4.00	3.17	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDPOUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1629.78	.00	23.	1070.	.00	3.67	.00
1.00	1630.06	.06	26.	1218.	.83	3.83	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1588.72	.00	7098.	20061.	.00	6.33	.00
1.00	1590.47	1.37	8146.	76225.	2.83	5.00	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING          5-JAN-89        14:33:21

PROCESS 52 TERMINATED

ELAPSED TIME  0:00:48, CPU TIME  00:00:00.091, I/O BLOCKS  55
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF         5-JAN-89        14:33:20

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix E

HEC-1 Output

Powerline F.R.S.
Future Conditions and Assumptions
Hydrology for the Probable Maximum Flood
(72 Hour Duration)
(Alternative G)

```
+7777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777+

$   $  $   $  $$$$          $   $   $$$   $   $
$   $  $   $  $   $         $   $  $   $  $$ $$
$   $   $ $   $   $         $   $  $      $ $ $
$$$$$    $    $   $         $ $ $   $$$   $ $ $
$   $    $    $   $         $ $ $      $  $   $
$   $    $    $   $    $$   $$ $$  $   $  $   $
$   $    $    $$$$     $$   $   $   $$$   $   $

DEST=HYD.WSM  USER=HYD.WSM  QUEUE=LPT  DEVICE=@LPB
SEQ=320  QPRI=128  CPL=132  LPP=66  COPIES=1  PAGES=69

CREATED:   29-DEC-88  13:32:20
ENQUEUED:  29-DEC-88  13:33:54
PRINTING:  29-DEC-88  13:33:55

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:72PMP.OUT

$$$$$   $$$   $$$$   $   $  $$$$           $$$   $   $  $$$$$
    $  $   $  $   $  $$ $$  $   $         $   $  $   $    $
   $       $  $   $  $ $ $  $   $         $   $  $   $    $
  $      $$   $$$$   $ $ $  $$$$          $   $  $   $    $
 $      $     $      $   $  $             $   $  $   $    $
 $     $      $      $   $  $        $$   $   $  $   $    $
 $     $$$$$  $      $   $  $        $$    $$$    $$$     $

+7777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777+


AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00
```

```
**** AOS/VS REV 7.62.00.CC / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00  29-DEC-88        13:32:22
QPRI=128          SEQ=318
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?59.CLI.00003.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.318

--------
LAST MESSAGE CHANGE      17-NOV-88        14:55:52

                *****************          *******        ************
                *************        *************        *************
                ***                 ****      ***          ***      ***
               *******             ***                    ***      ***
              ******              ***                    ***      ***
             ***                 ***       ***          ***      ***
            ****                 ************         **************
          ******                  *******          **************


--------
MOST RECENT LOGON        29-DEC-88        13:17:44

AOS/VS CLI   REV 07.62.00.00     29-DEC-88        13:32:24
) SEARCHLIST :UTIL,:MACROS,:UDD:HYD.WSM,:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM,OWARE
)
)
) LISTFILE 72PMP.OUT
) DATAFILE 72PMP.DAT
) SEA :UTIL:HEC1.DIR,[!SEA]
) X HEC1_START
```

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             FEBRUARY 1981             *
*           REVISED 31 JAN 85           *
*                                       *
*  RUN DATE12/29/1985   TIME13:32:25 *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*  (916) 440-3285 OR (FTS) 448-3285   *
*                                       *
*****************************************
```

```
X      X  XXXXXXX   XXXXX            X
X      X  X         X     X         XX
X      X  X         X               X
XXXXXXX   XXXX      X        XXXXX  X
X      X  X         X               X
X      X  X         X     X         X
X      X  XXXXXXX   XXXXX           XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID      WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID      CONVERSION OF MODEL FROM TR-20
  3           ID                  1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
  4           ID                  DEVELOPMENT, MUSKINGUM ROUTING
  5           ID         CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                          POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                       2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                          AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                          LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                       3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                       4: ADJUSTED WATERSHED AREAS.
 12           ID                       5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                       6: NO MODIFICATIONS TO POWERLINE F.R.S.
              *DIAGRAM
 14           IT      10        0        0     400
 15           IO       5
 16           JR    FLOW       .5      1.0

 17           KK      15  WATERSHED 15
 18           KM      HYDROGRAPH FOR WATERSHED 15
 19           PB   14.72
 20           IN     360
 21           PI   1.045    2.157    6.751    1.220     .609     .609     .609     .609     .282     .282
 22           PI    .282     .282
 23           BA   1.76
 24           LS      0       80
 25           UD    .18

 26           KK     R15 ROUTE HYDROGRAPH FROM WS 15
 27           KM     ROUTE HYDROGRAPH FROM WATERSHED 15
 28           RM       1      .11       .3

 29           KK      14 WATERSHED 14
 30           KM     HYDROGRAPH FOR WATERSHED 14
 31           BA   1.11
 32           LS      0       79
 33           UD    .15

 34           KK      16 WATERSHED 16
 35           KM     HYDROGRAPH FOR WATERSHED 16
 36           BA   2.16
 37           LS      0       82
 38           UD    .35

 39           KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
 40           KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
 41           HC      3

 42           KK    R114 ROUTE CP 114
 43           KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
 44           RM       1      .17       .3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  45          KK       13 WATERSHED 13
  46          KM      HYDROGRAPH FOR WATERSHED 13
  47          BA     1.29
  48          LS        0       83
  49          UD     .126

  50          KK      113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
  51          KM      COMBINE HYDROGRAPHS CP 114 AND WS 13
  52          HC        2

  53          KK     R113 ROUTE CP 113 TO CP 112
  54          KM      ROUTE HYDROGRAPH FOR CP 113
  55          RM        1      .19       .3

  56          KK       12 WATERSHED 12
  57          KM      HYDROGRAPH FOR WATERSHED 12
  58          BA     1.32
  59          LS        0       86
  60          UD      .27

  61          KK      112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
  62          KM      COMBINE HYDROGRAPH FROM CP 113 AND WS 12
  63          HC        2

  64          KK     R112 ROUTE CP 112 TO CP 111
  65          KM      ROUTE HYDROGRAPH CP 112 TO CP 111
  66          RM        1      .07       .3

  67          KK       11 WATERSHED 11
  68          KM      HYDROGRAPH FOR WATERSHED 11
  69          BA      .70
  70          LS        0       89
  71          UD     .186

  72          KK       17 WATERSHED 17
  73          KM      HYDROGRAPH FOR WATERSHED 17
  74          BA      .37
  75          LS        0       79
  76          UD     .138

  77          KK       10   WATERSHED 10
  78          KM      HYDROGRAPH FOR WATERSHED 10
  79          BA      .54
  80          LS        0       79
  81          UD      .14

  82          KK      111 CONCENTRATION PT. 111
  83          KM      COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
  84          HC        4
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  85          KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  86          KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  87          RM       5      .64       .3

  88          KK      2A  WATERSHED 2A
  89          KM      HYDROGRAPH FOR WATERSHED 2A
  90          BA    1.09
  91          LS       0       82
  92          UD     .22

  93          KK    CP2A  CONCENTRATION POINT 2A
  94          KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
  95          HC       2

  96          KK    FLOW    POINT OF DIVERSION FOR WEEKES WASH
  97          DT  DIVERT
  98          DI       0     6500     7000     9000    10000    15000
  99          DQ       0        0      260     1300     1880     4600

 100          KK    RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
 101          KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 102          RM       2      .42       .3

 103          KK     2BE WATERSHED 2B EAST
 104          KM     HYDROGRAPH FOR WATERSHED 2B EAST
 105          BA    1.22
 106          LS       0       82
 107          UD     .48

 108          KK    102B  CONCENTRATION POINT NORTH OF FREEWAY
 109          KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 110          HC       2

 111          KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 112          KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 113          KM      PRINCIPLE OUTLET IS 2-12 X 12 (FOOT) BOX CULVERTS
 114          KM      INVERT IS AT 1636; EMERGENCY SPILLWAY CREST IS AT 1650.
 115          RS       1    ELEV    1636
 116          SV       0      6.0     13.0     29.0     47.0     69.0     93.0    122.0    153.0    184.0
 117          SV     217      239
 118          SE    1636     1637     1638     1640     1642     1644     1646     1648     1650     1652
 119          SE    1654     1655
 120          SQ       0       22      194      584     1050     1604     2236     2900     3534     4108
 121          SQ    4622     4360
 122          ST    1650      320      2.2      1.5

 123          KK   FRWAY
 124          KM    DIVERT ALL FLOWS FROM EMERGENCY SPILLWAY
 125          DT   SPILL
 126          DI       0     3665     5000    10000    15000
 127          DQ       0        0     1335     6335    11335
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 128          KK     CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 129          KM      ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 130          RM        1       .1       .3

 131          KK     WASH   ROUTE FLOWS THROUGH THE WASH
 132          KM       ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 133          RM        2      .50       .3

 134          KK   RSPILL
 135          KM     RETRIEVE FLOW DIVERTED FROM THE EMERGENCY SPILLWAY
 136          DR    SPILL

 137          KK    IDAHO
 138          KM     ROUTE THE RETRIEVED FLOW DOWN IDAHO RD.
 139          RM        1       .1       .3

 140          KK       WW
 141          KM      COMBINE ALL FLOWS FROM FREEWAY
 142          HC        2

 143          KK      RWW
 144          KM      ROUTE FLOWS TO POWERLINE F.R.S.
 145          RM        4      .98       .3

 146          KK     2BWW  WATERSHED 2B WEST, WEST
 147          KM       HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 148          BA      .45
 149          LS        0       82
 150          UD       .4

 151          KK     2BWE  WATERSHED 2B WEST, EAST
 152          KM      RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 153          BA      .70
 154          LS        0       82
 155          UD       .3

 156          KK     16BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 157          KM       ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 158          RS        1     ELEV  1623.5
 159          SV        0       .6      8.3     17.5     28.2     36.0     48.6
 160          SE   1623.5   1624.0   1626.0   1628.0   1630.0   1632.0   1634.0
 161          SQ        0        0       31       93      135      169      208
 162          ST   1630.0      110      2.2      1.5

 163          KK     CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 164          KM     COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 165          HC        2

 166          KK     NDIV
 167          KM     DIVERSION OF FLOW OVER THE NORTH DIVERSION DAM.
 168          DT     EXIT
 169          DI        0     1218     5000    10000
 170          DQ        0        0     3782     8782
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9.......10

 171          KK  NDRCUT  ROUTE THROUGH THE FREEWAY
 172          KM    ROUTE COMBINED FLOW THROUGH 2 - 10  X 8  BOX CULVERTS
 173          RS       1     ELEV  1622.6
 174          SV       0     0.02     0.16     1.12     4.17    25.42
 175          SE  1622.6  1623.0  1624.0  1626.0  1628.0  1630.0
 176          SQ       0        0      101      372      738    1111
 177          ST  1630.0     2875      2.2      1.5

 178          KK    R2BW  ROUTE TO CP102
 179          KM     ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 180          RM       2     .40      .3

 181          KK     2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 182          KM     HYDROGRAPH FOR WATERSHED 2B SOUTH
 183          BA    1.91
 184          LS       0      80
 185          UD     .32

 186          KK     102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 187          KM     COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 188          HC       3

 189          KK       5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 190          KM     HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 191          BA    5.65
 192          LS       0      85
 193          UD     .71

 194          KK      R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 195          KM      ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 196          RM       1     .07      .3

 197          KK       4 WATERSHED 4
 198          KM      HYDROGRAPH FOR WATERSHED 4
 199          BA   11.85
 200          LS       0      86
 201          UD    1.30

 202          KK     104  CONCENTRATION POINT 104
 203          KM     COMBINE HYDROGRAPHS AT CP 104
 204          HC       2

 205          KK    R104
 206          KM    ROUTE CP 104 TO 106
 207          RM       2     .50      .3

 208          KK       7  WATERSHED 7
 209          KM    HYDROGRAPH FOR WATERSHED 7
 210          BA     .61
 211          LS       0      86
 212          UD      .3
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 213          KK        6 WATERSHED 6
 214          KM       HYDROGRAPH FOR WATERSHED 6
 215          BA     7.86
 216          LS        0       83
 217          UD     1.08

 218          KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 219          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 220          HC        3

 221          KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 222          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 223          RM        1      .27      .3

 224          KK       3N WATERSHED 3N
 225          KM       HYDROGRAPH FOR WATERSHED 3N
 226          BA     2.89
 227          LS        0       85
 228          UD      .41

 229          KK     CULV   ROUTE FLOWS THROUGH CULVERTS
 230          KM      ROUTE FLOWS THROUGH THE CULVERTS
 231          RS      1.0     ELEV    1665
 232          SV        0      .15     .60     1.5     3.1     5.6     9.1    13.7   19.45   26.35
 233          SE     1665  1665.5    1666  1666.5    1667  1667.5    1668  1668.5    1669  1669.5
 234          SQ        0     119     375     688    1063    1462    1938    2375    2875    3375

 235          KK    RCULV  ROUTE FLOWS TO W103
 236          KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
 237          RM        2       .5      .3

 238          KK       3S  WATERSHED 3 SOUTH
 239          KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
 240          BA     2.39
 241          LS        0       85
 242          UD     .436

 243          KK      103
 244          HC        2

 245          KK       3A   WATERSHED 3A
 246          KM      HYDROGRAPH FOR WATERSHED 3A
 247          BA     1.20
 248          LS        0       86
 249          UD       .4

 250          KK    CP103
 251          KM      CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 252          HC        2
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 253          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 254          KM      COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 255          HC        2

 256          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 257          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 258          RM        1      .16       .3

 259          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 260          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 261          HC        2

 262          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 263          KM     RESERVOIR RATING CURVE
 264          RS        1     ELEV  1568.2
 265          SV        0      175      380      700     1100     1600     2175     2875     3675     4200
 266          SV     4600     5525     6725     7925
 267          SQ        0       75       92      106      119      130      141      150      159      165
 268          SQ     1228     7360    16800    27280
 269          SE   1568.1   1568.2   1570.0   1572.1   1574.1   1576.1   1578.1   1580.1   1582.1   1583.3
 270          SE   1584.1   1586.1   1588.1   1590.1
 271          SS   1583.3        0        0        0
 272          ST   1589.1    13358      2.2      1.5
 273          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   17          15
                V
                V
   26         R15
                .
                .
   29           .          14
                .           .
                .           .
   34           .           .          16
                .           .           .
                .           .           .
   39        114.......................
                V
                V
   42       R114
                .
                .
   45           .          13
                .           .
                .           .
   50        113............
                V
                V
   53       R113
                .
                .
   56           .          12
                .           .
                .           .
   61        112............
                V
                V
   64       R112
                .
                .
   67           .          11
                .           .
                .           .
   72           .           .          17
                .           .           .
                .           .           .
   77           .           .           .          10
                .           .           .           .
                .           .           .           .
   82        111.......................................
                V
                V
   85      RD111
                .
                .
   88           .          2A
                .           .
                .           .
   93       CP2A............
                .
```

```
 97          .
             .-------> DIVERT
 96       FLOW
             V
             V
100       RR2A
             .
             .
103          .         2BE
             .           .
             .           .
108       102B............
             V
             V
111     DET2BE
             .
             .
125          .------->  SPILL
123      FRWAY
             V
             V
128       CHAN
             V
             V
131       WASH
             .
             .
136          .           .<-------   SPILL
134          .      RSPILL
             .           V
             .           V
137          .       IDAHO
             .           .
             .           .
140         WW............
             V
             V
143        RWW
             .
             .
146          .        2BWW
             .           .
             .           .
151          .           .        2BWE
             .           .           V
             .           .           V
156          .           .        16BW
             .           .           .
             .           .           .
163          .        COO4............
             .           .
             .           .
168          .           .------->    EXIT
166          .        NDIV
             .           V
             .           V
171          .      NDROUT
             .           V
             .           V
178          .        R2BW
             .           .
             .           .
181          .           .         2BS
```

```
186   102.......................
189                5
                   V
                   V
194               P5
197                          4
202              104............
                   V
                   V
205             R104
208                          7
213                                      6
218              106......................
                   V
                   V
221             R106
224                         3N
                             V
                             V
229                       CULV
                             V
                             V
235                      RCULV
238                                     3S
243                         103...........
245                                     3A
250                      CP103...........
253             W103............
                   V
                   V
256            PW103
259       PLD............
            V
            V
262       RES
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             FEBRUARY 1981            *
*           REVISED 31 JAN 85          *
*                                      *
*  RUN DATE12/29/1988   TIME13:32:37 * 
*                                      *
****************************************
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```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
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```
                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                                 1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
                                 DEVELOPMENT, MUSKINGUM ROUTING
                       CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                        POINT OF WEEKES WASH AT JUNCTION ROAD.
                                     2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                        AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                        LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                     3: SUPERSTITION FREEWAY IN PLACE.
                                     4: ADJUSTED WATERSHED AREAS.
                                     5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                     6: NO MODIFICATIONS TO POWERLINE F.R.S.

 15 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN          10  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         400  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3    0  ENDING DATE
                     NDTIME       1830  ENDING TIME

                  COMPUTATION INTERVAL     .17 HOURS
                       TOTAL TIME BASE   66.50 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

    JP            MULTI-PLAN OPTION
                       NPLAN           1  NUMBER OF PLANS

    JR            MULTI-RATIO OPTION
                     RATIOS OF RUNOFF
                     .50      1.00

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

					RATIOS APPLIED TO FLOWS	
OPERATION	STATION	AREA	PLAN		RATIO 1 .50	RATIO 2 1.00
HYDROGRAPH AT	15	1.76	1	FLOW	621.	1241.
				TIME	18.00	18.00
ROUTED TO	R15	1.76	1	FLOW	620.	1240.
				TIME	18.00	18.00
HYDROGRAPH AT	14	1.11	1	FLOW	390.	779.
				TIME	18.00	18.00
HYDROGRAPH AT	16	2.16	1	FLOW	767.	1535.
				TIME	18.00	18.00
3 COMBINED AT	114	5.03	1	FLOW	1777.	3554.
				TIME	18.00	18.00
ROUTED TO	R114	5.03	1	FLOW	1774.	3548.
				TIME	18.00	18.00
HYDROGRAPH AT	13	1.29	1	FLOW	461.	922.
				TIME	18.00	18.00
2 COMBINED AT	113	6.32	1	FLOW	2235.	4470.
				TIME	18.00	18.00
ROUTED TO	R113	6.32	1	FLOW	2231.	4463.
				TIME	18.00	18.00
HYDROGRAPH AT	12	1.32	1	FLOW	477.	953.
				TIME	18.00	18.00
2 COMBINED AT	112	7.64	1	FLOW	2708.	5416.
				TIME	18.00	18.00
ROUTED TO	R112	7.64	1	FLOW	2706.	5412.
				TIME	18.00	18.00
HYDROGRAPH AT	11	.70	1	FLOW	255.	510.
				TIME	18.00	18.00
HYDROGRAPH AT	17	.37	1	FLOW	130.	260.
				TIME	18.00	18.00
HYDROGRAPH AT	10	.54	1	FLOW	190.	379.
				TIME	18.00	18.00
4 COMBINED AT	111	9.25	1	FLOW	3281.	6561.
				TIME	18.00	18.00
ROUTED TO	RD111	9.25	1	FLOW	3267.	6534.
				TIME	18.33	18.33
HYDROGRAPH AT	2A	1.09	1	FLOW	389.	775.

				TIME	18.00	18.00
2 COMBINED AT	CP2A	10.34	1	FLOW	3649.	7298.
				TIME	18.00	18.00
DIVERSION TO	DIVERT	10.34	1	FLOW	0.	415.
				TIME	.17	18.00
HYDROGRAPH AT	FLOW	10.34	1	FLOW	3649.	6883.
				TIME	18.00	18.00
ROUTED TO	RR2A	10.34	1	FLOW	3638.	6873.
				TIME	18.17	18.17
HYDROGRAPH AT	2BE	1.22	1	FLOW	433.	865.
				TIME	18.00	18.00
2 COMBINED AT	102B	11.56	1	FLOW	4065.	7732.
				TIME	18.00	18.00
ROUTED TO	DET2BE	11.56	1	FLOW	4059.	7727.
				TIME	18.17	18.00

** PEAK STAGES IN FEET **

1	STAGE	1650.62	1652.86
	TIME	18.17	18.00

DIVERSION TO	SPILL	11.56	1	FLOW	394.	4062.
				TIME	18.17	18.00
HYDROGRAPH AT	FRWAY	11.56	1	FLOW	3665.	3665.
				TIME	15.33	13.67
ROUTED TO	CHAN	11.56	1	FLOW	3671.	3680.
				TIME	15.50	13.83
ROUTED TO	WASH	11.56	1	FLOW	3665.	3665.
				TIME	18.17	16.67
HYDROGRAPH AT	RSPILL	.00	1	FLOW	394.	4062.
				TIME	18.17	18.00
ROUTED TO	IDAHO	.00	1	FLOW	393.	4061.
				TIME	18.17	18.17
2 COMBINED AT	WW	11.56	1	FLOW	4058.	7726.
				TIME	18.17	18.17
ROUTED TO	RWW	11.56	1	FLOW	4045.	7711.
				TIME	19.00	18.83
HYDROGRAPH AT	2BWW	.45	1	FLOW	160.	320.
				TIME	18.00	18.00
HYDROGRAPH AT	2BWE	.70	1	FLOW	249.	498.
				TIME	18.00	18.00
ROUTED TO	16BW	.70	1	FLOW	248.	497.
				TIME	18.00	18.00

** PEAK STAGES IN FEET **

1	STAGE	1630.57	1631.26
	TIME	18.00	18.00

2 COMBINED AT	CC04	1.15	1	FLOW	408.	817.
				TIME	18.00	18.00
DIVERSION TO	EXIT	1.15	1	FLOW	0.	0.
				TIME	.17	.17
HYDROGRAPH AT	NDIV	1.15	1	FLOW	408.	817.
				TIME	18.00	18.00
ROUTED TO	NDRCUT	1.15	1	FLOW	408.	811.
				TIME	18.00	18.00
			** PEAK STAGES IN FEET **			
			1	STAGE	1626.20	1628.39
				TIME	18.00	18.00
ROUTED TO	R2BW	1.15	1	FLOW	407.	809.
				TIME	18.17	18.33
HYDROGRAPH AT	2BS	1.91	1	FLOW	672.	1345.
				TIME	18.00	18.00
3 COMBINED AT	102	14.62	1	FLOW	5066.	9812.
				TIME	18.00	18.00
HYDROGRAPH AT	5	5.65	1	FLOW	2025.	4051.
				TIME	18.00	18.00
ROUTED TO	R5	5.65	1	FLOW	2024.	4049.
				TIME	18.00	18.00
HYDROGRAPH AT	4	11.85	1	FLOW	4235.	8469.
				TIME	18.00	18.00
2 COMBINED AT	104	17.50	1	FLOW	6259.	12518.
				TIME	18.00	18.00
ROUTED TO	R104	17.50	1	FLOW	6247.	12494.
				TIME	18.33	18.33
HYDROGRAPH AT	7	.61	1	FLOW	220.	440.
				TIME	18.00	18.00
HYDROGRAPH AT	6	7.86	1	FLOW	2779.	5558.
				TIME	18.00	18.00
3 COMBINED AT	106	25.97	1	FLOW	9225.	18450.
				TIME	18.00	18.00
ROUTED TO	R106	25.97	1	FLOW	9213.	18426.
				TIME	18.17	18.17
HYDROGRAPH AT	3N	2.89	1	FLOW	1039.	2077.
				TIME	18.00	18.00
ROUTED TO	CULV	2.89	1	FLOW	1038.	2076.
				TIME	18.00	18.00
			** PEAK STAGES IN FEET **			
			1	STAGE	1666.97	1668.16
				TIME	18.00	18.00

ROUTED TO	RCULV	2.89	1	FLOW	1036.	2072.
				TIME	18.17	18.33
HYDROGRAPH AT	3S	2.39	1	FLOW	859.	1718.
				TIME	18.00	18.00
2 COMBINED AT	103	5.28	1	FLOW	1894.	3786.
				TIME	18.00	18.00
HYDROGRAPH AT	3A	1.20	1	FLOW	433.	866.
				TIME	18.00	18.00
2 COMBINED AT	CP103	6.48	1	FLOW	2327.	4652.
				TIME	18.00	18.00
2 COMBINED AT	W103	32.45	1	FLOW	11521.	23041.
				TIME	18.00	18.00
ROUTED TO	RW103	32.45	1	FLOW	11511.	23020.
				TIME	18.17	18.17
2 COMBINED AT	PLD	47.07	1	FLOW	16564.	32807.
				TIME	18.00	18.00
ROUTED TO	RES	47.07	1	FLOW	13526.	32736.
				TIME	19.33	18.17

** PEAK STAGES IN FEET **

1	STAGE	1587.41	1589.53
	TIME	19.33	18.17

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2EE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1650.62	.62	163.	4059.	4.00	18.17	.00
1.00	1652.86	2.86	198.	7727.	6.33	18.00	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION 165W

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1630.57	.57	30.	248.	4.67	18.00	.00
1.00	1631.26	1.26	33.	497.	6.50	18.00	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1626.20	.00	1.	408.	.00	18.00	.00
1.00	1628.39	.00	8.	811.	.00	18.00	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1587.41	.00	6309.	13526.	.00	19.33	.00
1.00	1589.53	.43	7586.	32736.	3.83	18.17	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING        29-DEC-88        13:33:08

PROCESS 36 TERMINATED

ELAPSED TIME  0:00:46, CPU TIME  00:00:00.092, I/O BLOCKS  61
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF       29-DEC-88        13:33:08

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix F

HEC-1 Output

Powerline F.R.S.
Future Conditions and Assumptions
Hydrology for the 100 year, 24 Hour Storm

HYD.WSM

DEST=HYD.WSM USER=HYD.WSM QUEUE=LPT DEVICE=@LPB
SEQ=490 QPRI=128 CPL=132 LPP=66 COPIES=1 PAGES=83

CREATED: 01-NOV-88 14:35:58
ENQUEUED: 05-JAN-89 14:27:16
PRINTING: 05-JAN-89 14:27:18

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:POWERLINE100.OUT

POWERLINE100.OUT

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.CC / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00   1-NOV-88       14:36:04
QPRI=128         SEQ=24565
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?71.CLI.00004.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.24565

--------
LAST MESSAGE CHANGE     25-OCT-86        0:36:12


                ***************          *******       ***********
                ************        *************       ************
               ***                 ****      ***         ***      ***
              *******             ***                   ***      ***
             ******             ***                    ***      ***
            ***                ***       ***          ***      ***
           ****                ***********        *************
         ******                 *******         *************


--------
MOST RECENT LOGON        1-NOV-88        14:35:14

AOS/VS CLI   REV 07.62.00.00     1-NOV-88        14:36:08
) SEARCHLIST :UTIL,:MACRCS,:UDD:HYD.WSM,:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM,OWARE
)
)
) LISTFILE POWERLINE100.CUT
) DATAFILE POWERLINE100.DAT
) SEA :UTIL:HEC1.DIR,[!SEA]
) X HEC1_START
```

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*           REVISED 31 JAN 85          *
*                                      *
*  RUN DATE11/ 1/1988   TIME14:36:11 * 
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX        XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID      WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID      CONVERSION OF MODEL FROM TR-20
  3           ID                  100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
  4           ID                  DEVELOPMENT, MUSKINGUM ROUTING
  5           ID         CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  6           ID                          POINT OF WEEKES WASH AT JUNCTION ROAD.
  7           ID                       2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  8           ID                          AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
  9           ID                          LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 10           ID                       3: SUPERSTITION FREEWAY IN PLACE.
 11           ID                       4: ADJUSTED WATERSHED AREAS.
 12           ID                       5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 13           ID                       6: NO MODIFICATIONS TO POWERLINE F.R.S.
              *DIAGRAM
 14           IT      10       0       0     200
 15           IO       5

 16           KK       15  WATERSHED 15
 17           KM      HYDROGRAPH FOR WATERSHED 15
 18           PB     3.85
 19           IN       15
 20           PC        0    .002    .005    .008    .011    .014    .017    .020    .023    .026
 21           PC     .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 22           PC     .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 23           PC     .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
 24           PC     .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
 25           PC     .735    .758    .766    .791    .804    .815    .825    .834    .842    .849
 26           PC     .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
 27           PC     .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
 28           PC     .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 29           PC     .983    .986    .992    .995    .998   1.000   1.000   1.000   1.000   1.000
 30           BA     1.76
 31           LS        0      80
 32           UD      .18

 33           KK      R15 ROUTE HYDROGRAPH FROM WS 15
 34           KM      ROUTE HYDROGRAPH FROM WATERSHED 15
 35           RM        1     .11      .3

 36           KK       14 WATERSHED 14
 37           KM      HYDROGRAPH FOR WATERSHED 14
 38           BA     1.11
 39           LS        0      79
 40           UD      .15

 41           KK       16 WATERSHED 16
 42           KM      HYDROGRAPH FOR WATERSHED 16
 43           BA     2.16
 44           LS        0      82
 45           UD      .35
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  46          KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
  47          KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
  48          HC       3

  49          KK    R114 ROUTE CP 114
  50          KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
  51          RM       1      .17       .3

  52          KK      13 WATERSHED 13
  53          KM     HYDROGRAPH FOR WATERSHED 13
  54          BA    1.29
  55          LS       0       83
  56          UD    .126

  57          KK     113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
  58          KM     COMBINE HYDROGRAPHS CP 114 AND WS 13
  59          HC       2

  60          KK    R113 ROUTE CP 113 TO CP 112
  61          KM     ROUTE HYDROGRAPH FOR CP 113
  62          RM       1      .19       .3

  63          KK      12 WATERSHED 12
  64          KM     HYDROGRAPH FOR WATERSHED 12
  65          BA    1.32
  66          LS       0       86
  67          UD     .27

  68          KK     112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
  69          KM     COMBINE HYDROGRAPH FROM CP 113 AND WS 12
  70          HC       2

  71          KK    R112 ROUTE CP 112 TO CP 111
  72          KM     ROUTE HYDROGRAPH CP 112 TO CP 111
  73          RM       1      .07       .3

  74          KK      11 WATERSHED 11
  75          KM     HYDROGRAPH FOR WATERSHED 11
  76          BA     .70
  77          LS       0       89
  78          UD    .186

  79          KK      17 WATERSHED 17
  80          KM     HYDROGRAPH FOR WATERSHED 17
  81          BA     .37
  82          LS       0       79
  83          UD    .138

  84          KK      10   WATERSHED 10
  85          KM     HYDROGRAPH FOR WATERSHED 10
  86          BA     .54
  87          LS       0       79
  88          UD     .14
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  89          KK      111 CONCENTRATION PT. 111
  90          KM      COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
  91          HC        4

  92          KK    RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  93          KM      ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  94          RM        5      .64       .3

  95          KK       2A  WATERSHED 2A
  96          KM       HYDROGRAPH FOR WATERSHED 2A
  97          BA     1.09
  98          LS        0       82
  99          UD      .22

 100          KK     CP2A  CONCENTRATION POINT 2A
 101          KM     COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
 102          HC        2

 103          KK   DIVERT     POINT OF DIVERSION FOR WEEKES WASH
 104          DT     FLOW
 105          DI        0     6500     7000     9000    10000    15000
 106          DQ        0        0      260     1300     1880     4600

 107          KK     RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
 108          KM      ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 109          RM        2      .42       .3

 110          KK      2BE WATERSHED 2B EAST
 111          KM      HYDROGRAPH FOR WATERSHED 2B EAST
 112          BA     1.22
 113          LS        0       82
 114          UD      .48

 115          KK     102B  CONCENTRATION POINT NORTH OF FREEWAY
 116          KM      CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 117          HC        2

 118          KK   DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 119          KM       ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 120          RS        1     ELEV     1636
 121          SV        0      6.0     13.0     29.0     47.0     69.0     93.0    122.0    153.0    184.0
 122          SV      217      239
 123          SE     1636     1637     1638     1640     1642     1644     1646     1648     1650     1652
 124          SE     1654     1655
 125          SQ        0       22      194      584     1050     1604     2236     2900     3534     4408
 126          SQ     4622     4860
 127          ST     1650      320      2.2      1.5

 128          KK    FRWAY
 129          KM     DIVERT ALL FLOW THAT GO UNDER THE ROAD
 130          DT    SPILL
 131          DI        0     3665     5000    10000    15000
 132          DQ        0        0     1335     6335    11335
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 133          KK     CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 134          KM      ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 135          RM        1       .1       .3

 136          KK     WASH   ROUTE FLOWS THROUGH THE WASH
 137          KM       ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 138          RM        2      .50       .3

 139          KK   RSPILL
 140          KM      RETRIEVE FLOW DEIVERTED FROM THE EMERGENCY SPILLWAY
 141          DR    SPILL

 142          KK    IDAHO
 143          KM     RCUTE THE RETRIEVED FLOW DOWN IDAYO ROAD.
 144          RM        1       .1       .3

 145          KK       WW
 146          KM     COMBINE ALL THE FLOW FROM THE FREEWAY
 147          HC        2

 148          KK      RWW
 149          KM     ROUTE THE FLOW TO POWERLINE F.R.S.
 150          RM        4      .98       .3

 151          KK     2BWW  WATERSHED 2B WEST, WEST
 152          KM       HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 153          BA      .45
 154          LS        0       82
 155          UD       .4

 156          KK     2BWE  WATERSHED 2B WEST, EAST
 157          KM      RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 158          KO        1
 159          BA      .70
 160          LS        0       82
 161          UD       .3

 162          KK   DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 163          KM       ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 164          RS        1     ELEV  1623.5
 165          SV        0       .6      8.3     17.5     28.2     36.0     48.6
 166          SE   1623.5   1624.0   1626.0   1628.0   1630.0   1632.0   1634.0
 167          SQ        0        0       31       93      135      169      208
 168          ST   1630.0      110      2.2      1.5

 169          KK     CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 170          KM     COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 171          HC        2
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 172          KK     NDIV
 173          DT     EXIT
 174          DI        0     1218     5000    10000
 175          DQ        0        0     3782     8782

 176          KK   NDROUT  ROUTE THROUGH THE FREEWAY
 177          KM     ROUTE COMBINED FLOW THROUGH 3 BBL. 6 X 8 BOX CULVERTS
 178          RS        1     ELEV  1622.6
 179          SV        0      .02      .16     1.12     4.17    25.42
 180          SE   1622.6   1623.0   1624.0   1626.0   1628.0   1630.0
 181          SQ        0        0      101      372      738     1111
 182          ST   1630.0     2875      2.2      1.5

 183          KK     R28W  ROUTE TO CP102
 184          KM      ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 185          RM        2      .40       .3

 186          KK      28S  WATERSHED 28 SOUTH OF SUPERTITION FREEWAY
 187          KM      HYDROGRAPH FOR WATERSHED 28 SOUTH
 188          BA     1.91
 189          LS        0       80
 190          UD      .32

 191          KK      102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 192          KM      COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 193          HC        3

 194          KK        5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 195          KM      HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 196          BA     5.65
 197          LS        0       85
 198          UD      .71

 199          KK       R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 200          KM       ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 201          RM        1      .07       .3

 202          KK        4 WATERSHED 4
 203          KM       HYDROGRAPH FOR WATERSHED 4
 204          BA    11.85
 205          LS        0       86
 206          UD     1.30

 207          KK      104  CONCENTRATION POINT 104
 208          KM      COMBINE HYDROGRAPHS AT CP 104
 209          HC        2

 210          KK     R104
 211          KM     ROUTE CP 104 TO 106
 212          RM        2      .50       .3
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 213          KK        7  WATERSHED 7
 214          KM     HYDROGRAPH FOR WATERSHED 7
 215          BA      .61
 216          LS        0       86
 217          UD       .3

 218          KK        6 WATERSHED 6
 219          KM       HYDROGRAPH FOR WATERSHED 6
 220          BA     7.86
 221          LS        0       83
 222          UD     1.08

 223          KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 224          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 225          HC        3

 226          KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 227          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 228          RM        1      .27       .3

 229          KK       3N WATERSHED 3N
 230          KM       HYDROGRAPH FOR WATERSHED 3N
 231          BA     2.89
 232          LS        0       85
 233          UD      .41

 234          KK     CULV   ROUTE FLOWS THROUGH CULVERTS
 235          KM      ROUTE FLOWS THROUGH THE CULVERTS
 236          RS      1.0     ELEV     1665
 237          SV        0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
 238          SE     1665   1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 239          SQ        0      119      375      688     1063     1462     1938     2375     2875     3375

 240          KK    RCULV  ROUTE FLOWS TO W103
 241          KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
 242          RM        2       .5       .3

 243          KK       3S  WATERSHED 3 SOUTH
 244          KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
 245          BA     2.39
 246          LS        0       85
 247          UD     .436

 248          KK      103
 249          HC        2

 250          KK       3A   WATERSHED 3A
 251          KM      HYDROGRAPH FOR WATERSHED 3A
 252          BA     1.20
 253          LS        0       86
 254          UD       .4
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 255          KK    CP103
 256          KM      CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 257          HC        2

 258          KK     W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 259          KM       COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 260          HC        2

 261          KK    RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 262          KM       ROUTE THE HYDROGRAPH TO POWERLINE DAM
 263          RM        1      .16       .3

 264          KK      PLD CONCENTRATION PT. AT POWERLINE DAM
 265          KM      COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 266          HC        2

 267          KK      RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 268          KM      RESERVOIR RATING CURVE
 269          RS        1     ELEV  1568.2
 270          SV        0      175      380      700     1100     1600     2175     2875     3675     4200
 271          SV     4600     5525     6725     7925
 272          SQ        0       75       92      106      119      130      141      150      159      165
 273          SQ     1228     7360    16800    27280
 274          SE   1568.1   1568.2   1570.0   1572.1   1574.1   1576.1   1578.1   1580.1   1582.1   1583.3
 275          SE   1584.1   1586.1   1588.1   1590.1
 276          SS   1583.3        0        0        0
 277          ST   1589.1    13358      2.2      1.5
 278          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

  16          15
               V
               V
  33         R15
               .
               .
  36           .          14
               .           .
               .           .
  41           .           .          16
               .           .           .
               .           .           .
  46         114.......................
               V
               V
  49        R114
               .
               .
  52           .          13
               .           .
               .           .
  57         113............
               V
               V
  60        R113
               .
               .
  63           .          12
               .           .
               .           .
  68         112............
               V
               V
  71        R112
               .
               .
  74           .          11
               .           .
               .           .
  79           .           .          17
               .           .           .
               .           .           .
  84           .           .           .          10
               .           .           .           .
               .           .           .           .
  89         111.......................................
               V
               V
  92       RD111
               .
               .
  95           .          2A
               .           .
               .           .
 100       CP2A............
               .
```

```
104          .-------->    FLOW
103     DIVERT
             V
             V
107       RR2A
             .
             .
110          .          2RE
             .           .
             .           .
115       102B............
             V
             V
118     DET2RE
             .
             .
130          .-------->   SPILL
128      FRWAY
             V
             V
133       CHAN
             V
             V
136       WASH
             .
             .
141          .           .<-------   SPILL
139          .      RSPILL
             .           V
             .           V
142          .       IDAHO
             .           .
             .           .
145         WW............
             V
             V
148        RWW
             .
             .
151          .        2BWW
             .           .
             .           .
156          .           .        2BWE
             .           .           V
             .           .           V
162          .           .      DET2RW
             .           .           .
             .           .           .
169          .        C004............
             .           .
             .           .
173          .           .-------->    EXIT
172          .        NDIV
             .           V
             .           V
176          .      NDROUT
             .           V
             .           V
183          .        R2BW
             .           .
             .           .
186          .           .         2BS
```

```
                 .          .          .
                 .          .          .
191          102.......................
                 .
                 .
194              .          5
                 .          V
                 .          V
199              .         R5
                 .          .
                 .          .
202              .          .          4
                 .          .          .
                 .          .          .
207              .        104...........
                 .          V
                 .          V
210              .       R104
                 .          .
                 .          .
213              .          .          7
                 .          .          .
                 .          .          .
218              .          .          .          6
                 .          .          .          .
                 .          .          .          .
223              .        106........................
                 .          V
                 .          V
226              .       R106
                 .          .
                 .          .
229              .          .         3N
                 .          .          V
                 .          .          V
234              .          .       CULV
                 .          .          V
                 .          .          V
240              .          .      RCULV
                 .          .          .
                 .          .          .
243              .          .          .         3S
                 .          .          .          .
                 .          .          .          .
248              .          .        103...........
                 .          .          .
                 .          .          .
250              .          .          .         3A
                 .          .          .          .
                 .          .          .          .
255              .          .      CP103...........
                 .          .          .
                 .          .          .
258              .       W103...........
                 .          V
                 .          V
261              .      RW103
                 .          .
                 .          .
264          PLD...........
                 V
                 V
267          RES
```

(***) RUNOFF ALSC COMPUTED AT THIS LOCATION

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             FEBRUARY 1981            *
*           REVISED 31 JAN 85          *
*                                      *
*  RUN DATE11/ 1/1988   TIME14:36:28 * 
*                                      *
****************************************
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```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
```

WEEKES WASH - POWERLINE F.R.S ANALYSIS
CONVERSION OF MODEL FROM TR-20
100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
DEVELOPMENT, MUSKINGUM ROUTING

CONDITIONS:
1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT POINT OF WEEKES WASH AT JUNCTION ROAD.
2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE LOTS, WITH NO DETENTION REQUIREMENTS. WORST CASE SCENA
3: SUPERSTITION FREEWAY IN PLACE.
4: ADJUSTED WATERSHED AREAS.
5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
6: NO MODIFICATIONS TO POWERLINE F.R.S.

```
 15 IO          OUTPUT CONTROL VARIABLES
                      IPRNT            5  PRINT CONTROL
                      IPLOT            0  PLOT CONTROL
                      QSCAL           0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN           10  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME         0000  STARTING TIME
                         NQ          200  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME         0910  ENDING TIME

                 COMPUTATION INTERVAL     .17 HOURS
                      TOTAL TIME BASE   33.17 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 156 KK     *     2BWE   *        WATERSHED 2B WEST, EAST
            *            *
            **************

 158 KO          OUTPUT CONTROL VARIABLES
                      IPRNT            1  PRINT CONTROL
                      IPLOT            0  PLOT CONTROL
                      QSCAL           0.  HYDROGRAPH PLOT SCALE

                SUBBASIN RUNOFF DATA

 159 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .70  SUBBASIN AREA

                 PRECIPITATION DATA

  18 PB                STORM         3.85  BASIN TOTAL PRECIPITATION

  20 PI            INCREMENTAL PRECIPITATION PATTERN
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .01       .01       .01       .01       .01       .01
                      .01       .01       .01       .01       .01       .01       .01       .02       .02       .07
                      .13       .18       .03       .02       .02       .02       .01       .01       .02       .01
                      .01       .01       .01       .01       .01       .01       .01       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00

 160 LS          SCS LOSS RATE
                      STRTL          .44  INITIAL ABSTRACTION
                     CRVNBR        82.00  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

 161 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .30  LAG

                                                                                                  ***
```

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

UNIT HYDROGRAPH
11 END-OF-PERIOD ORDINATES

325. 864. 762. 385. 193. 94. 46. 23. 11. 6.
2.

****

HYDROGRAPH AT STATION 2BWE

****

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
1		0000	1	.00	.00	.00	0.	1		1640	101	.01	.00	.01	34.
1		0010	2	.01	.01	.00	0.	1		1650	102	.01	.00	.01	32.
1		0020	3	.01	.01	.00	0.	1		1700	103	.01	.00	.01	30.
1		0030	4	.01	.01	.00	0.	1		1710	104	.01	.00	.01	29.
1		0040	5	.01	.01	.00	0.	1		1720	105	.01	.00	.01	29.
1		0050	6	.01	.01	.00	0.	1		1730	106	.01	.00	.01	29.
1		0100	7	.01	.01	.00	0.	1		1740	107	.01	.00	.01	29.
1		0110	8	.01	.01	.00	0.	1		1750	108	.01	.00	.01	28.
1		0120	9	.01	.01	.00	0.	1		1800	109	.01	.00	.01	27.
1		0130	10	.01	.01	.00	0.	1		1810	110	.01	.00	.01	25.
1		0140	11	.01	.01	.00	0.	1		1820	111	.01	.00	.01	24.
1		0150	12	.01	.01	.00	0.	1		1830	112	.01	.00	.01	24.
1		0200	13	.01	.01	.00	0.	1		1840	113	.01	.00	.01	23.
1		0210	14	.01	.01	.00	0.	1		1850	114	.01	.00	.01	23.
1		0220	15	.01	.01	.00	0.	1		1900	115	.01	.00	.01	23.
1		0230	16	.01	.01	.00	0.	1		1910	116	.01	.00	.01	23.
1		0240	17	.01	.01	.00	0.	1		1920	117	.01	.00	.01	23.
1		0250	18	.01	.01	.00	0.	1		1930	118	.01	.00	.01	23.
1		0300	19	.01	.01	.00	0.	1		1940	119	.01	.00	.01	23.
1		0310	20	.01	.01	.00	0.	1		1950	120	.01	.00	.01	23.
1		0320	21	.01	.01	.00	0.	1		2000	121	.01	.00	.01	22.
1		0330	22	.01	.01	.00	0.	1		2010	122	.01	.00	.01	20.
1		0340	23	.01	.01	.00	0.	1		2020	123	.01	.00	.01	19.
1		0350	24	.01	.01	.00	0.	1		2030	124	.01	.00	.01	18.
1		0400	25	.01	.01	.00	0.	1		2040	125	.01	.00	.01	18.
1		0410	26	.01	.01	.00	0.	1		2050	126	.01	.00	.01	18.
1		0420	27	.01	.01	.00	0.	1		2100	127	.01	.00	.01	18.
1		0430	28	.01	.01	.00	0.	1		2110	128	.01	.00	.01	18.
1		0440	29	.01	.01	.00	0.	1		2120	129	.01	.00	.01	18.
1		0450	30	.01	.01	.00	0.	1		2130	130	.01	.00	.01	18.
1		0500	31	.01	.01	.00	0.	1		2140	131	.01	.00	.01	18.
1		0510	32	.01	.01	.00	0.	1		2150	132	.01	.00	.01	18.
1		0520	33	.01	.01	.00	0.	1		2200	133	.01	.00	.01	18.
1		0530	34	.01	.01	.00	0.	1		2210	134	.01	.00	.01	18.
1		0540	35	.01	.01	.00	0.	1		2220	135	.01	.00	.01	18.
1		0550	36	.01	.01	.00	0.	1		2230	136	.01	.00	.01	18.
1		0600	37	.01	.01	.00	0.	1		2240	137	.01	.00	.01	18.
1		0610	38	.01	.01	.00	0.	1		2250	138	.01	.00	.01	19.
1		0620	39	.01	.01	.00	0.	1		2300	139	.02	.00	.01	23.
1		0630	40	.01	.01	.00	0.	1		2310	140	.01	.00	.01	26.
1		0640	41	.01	.01	.00	0.	1		2320	141	.01	.00	.01	24.
1		0650	42	.01	.01	.00	0.	1		2330	142	.01	.00	.01	21.
1		0700	43	.01	.01	.00	0.	1		2340	143	.01	.00	.00	18.
1		0710	44	.01	.01	.00	0.	1		2350	144	.00	.00	.00	15.
1		0720	45	.01	.01	.00	0.	2		0000	145	.00	.00	.00	11.
1		0730	46	.01	.01	.00	0.	2		0010	146	.00	.00	.00	6.
1		0740	47	.01	.01	.00	0.	2		0020	147	.00	.00	.00	3.

1	0750	48	.01	.01	.00	0.	*	2	0030	148	.00	.00	.00	1.
1	0800	49	.01	.01	.00	0.	*	2	0040	149	.00	.00	.00	1.
1	0810	50	.02	.01	.00	0.	*	2	0050	150	.00	.00	.00	0.
1	0820	51	.02	.02	.00	1.	*	2	0100	151	.00	.00	.00	0.
1	0830	52	.02	.02	.00	1.	*	2	0110	152	.00	.00	.00	0.
1	0840	53	.02	.02	.00	2.	*	2	0120	153	.00	.00	.00	0.
1	0850	54	.02	.02	.00	3.	*	2	0130	154	.00	.00	.00	0.
1	0900	55	.02	.02	.00	3.	*	2	0140	155	.00	.00	.00	0.
1	0910	56	.02	.02	.00	4.	*	2	0150	156	.00	.00	.00	0.
1	0920	57	.02	.02	.00	5.	*	2	0200	157	.00	.00	.00	0.
1	0930	58	.02	.02	.00	6.	*	2	0210	158	.00	.00	.00	0.
1	0940	59	.02	.02	.00	7.	*	2	0220	159	.00	.00	.00	0.
1	0950	60	.02	.02	.00	9.	*	2	0230	160	.00	.00	.00	0.
1	1000	61	.02	.02	.00	10.	*	2	0240	161	.00	.00	.00	0.
1	1010	62	.03	.02	.01	11.	*	2	0250	162	.00	.00	.00	0.
1	1020	63	.03	.02	.01	13.	*	2	0300	163	.00	.00	.00	0.
1	1030	64	.03	.02	.01	15.	*	2	0310	164	.00	.00	.00	0.
1	1040	65	.04	.03	.01	18.	*	2	0320	165	.00	.00	.00	0.
1	1050	66	.04	.03	.01	23.	*	2	0330	166	.00	.00	.00	0.
1	1100	67	.05	.03	.01	28.	*	2	0340	167	.00	.00	.00	0.
1	1110	68	.05	.04	.02	34.	*	2	0350	168	.00	.00	.00	0.
1	1120	69	.06	.04	.02	41.	*	2	0400	169	.00	.00	.00	0.
1	1130	70	.07	.04	.03	50.	*	2	0410	170	.00	.00	.00	0.
1	1140	71	.27	.15	.12	90.	*	2	0420	171	.00	.00	.00	0.
1	1150	72	.49	.21	.28	230.	*	2	0430	172	.00	.00	.00	0.
1	1200	73	.71	.22	.49	509.	*	2	0440	173	.00	.00	.00	0.
1	1210	74	.11	.03	.08	716.	*	2	0450	174	.00	.00	.00	0.
1	1220	75	.09	.02	.07	602.	*	2	0500	175	.00	.00	.00	0.
1	1230	76	.07	.02	.06	398.	*	2	0510	176	.00	.00	.00	0.
1	1240	77	.06	.01	.05	275.	*	2	0520	177	.00	.00	.00	0.
1	1250	78	.04	.01	.03	197.	*	2	0530	178	.00	.00	.00	0.
1	1300	79	.02	.00	.02	140.	*	2	0540	179	.00	.00	.00	0.
1	1310	80	.06	.01	.05	108.	*	2	0550	180	.00	.00	.00	0.
1	1320	81	.05	.01	.04	107.	*	2	0600	181	.00	.00	.00	0.
1	1330	82	.03	.01	.03	105.	*	2	0610	182	.00	.00	.00	0.
1	1340	83	.03	.01	.02	91.	*	2	0620	183	.00	.00	.00	0.
1	1350	84	.03	.01	.02	76.	*	2	0630	184	.00	.00	.00	0.
1	1400	85	.03	.01	.02	67.	*	2	0640	185	.00	.00	.00	0.
1	1410	86	.02	.00	.02	61.	*	2	0650	186	.00	.00	.00	0.
1	1420	87	.02	.00	.02	56.	*	2	0700	187	.00	.00	.00	0.
1	1430	88	.02	.00	.02	52.	*	2	0710	188	.00	.00	.00	0.
1	1440	89	.02	.00	.01	48.	*	2	0720	189	.00	.00	.00	0.
1	1450	90	.02	.00	.01	44.	*	2	0730	190	.00	.00	.00	0.
1	1500	91	.02	.00	.01	42.	*	2	0740	191	.00	.00	.00	0.
1	1510	92	.02	.00	.01	41.	*	2	0750	192	.00	.00	.00	0.
1	1520	93	.02	.00	.01	40.	*	2	0800	193	.00	.00	.00	0.
1	1530	94	.02	.00	.01	38.	*	2	0810	194	.00	.00	.00	0.
1	1540	95	.02	.00	.01	36.	*	2	0820	195	.00	.00	.00	0.
1	1550	96	.02	.00	.01	35.	*	2	0830	196	.00	.00	.00	0.
1	1600	97	.02	.00	.01	35.	*	2	0840	197	.00	.00	.00	0.
1	1610	98	.02	.00	.01	34.	*	2	0850	198	.00	.00	.00	0.
1	1620	99	.02	.00	.01	34.	*	2	0900	199	.00	.00	.00	0.
1	1630	100	.02	.00	.01	34.	*	2	0910	200	.00	.00	.00	0.
							*							

****

TOTAL RAINFALL = 3.85, TOTAL LOSS = 1.77, TOTAL EXCESS = 2.08

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.17-HR
716.	12.17	(CFS)	127.	39.	28.	28.
		(INCHES)	1.682	2.075	2.075	2.075
		(AC-FT)	63.	77.	77.	77.

```
                    CUMULATIVE AREA =      .70 SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
```

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	15	1390.	12.00	295.	91.	66.	1.76		
ROUTED TO	R15	1886.	12.17	295.	91.	66.	1.76		
HYDROGRAPH AT	14	1280.	12.00	179.	55.	40.	1.11		
HYDROGRAPH AT	16	1979.	12.17	391.	121.	87.	2.16		
3 COMBINED AT	114	4890.	12.17	865.	266.	193.	5.03		
ROUTED TO	R114	4521.	12.33	865.	266.	193.	5.03		
HYDROGRAPH AT	13	1922.	12.00	242.	75.	54.	1.29		
2 COMBINED AT	113	5124.	12.33	1106.	341.	247.	6.32		
ROUTED TO	R113	4890.	12.50	1106.	341.	247.	6.32		
HYDROGRAPH AT	12	1646.	12.17	275.	86.	62.	1.32		
2 COMBINED AT	112	5838.	12.33	1379.	427.	309.	7.64		
ROUTED TO	R112	5795.	12.50	1379.	427.	309.	7.64		
HYDROGRAPH AT	11	1040.	12.00	161.	50.	37.	.70		
HYDROGRAPH AT	17	447.	12.00	60.	18.	13.	.37		
HYDROGRAPH AT	10	647.	12.00	87.	27.	19.	.54		
4 COMBINED AT	111	6621.	12.33	1684.	522.	378.	9.25		
ROUTED TO	RD111	6187.	13.00	1682.	522.	378.	9.25		
HYDROGRAPH AT	2A	1227.	12.17	197.	61.	44.	1.09		
2 COMBINED AT	CF2A	6348.	13.00	1874.	583.	422.	10.34		
DIVERSION TO	FLOW	0.	13.00	0.	0.	0.	10.34		
HYDROGRAPH AT	DIVERT	6348.	13.00	1874.	583.	422.	10.34		
ROUTED TO	RR2A	5940.	13.50	1872.	583.	422.	10.34		
HYDROGRAPH AT	2BE	957.	12.33	220.	68.	49.	1.22		
2 COMBINED AT	102B	6160.	13.50	2087.	651.	471.	11.56		
ROUTED TO	DET2BE	5937.	13.67	2071.	651.	471.	11.56	1651.75	13.67
DIVERSION TO	SPILL	2272.	13.33	232.	58.	42.	11.56		
HYDROGRAPH AT	FRWAY	3665.	13.33	1840.	593.	429.	11.56		
ROUTED TO	CHAN	3681.	13.50	1840.	593.	429.	11.56		

ROUTED TO	WASH	3650.	14.50	1835.	593.	429.	11.56		
HYDROGRAPH AT	RSFILL	2272.	13.67	232.	58.	42.	.00		
ROUTED TO	IDAHO	2333.	13.67	232.	58.	42.	.00		
2 COMBINED AT	WW	5416.	13.83	2066.	651.	471.	11.56		
ROUTED TO	RWW	4543.	14.83	2058.	651.	471.	11.56		
HYDROGRAPH AT	2BWW	387.	12.33	81.	25.	18.	.45		
HYDROGRAPH AT	2BWE	716.	12.17	127.	39.	28.	.70		
ROUTED TO	DET2BW	300.	12.67	111.	39.	28.	.70	1630.74	12.67
2 COMBINED AT	CC04	537.	12.50	190.	64.	46.	1.15		
DIVERSION TO	EXIT	0.	12.50	0.	0.	0.	1.15		
HYDROGRAPH AT	NDIV	537.	12.50	190.	64.	46.	1.15		
ROUTED TO	NDROUT	530.	12.67	190.	64.	46.	1.15	1626.87	12.67
ROUTED TO	R2BW	506.	13.00	190.	64.	46.	1.15		
HYDROGRAPH AT	2BS	1724.	12.17	320.	99.	71.	1.91		
3 COMBINED AT	102	4817.	14.83	2414.	813.	588.	14.62		
HYDROGRAPH AT	5	3882.	12.67	1134.	353.	256.	5.65		
ROUTED TO	R5	3907.	12.67	1134.	353.	256.	5.65		
HYDROGRAPH AT	4	5614.	13.17	2433.	768.	556.	11.85		
2 COMBINED AT	104	8660.	12.83	3564.	1121.	811.	17.50		
ROUTED TO	R104	8251.	13.50	3558.	1121.	811.	17.50		
HYDROGRAPH AT	7	727.	12.17	127.	40.	29.	.61		
HYDROGRAPH AT	6	3788.	13.00	1459.	456.	330.	7.86		
3 COMBINED AT	106	11740.	13.33	5127.	1617.	1170.	25.97		
ROUTED TO	R106	11406.	13.67	5120.	1617.	1170.	25.97		
HYDROGRAPH AT	3N	2763.	12.33	582.	181.	131.	2.89		
ROUTED TO	CULV	2537.	12.33	582.	181.	131.	2.89	1668.66	12.33
ROUTED TO	RCULV	2246.	12.83	581.	181.	131.	2.89		
HYDROGRAPH AT	3S	2227.	12.33	481.	149.	108.	2.39		
2 COMBINED AT	103	3399.	12.67	1061.	330.	239.	5.28		
HYDROGRAPH AT	3A	1197.	12.33	250.	78.	56.	1.20		
2 COMBINED AT	CP103	4327.	12.50	1311.	408.	295.	6.48		

2 COMBINED AT	W103	13110.	13.50	6394.	2024.	1465.	32.45		
ROUTED TO	RW103	13027.	13.67	6388.	2024.	1465.	32.45		
2 COMBINED AT	PLD	14312.	13.67	8802.	2837.	2053.	47.07		
ROUTED TO	RES	1703.	20.67	1559.	761.	568.	47.07	1584.25	20.67

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET288

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.75	1.75	180.	5937.	1.00	13.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2EW

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.74	.74	31.	300.	1.00	12.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDRCUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.87	.00	2.	530.	.00	12.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	4200.	7325.
OUTFLOW	75.	165.	22040.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1584.25	.00	4672.	1703.	.00	20.67	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING          1-NOV-88        14:36:51

PROCESS 78 TERMINATED

ELAPSED TIME  0:00:46, CPU TIME  00:00:00.092, I/O BLOCKS  64
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF         1-NOV-88        14:36:52

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix G

HEC-1 Output

Alternative A :
Excavate More Volume from Behind
Powerline F.R.S. (PMF)

```
+33333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333+

                      $   $  $   $  $$$$       $   $   $$$   $   $
                      $   $  $   $  $   $      $   $  $   $  $$ $$
                      $   $   $ $   $   $      $   $  $      $ $ $
                      $$$$$    $    $   $      $ $ $   $$$   $ $ $
                      $   $    $    $   $      $ $ $      $  $   $
                      $   $    $    $   $  $$  $$ $$  $   $  $   $
                      $   $    $    $$$$   $$  $   $   $$$   $   $
```

DEST=HYD.WSM USER=HYD.WSM QUEUE=LPT DEVICE=@LPB
SEQ=100 QPRI=128 CPL=132 LPP=66 COPIES=1 PAGES=70

CREATED: 03-JAN-89 14:17:26
ENQUEUED: 03-JAN-89 14:38:54
PRINTING: 03-JAN-89 14:38:54

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:ALTA.OUT

```
                      $    $       $$$$$    $         $$$   $   $  $$$$$
                     $ $   $         $     $ $       $   $  $   $    $
                    $   $  $         $    $   $      $   $  $   $    $
                    $   $  $         $    $   $      $   $  $   $    $
                    $$$$$  $         $    $$$$$      $   $  $   $    $
                    $   $  $         $    $   $  $$  $   $  $   $    $
                    $   $  $$$$$     $    $   $  $$   $$$    $$$     $

+33333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333+
```

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00    3-JAN-89        14:17:28
QPRI=128          SEQ=86
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?33.CLI.00005.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.86

--------
LAST MESSAGE CHANGE      17-NOV-88        14:55:52

                ***************          *******        ***********
                ************        *************        ************
               ***                 ****      ***         ***      ***
              *******             ***                   ***      ***
             ******              ***                   ***     ***
            ***                 ***       ***         ***      ***
           ****                 ***********        *************
          ******                 *******         *************


--------
MOST RECENT LOGON         3-JAN-89        13:55:32

AOS/VS CLI    REV 07.62.00.00      3-JAN-89        14:17:29
) SEARCHLIST :UTIL,:MACROS,:UDD:HYD.WSM,:UDD:OP,:PER,:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM,OWARE
)
) LISTFILE STOP.OUT
) DATAFILE STOR.DAT
) SEA :UTIL:HEC1.DIR,[!SEA]
) X HEC1_START
```

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             FEBRUARY 1981             *
*           REVISED 31 JAN 85           *
*                                       *
*  RUN DATE 1/ 3/1989   TIME14:17:31 *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*           609 SECOND STREET           *
*        DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285   *
*                                       *
*****************************************
```

```
X      X  XXXXXXX   XXXXX            X
X      X  X         X     X         XX
X      X  X         X                X
XXXXXXX   XXXX      X        XXXXX   X
X      X  X         X                X
X      X  X         X     X          X
X      X  XXXXXXX   XXXXX           XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID      WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID      CONVERSION OF MODEL FROM TR-20
  3           ID              1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
  4           ID              DEVELOPMENT, MUSKINGUM ROUTING
  5           ID      ALTERNATIVE A:  EXCAVATION OF STORAGE AT POWERLINE F.R.S.
  6           ID         CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  7           ID                          POINT OF WEEKES WASH AT JUNCTION ROAD.
  8           ID                        2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  9           ID                          AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
 10           ID                          LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 11           ID                        3: SUPERSTITION FREEWAY IN PLACE.
 12           ID                        4: ADJUSTED WATERSHED AREAS.
 13           ID                        5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 14           ID                        6: MODIFICATIONS TO POWERLINE F.R.S. - EXTRA STORAGE
 15           IT      10        0        0      400
 16           IO       5
 17           JR    FLOW       .5      1.0

 18           KK      15  WATERSHED 15
 19           KM      HYDROGRAPH FOR WATERSHED 15
 20           PB   11.08
 21           IN      60
 22           PI     .47      .81     7.02     1.71     0.75      .32
 23           BA    1.76
 24           LS       0       80
 25           UD     .18

 26           KK     R15 ROUTE HYDROGRAPH FROM WS 15
 27           KM     ROUTE HYDROGRAPH FROM WATERSHED 15
 28           RM       1      .11       .3

 29           KK      14 WATERSHED 14
 30           KM     HYDROGRAPH FOR WATERSHED 14
 31           BA    1.11
 32           LS       0       79
 33           UD     .15

 34           KK      16 WATERSHED 16
 35           KM     HYDROGRAPH FOR WATERSHED 16
 36           BA    2.16
 37           LS       0       82
 38           UD     .35

 39           KK     114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
 40           KM     COMBINE ALL THREE HYDROGRAPHS AT CP 114
 41           HC       3

 42           KK    P114 ROUTE CP 114
 43           KM     ROUTE HYDROGRAPH FROM CP114 TO CP 113
 44           RM       1      .17       .3
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  45          KK       13 WATERSHED 13
  46          KM      HYDROGRAPH FOR WATERSHED 13
  47          BA     1.29
  48          LS        0       83
  49          UD     .126

  50          KK      113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
  51          KM      COMBINE HYDROGRAPHS CP 114 AND WS 13
  52          HC        2

  53          KK     R113 ROUTE CP 113 TO CP 112
  54          KM      ROUTE HYDROGRAPH FOR CP 113
  55          RM        1      .19       .3

  56          KK       12 WATERSHED 12
  57          KM      HYDROGRAPH FOR WATERSHED 12
  58          BA     1.32
  59          LS        0       86
  60          UD      .27

  61          KK      112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
  62          KM      COMBINE HYDROGRAPH FROM CP 113 AND WS 12
  63          HC        2

  64          KK     R112 ROUTE CP 112 TO CP 111
  65          KM      ROUTE HYDROGRAPH CP 112 TO CP 111
  66          RM        1      .07       .3

  67          KK       11 WATERSHED 11
  68          KM      HYDROGRAPH FOR WATERSHED 11
  69          BA      .70
  70          LS        0       89
  71          UD     .186

  72          KK       17 WATERSHED 17
  73          KM      HYDROGRAPH FOR WATERSHED 17
  74          BA      .37
  75          LS        0       79
  76          UD     .138

  77          KK       10   WATERSHED 10
  78          KM      HYDROGRAPH FOR WATERSHED 10
  79          BA      .54
  80          LS        0       79
  81          UD      .14

  82          KK      111 CONCENTRATION PT. 111
  83          KM      COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
  84          HC        4
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  85          KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  86          KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  87          RM       5      .64       .3

  88          KK      2A  WATERSHED 2A
  89          KM      HYDROGRAPH FOR WATERSHED 2A
  90          BA    1.09
  91          LS       0       82
  92          UD     .22

  93          KK    CP2A  CONCENTRATION POINT 2A
  94          KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
  95          HC       2

  96          KK    FLOW     POINT OF DIVERSION FOR WEEKES WASH
  97          KO       3
  98          DT   DIVERT
  99          DI       0     6500     7000     9000    10000    15000
 100          DQ       0        0      260     1300     1880     4600

 101          KK    RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
 102          KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 103          RM       2      .42       .3

 104          KK     2BE WATERSHED 2B EAST
 105          KM     HYDROGRAPH FOR WATERSHED 2B EAST
 106          BA    1.22
 107          LS       0       82
 108          UD     .48

 109          KK    102B  CONCENTRATION POINT NORTH OF FREEWAY
 110          KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 111          HC       2

 112          KK   DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 113          KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 114          KM      PRINCIPLE OUTLET IS 2-12 X 12 (FOOT) BOX CULVERTS
 115          KM      INVERT IS AT 1636; EMERGENCY SPILLWAY CREST IS AT 1650.
 116          RS       1    ELEV    1636
 117          SV       0      6.0     13.0     29.0     47.0     69.0     93.0    122.0    153.0    184.0
 118          SV     217      239
 119          SE    1636     1637     1638     1640     1642     1644     1646     1648     1650     1652
 120          SE    1654     1655
 121          SQ       0       22      194      584     1050     1604     2236     2900     3534     4108
 122          SQ    4622     4860
 123          ST    1650      320      2.2      1.5

 124          KK   FRWAY
 125          KM    DIVERT ALL FLOWS FROM EMERGENCY SPILLWAY
 126          DT   SPILL
 127          DI       0     3665     5000    10000    15000
 128          DQ       0        0     1335     6335    11335
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 129          KK     CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 130          KM      ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 131          RM        1       .1       .3

 132          KK     WASH   ROUTE FLOWS THROUGH THE WASH
 133          KM       ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 134          RM        2      .50       .3

 135          KK   RSPILL
 136          KM     RETRIEVE FLOW DIVERTED FROM THE EMERGENCY SPILLWAY
 137          DR    SPILL

 138          KK    IDAHO
 139          KM     ROUTE THE RETRIEVED FLOW DOWN IDAHO RD.
 140          RM        1       .1       .3

 141          KK       WW
 142          KM      COMBINE ALL FLOWS FROM FREEWAY
 143          HC        2

 144          KK      RWW
 145          KM      ROUTE FLOWS TO POWERLINE F.R.S.
 146          RM        4      .98       .3

 147          KK     2BWW  WATERSHED 2B WEST, WEST
 148          KM       HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 149          BA      .45
 150          LS        0       82
 151          UD       .4

 152          KK     2BWE  WATERSHED 2B WEST, EAST
 153          KM      RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 154          BA      .70
 155          LS        0       82
 156          UD       .3

 157          KK   DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 158          KM       ROUTE FLOWS THROUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 159          RS        1     ELEV  1623.5
 160          SV        0       .6      8.3     17.5     28.2     36.0     48.6
 161          SE   1623.5   1624.0   1626.0   1628.0   1630.0   1632.0   1634.0
 162          SQ        0        0       31       93      135      169      208
 163          ST   1630.0      110      2.2      1.5

 164          KK     CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 165          KM     COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 166          HC        2

 167          KK     NDIV
 168          KM     DIVERSION OF FLOW OVER THE NORTH DIVERSION DAM.
 169          KO        3
 170          DT     EXIT
 171          DI        0     1218     5000    10000
 172          DQ        0        0     3782     8782
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 173          KK  NDRCUT  ROUTE THROUGH THE FREEWAY
 174          KM    ROUTE COMBINED FLOW THROUGH 2 - 10  X 8  BOX CULVERTS
 175          RS       1     ELEV  1622.6
 176          SV       0     0.02     0.16     1.12     4.17    25.42
 177          SE  1622.6  1623.0  1624.0  1626.0  1628.0  1630.0
 178          SQ       0       0      101      372      738     1111
 179          ST  1630.0    2875      2.2      1.5

 180          KK    R2BW  ROUTE TO CP102
 181          KM     ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 182          RM       2     .40      .3

 183          KK     2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 184          KM     HYDROGRAPH FOR WATERSHED 2B SOUTH
 185          BA    1.91
 186          LS       0      80
 187          UD     .32

 188          KK     102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 189          KM     COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 190          HC       3

 191          KK       5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 192          KM     HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 193          BA    5.65
 194          LS       0      85
 195          UD     .71

 196          KK      R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 197          KM      ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 198          RM       1     .07      .3

 199          KK       4 WATERSHED 4
 200          KM      HYDROGRAPH FOR WATERSHED 4
 201          BA   11.85
 202          LS       0      86
 203          UD    1.30

 204          KK     104  CONCENTRATION POINT 104
 205          KM     COMBINE HYDROGRAPHS AT CP 104
 206          HC       2

 207          KK    R104
 208          KM    ROUTE CP 104 TO 106
 209          RM       2     .50      .3

 210          KK       7  WATERSHED 7
 211          KM    HYDROGRAPH FOR WATERSHED 7
 212          BA     .61
 213          LS       0      86
 214          UD      .3
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 215          KK        6 WATERSHED 6
 216          KM       HYDROGRAPH FOR WATERSHED 6
 217          BA     7.86
 218          LS        0       83
 219          UD     1.08

 220          KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 221          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 222          HC        3

 223          KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 224          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 225          RM        1      .27       .3

 226          KK       3N WATERSHED 3N
 227          KM       HYDROGRAPH FOR WATERSHED 3N
 228          BA     2.89
 229          LS        0       85
 230          UD      .41

 231          KK     CULV   ROUTE FLOWS THROUGH CULVERTS
 232          KM      ROUTE FLOWS THROUGH THE CULVERTS
 233          RS      1.0     ELEV     1665
 234          SV        0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
 235          SE     1665   1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 236          SQ        0      119      375      688     1063     1462     1938     2375     2875     3375

 237          KK    RCULV  ROUTE FLOWS TO W103
 238          KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
 239          RM        2       .5       .3

 240          KK       3S  WATERSHED 3 SOUTH
 241          KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
 242          BA     2.39
 243          LS        0       85
 244          UD     .436

 245          KK      103
 246          HC        2

 247          KK       3A   WATERSHED 3A
 248          KM      HYDROGRAPH FOR WATERSHED 3A
 249          BA     1.20
 250          LS        0       86
 251          UD       .4

 252          KK    CP103
 253          KM      CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 254          HC        2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 255          KK    W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 256          KM      COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 257          HC        2

 258          KK   RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 259          KM      ROUTE THE HYDROGRAPH TO POWERLINE DAM
 260          RM        1      .16       .3

 261          KK     PLD CONCENTRATION PT. AT POWERLINE DAM
 262          KM     COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 263          HC        2

 264          KK     RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 265          KM     RESERVOIR RATING CURVE
 266          RS        1     ELEV  1568.2
 267          SV        0      175      380     1768     3465     5268     5941     7196     9465
 268          SQ        0       75       92      119      141      159      165     7360    27280
 269          SE   1568.1   1568.2   1570.0   1574.0   1578.0   1582.0   1583.3   1586.0   1590.0
 270          SS   1593.3        0        0        0
 271          ST   1589.1    13358      2.2      1.5
 272          ZZ
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*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            FEBRUARY 1981              *
*          REVISED 31 JAN 85            *
*                                       *
*  RUN DATE 1/ 3/1989   TIME14:17:49 *
*                                       *
*****************************************
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*****************************************
*                                       *
*     U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*  (916) 440-3285 OR (FTS) 448-3285   *
*                                       *
*****************************************
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                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                            1/2 PMF, & FULL PMF ;SCS EXCESS & HYDROGRAPH
                            DEVELOPMENT, MUSKINGUM ROUTING
                    ALTERNATIVE A:  EXCAVATION OF STORAGE AT POWERLINE F.R.S.
                       CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                        POINT OF WEEKES WASH AT JUNCTION ROAD.
                                     2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                        AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                        LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                     3: SUPERSTITION FREEWAY IN PLACE.
                                     4: ADJUSTED WATERSHED AREAS.
                                     5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                     6: MODIFICATIONS TO POWERLINE F.R.S. - EXTRA STORAGE

 16 IO          OUTPUT CONTROL VARIABLES
                      IPRNT            5  PRINT CONTROL
                      IPLOT            0  PLOT CONTROL
                      QSCAL           0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN           10  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1     0  STARTING DATE
                      ITIME         0000  STARTING TIME
                         NQ          400  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3     0  ENDING DATE
                     NDTIME         1830  ENDING TIME

                  COMPUTATION INTERVAL     .17 HOURS
                       TOTAL TIME BASE   66.50 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

    JP          MULTI-PLAN OPTION
                      NPLAN            1  NUMBER OF PLANS

    JR          MULTI-RATIO OPTION
                     RATIOS OF RUNOFF
                     .50      1.00
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WARNING *** TIME INTEPVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 95 KK      *      FLOW  *          POINT OF DIVERSION FOR WEEKES WASH
            *            *
            **************

 97 KO          OUTPUT CONTROL VARIABLES
                      IPRNT            3  PRINT CONTROL
                      IPLOT            0  PLOT CONTROL
                      QSCAL           0.  HYDROGRAPH PLOT SCALE

    DT          DIVERSION
                      ISTAD       DIVERT  DIVERSION HYDROGRAPH IDENTIFICATION

    DI             INFLOW          .00   6500.00   7000.00   9000.00  10000.00  15000.00

    DQ       DIVERTED FLOW         .00       .00    260.00   1300.00   1880.00   4600.00

                                                                  ***

     ***            ***            ***            ***            ***

                        DIVERSION HYDROGRAPH   DIVERT
                          FOR PLAN 1, RATIO =  .50

PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                    6-HR        24-HR        72-HR      66.50-HR
   4965.       3.33          (CFS)     829.         207.          75.          75.
                          (INCHES)     .745         .745         .745         .745
                           (AC-FT)     411.         411.         411.         411.

                        CUMULATIVE AREA =   10.34 SQ MI

     ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION     FLOW
                          FOR PLAN 1, RATIO =  .50

PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                    6-HR        24-HR        72-HR      66.50-HR
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                    (INCHES)      3.668        3.676        3.676        3.676
                     (AC-FT)      2023.        2027.        2027.        2027.

                    CUMULATIVE AREA =   10.34 SQ MI

   ***            ***            ***            ***            ***

                     DIVERSION HYDROGRAPH   DIVERT
                       FOR PLAN 1, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     66.50-HR
  13490.      3.83        (CFS)     2953.        738.        266.        266.
                     (INCHES)      2.656       2.656       2.656       2.656
                      (AC-FT)      1464.       1464.       1464.       1464.

                    CUMULATIVE AREA =   10.34 SQ MI

   ***            ***            ***            ***            ***

                     HYDROGRAPH AT STATION     FLOW
                       FOR PLAN 1, RATIO = 1.00

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     66.50-HR
  17852.      3.83        (CFS)     6862.       1720.        621.        621.
                     (INCHES)      6.170       6.187       6.187       6.187
                      (AC-FT)      3402.       3412.       3412.       3412.

                    CUMULATIVE AREA =   10.34 SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 167 KK     *     NDIV   *
            *            *
            **************

 169 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           3  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

     DT          DIVERSION
                      ISTAD        EXIT  DIVERSION HYDROGRAPH IDENTIFICATION

     DI             INFLOW         .00   1218.00   5000.00  10000.00

     DQ       DIVERTED FLOW        .00       .00   3782.00   8782.00
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DIVERSION HYDROGRAPH EXIT
FOR PLAN 1, RATIO = .50

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	66.50-HR
927.	3.17	(CFS)	87.	22.	8.	8.
		(INCHES)	.705	.705	.705	.705
		(AC-FT)	43.	43.	43.	43.

CUMULATIVE AREA = 1.15 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION NDIV
FOR PLAN 1, RATIO = .50

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	66.50-HR
1218.	2.33	(CFS)	431.	114.	41.	41.
		(INCHES)	3.483	3.696	3.698	3.698
		(AC-FT)	214.	227.	227.	227.

CUMULATIVE AREA = 1.15 SQ MI

*** *** *** *** ***

DIVERSION HYDROGRAPH EXIT
FOR PLAN 1, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	66.50-HR
3105.	3.17	(CFS)	450.	112.	41.	41.
		(INCHES)	3.635	3.635	3.635	3.635
		(AC-FT)	223.	223.	223.	223.

CUMULATIVE AREA = 1.15 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION NDIV
FOR PLAN 1, RATIO = 1.00

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	66.50-HR
1218.	2.67	(CFS)	607.	160.	58.	58.
		(INCHES)	4.911	5.180	5.182	5.182
		(AC-FT)	301.	318.	318.	318.

CUMULATIVE AREA = 1.15 SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO FLOWS RATIO 1 .50	RATIO 2 1.00
HYDROGRAPH AT	15	1.76	1	FLOW	3601.	7203.
				TIME	3.00	3.00
ROUTED TO	R15	1.76	1	FLOW	3502.	7003.
				TIME	3.00	3.00
HYDROGRAPH AT	14	1.11	1	FLOW	2274.	4548.
				TIME	3.00	3.00
HYDROGRAPH AT	16	2.16	1	FLOW	4079.	8157.
				TIME	3.00	3.00
3 COMBINED AT	114	5.03	1	FLOW	9855.	19709.
				TIME	3.00	3.00
ROUTED TO	R114	5.03	1	FLOW	9562.	19125.
				TIME	3.17	3.17
HYDROGRAPH AT	13	1.29	1	FLOW	2748.	5495.
				TIME	3.00	3.00
2 COMBINED AT	113	6.32	1	FLOW	11803.	23606.
				TIME	3.00	3.00
ROUTED TO	R113	6.32	1	FLOW	11365.	22730.
				TIME	3.17	3.17
HYDROGRAPH AT	12	1.32	1	FLOW	2743.	5485.
				TIME	3.00	3.00
2 COMBINED AT	112	7.64	1	FLOW	13857.	27714.
				TIME	3.17	3.17
ROUTED TO	R112	7.64	1	FLOW	13590.	27181.
				TIME	3.17	3.17
HYDROGRAPH AT	11	.70	1	FLOW	1531.	3061.
				TIME	3.00	3.00
HYDROGRAPH AT	17	.37	1	FLOW	761.	1521.
				TIME	3.00	3.00
HYDROGRAPH AT	10	.54	1	FLOW	1109.	2219.
				TIME	3.00	3.00
4 COMBINED AT	111	9.25	1	FLOW	15971.	31942.
				TIME	3.17	3.17
ROUTED TO	RD111	9.25	1	FLOW	15054.	30107.
				TIME	3.83	3.83

HYDROGRAPH AT	2A	1.24	1	FLOW	2236.	4471.
				TIME	3.00	3.00
2 COMBINED AT	CP2A	10.34	1	FLOW	15671.	31342.
				TIME	3.83	3.83
DIVERSION TO	DIVERT	10.34	1	FLOW	4965.	13490.
				TIME	3.83	3.83
HYDROGRAPH AT	FLOW	10.34	1	FLOW	10706.	17852.
				TIME	3.83	3.83
ROUTED TO	RR2A	10.34	1	FLOW	10396.	17236.
				TIME	4.17	4.17
HYDROGRAPH AT	2BE	1.22	1	FLOW	2150.	4299.
				TIME	3.17	3.17
2 COMBINED AT	1C2B	11.56	1	FLOW	11185.	18814.
				TIME	4.17	4.17
ROUTED TO	DET2BE	11.56	1	FLOW	11040.	18571.
				TIME	4.33	4.17
			** PEAK STAGES IN FEET **			
			1	STAGE	1654.33	1657.06
				TIME	4.33	4.17
DIVERSION TO	SPILL	11.56	1	FLOW	7375.	14906.
				TIME	4.33	4.17
HYDROGRAPH AT	FRWAY	11.56	1	FLOW	3665.	3665.
				TIME	3.33	3.00
ROUTED TO	CHAN	11.56	1	FLOW	3685.	3694.
				TIME	3.50	3.17
ROUTED TO	WASH	11.56	1	FLOW	3665.	3665.
				TIME	5.83	6.17
HYDROGRAPH AT	RSPILL	.00	1	FLOW	7375.	14906.
				TIME	4.33	4.17
ROUTED TO	IDAHO	.00	1	FLOW	7371.	14935.
				TIME	4.33	4.33
2 COMBINED AT	WW	11.56	1	FLOW	10998.	18592.
				TIME	4.33	4.33
ROUTED TO	RWW	11.56	1	FLOW	10296.	17380.
				TIME	5.33	5.33
HYDROGRAPH AT	2BWW	.45	1	FLOW	828.	1656.
				TIME	3.17	3.17
HYDROGRAPH AT	2BWE	.70	1	FLOW	1372.	2745.
				TIME	3.00	3.00
ROUTED TO	DET2BW	.70	1	FLOW	1317.	2667.
				TIME	3.17	3.17
			** PEAK STAGES IN FEET **			

				TIME	3.17	3.17
2 COMBINED AT	CC04	1.15	1	FLOW	2145.	4323.
				TIME	3.17	3.17
DIVERSION TO	EXIT	1.15	1	FLOW	927.	3105.
				TIME	3.17	3.17
HYDROGRAPH AT	NDIV	1.15	1	FLOW	1218.	1218.
				TIME	2.83	2.67
ROUTED TO	NDRCUT	1.15	1	FLOW	1070.	1218.
				TIME	3.67	3.83
			** PEAK STAGES IN FEET **			
			1	STAGE	1629.78	1630.06
				TIME	3.67	3.83
ROUTED TO	R28W	1.15	1	FLOW	1049.	1210.
				TIME	4.00	4.33
HYDROGRAPH AT	2BS	1.91	1	FLOW	3600.	7200.
				TIME	3.00	3.00
3 COMBINED AT	102	14.62	1	FLOW	11009.	19069.
				TIME	5.33	5.17
HYDROGRAPH AT	5	5.65	1	FLOW	8877.	17753.
				TIME	3.33	3.33
ROUTED TO	R5	5.65	1	FLOW	8800.	17600.
				TIME	3.50	3.50
HYDROGRAPH AT	4	11.85	1	FLOW	13555.	27109.
				TIME	4.00	4.00
2 COMBINED AT	104	17.50	1	FLOW	20710.	41419.
				TIME	3.67	3.67
ROUTED TO	R104	17.50	1	FLOW	19890.	39781.
				TIME	4.17	4.17
HYDROGRAPH AT	7	.61	1	FLOW	1247.	2494.
				TIME	3.00	3.00
HYDROGRAPH AT	6	7.86	1	FLOW	9600.	19201.
				TIME	3.83	3.83
3 COMBINED AT	106	25.97	1	FLOW	28791.	57583.
				TIME	4.17	4.17
ROUTED TO	R106	25.97	1	FLOW	28308.	56615.
				TIME	4.33	4.33
HYDROGRAPH AT	3N	2.39	1	FLOW	5465.	10931.
				TIME	3.17	3.17
ROUTED TO	CULV	2.89	1	FLOW	5186.	10358.
				TIME	3.17	3.17
			** PEAK STAGES IN FEET **			
			1	STAGE	1671.31	1676.48
				TIME	3.17	3.17

ROUTED TO	RCULV	2.89	1	FLOW	4833.	9623.
				TIME	3.67	3.67
HYDROGRAPH AT	3S	2.39	1	FLOW	4469.	8939.
				TIME	3.17	3.17
2 COMBINED AT	103	5.28	1	FLOW	7872.	15586.
				TIME	3.33	3.33
HYDROGRAPH AT	3A	1.20	1	FLOW	2300.	4599.
				TIME	3.17	3.17
2 COMBINED AT	CP103	6.48	1	FLOW	9947.	19536.
				TIME	3.33	3.33
2 COMBINED AT	W103	32.45	1	FLOW	33359.	66720.
				TIME	4.17	4.17
ROUTED TO	RW103	32.45	1	FLOW	33166.	66343.
				TIME	4.33	4.33
2 COMBINED AT	PLD	47.07	1	FLOW	40324.	80002.
				TIME	4.67	4.50
ROUTED TO	RES	47.07	1	FLOW	15558.	72726.
				TIME	6.67	5.17

** PEAK STAGES IN FEET **

1	STAGE	1587.65	1590.40
	TIME	6.67	5.17

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1654.33	4.33	224.	11040.	2.83	4.33	.00
1.00	1657.06	7.06	284.	18571.	3.83	4.17	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BW

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1632.80	2.80	41.	1317.	3.00	3.17	.00
1.00	1634.67	4.67	53.	2667.	4.00	3.17	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1629.78	.00	23.	1070.	.00	3.67	.00
1.00	1630.06	.06	26.	1218.	.83	3.83	.00

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	5941.	8955.
OUTFLOW	75.	165.	22798.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	1587.65	.00	8130.	15558.	.00	6.67	.00
1.00	1590.40	1.30	9691.	72726.	2.50	5.17	.00

```
*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING          3-JAN-89        14:18:20

PROCESS 74 TERMINATED

ELAPSED TIME  0:00:52, CPU TIME  00:00:00.087, I/O BLOCKS  52
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF         3-JAN-89        14:18:20

****
*LIST FILE EMPTY, WILL NOT BE PRINTED
****
```

Appendix H

HEC-1 Output

Alternative A :
Excavate More Volume from Behind
Powerline F.R.S. (100 Year Storm)

```
$   $  $   $  $$$$        $   $   $$$   $   $
$   $  $   $  $   $       $   $  $   $  $$ $$
$   $   $ $   $   $       $   $  $      $ $ $
$$$$$    $    $   $       $ $ $   $$$   $ $ $
$   $    $    $   $       $ $ $      $  $   $
$   $    $    $   $   $$  $$ $$  $   $  $   $
$   $    $    $$$$    $$  $   $   $$$   $   $
```

DEST=HYD.WSM USER=HYD.WSM QUEUE=LPT DEVICE=@LPB
SEQ=120 QPRI=128 CPL=132 LPP=66 COPIES=1 PAGES=65

CREATED: 03-JAN-89 14:42:40
ENQUEUED: 03-JAN-89 15:04:06
PRINTING: 03-JAN-89 15:04:06

PATH=:SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:ALTA100.OUT

```
  $    $      $$$$$    $      $    $$$    $$$          $$$   $   $  $$$$$
 $ $   $        $     $ $    $$   $   $  $   $        $   $  $   $    $
$   $  $        $    $   $  $ $   $  $$  $  $$        $   $  $   $    $
$   $  $        $    $   $    $   $ $ $  $ $ $        $   $  $   $    $
$$$$$  $        $    $$$$$    $   $$  $  $$  $        $   $  $   $    $
$   $  $        $    $   $    $   $   $  $   $   $$   $   $  $   $    $
$   $  $$$$$    $    $   $  $$$$$  $$$    $$$    $$    $$$    $$$     $
```

AOS/VS REV 7.62.00.00

AOS/VS REVISION 7.62.00.00
AOS/VS XLPT-32 REVISION 7.62.00.00

```
**** AOS/VS REV 7.62.00.00 / BATCH OUTPUT FILE ****

AOS/VS 7.62.00.00 / EXEC-32 7.62.00.00   3-JAN-89        14:42:42
QPRI=128          SEQ=103
INPUT FILE -- :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR:?33.CLI.00012.JOB (WILL BE DELETED AFTER PROCESSIN
LIST FILE  -- :QUEUE:HYD.WSM.LIST.103

--------
LAST MESSAGE CHANGE      17-NOV-88        14:55:52

                ****************          *******        ************
                *************        *************        ************
               ***                 ****      ***         ***      ***
              *******             ***                   ***      ***
             ******              ***                   ***      ***
            ***                 ***       ***         ***      ***
           ****                 ************        *************
         ******                  *******         *************

--------
MOST RECENT LOGON        3-JAN-89        14:34:04

AOS/VS CLI    REV 07.62.00.00      3-JAN-89        14:42:45
) SEARCHLIST :UTIL/:MACROS/:UDD:HYD.WSM/:UDD:OP/:PER/:
) DIRECTORY :SMOKE:USER:HYDRO.DIR:WATERSHED.DIR:32.DIR:WEEKES.DIR:POWERLINE.DIR
) DEFACL HYD.WSM/OWARE
)
) LISTFILE ALTA100.OUT
) DATAFILE ALTA100.DAT
) SEA :UTIL:HEC1.DIR/[!SEA]
) X HEC1_START
```

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            FEBRUARY 1981             *
*           REVISED 31 JAN 85          *
*                                      *
*  RUN DATE 1/ 3/1989   TIME14:42:50 * 
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285    *
*                                      *
****************************************
```

```
X      X  XXXXXXX   XXXXX            X
X      X  X         X     X         XX
X      X  X         X                X
XXXXXXX   XXXX      X        XXXXX   X
X      X  X         X                X
X      X  X         X     X          X
X      X  XXXXXXX   XXXXX           XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THE VERSION RELEASED 31JAN85 CONTAINS NEW OPTIONS ON RL AND BA RECORDS, AND ADDS THE HL RECORD. SEE JANUARY 1985 INPUT DESCRIPTION FOR NEW DEFINITIONS.

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID      WEEKES WASH - POWERLINE F.R.S  ANALYSIS
  2           ID      CONVERSION OF MODEL FROM TR-20
  3           ID                    100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
  4           ID                    DEVELOPMENT, MUSKINGUM ROUTING
  5           ID      ALTERNATIVE A : EXCAVATE STORAGE BEHIND POWERLINE F.R.S.
  6           ID         CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
  7           ID                          POINT OF WEEKES WASH AT JUNCTION ROAD.
  8           ID                       2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
  9           ID                          AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
 10           ID                          LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
 11           ID                       3: SUPERSTITION FREEWAY IN PLACE.
 12           ID                       4: ADJUSTED WATERSHED AREAS.
 13           ID                       5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
 14           ID                       6: MODIFICATIONS TO POWERLINE F.R.S. - EXTRA STORAGE
 15           IT       10        0        0      400
 16           IO        5

 17           KK       15  WATERSHED 15
 18           KM       HYDROGRAPH FOR WATERSHED 15
 19           PB     3.85
 20           IN       15
 21           PC        0     .002     .005     .008     .011     .014     .017     .020     .023     .026
 22           PC     .029     .032     .035     .038     .041     .044     .048     .052     .056     .060
 23           PC     .064     .068     .072     .076     .080     .085     .090     .095     .100     .105
 24           PC     .110     .115     .120     .126     .133     .140     .147     .155     .163     .172
 25           PC     .181     .191     .203     .218     .236     .257     .283     .387     .663     .707
 26           PC     .735     .758     .766     .791     .804     .815     .825     .834     .842     .849
 27           PC     .856     .863     .869     .875     .881     .887     .893     .898     .903     .908
 28           PC     .913     .918     .922     .926     .930     .934     .938     .942     .946     .950
 29           PC     .953     .956     .959     .962     .965     .968     .971     .974     .977     .980
 30           PC     .983     .986     .992     .995     .998    1.000    1.000    1.000
 31           BA     1.76
 32           LS        0       80
 33           UD      .18

 34           KK      R15 ROUTE HYDROGRAPH FROM WS 15
 35           KM      ROUTE HYDROGRAPH FROM WATERSHED 15
 36           RM        1      .11       .3

 37           KK       14 WATERSHED 14
 38           KM      HYDROGRAPH FOR WATERSHED 14
 39           BA     1.11
 40           LS        0       79
 41           UD      .15

 42           KK       16 WATERSHED 16
 43           KM      HYDROGRAPH FOR WATERSHED 16
 44           BA     2.16
 45           LS        0       82
 46           UD      .35
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  47          KK      114 CONCENTRATION PT. 114 (INCLUDES WATERSHEDS 14, 15, & 16)
  48          KM      COMBINE ALL THREE HYDROGRAPHS AT CP 114
  49          HC        3

  50          KK     R114 ROUTE CP 114
  51          KM      ROUTE HYDROGRAPH FROM CP114 TO CP 113
  52          RM        1      .17       .3

  53          KK       13 WATERSHED 13
  54          KM      HYDROGRAPH FOR WATERSHED 13
  55          BA     1.29
  56          LS        0       83
  57          UD     .126

  58          KK      113 CONCENTRATION PT 113 FOR HYDROGRAPHS CP 114 AND WS 13
  59          KM      COMBINE HYDROGRAPHS CP 114 AND WS 13
  60          HC        2

  61          KK     R113 ROUTE CP 113 TO CP 112
  62          KM      ROUTE HYDROGRAPH FOR CP 113
  63          RM        1      .19       .3

  64          KK       12 WATERSHED 12
  65          KM      HYDROGRAPH FOR WATERSHED 12
  66          BA     1.32
  67          LS        0       86
  68          UD      .27

  69          KK      112 CONCENTRATION PT. 112 FOR HYDROGRAPHS FROM CP 113 AND WS 12.
  70          KM      COMBINE HYDROGRAPH FROM CP 113 AND WS 12
  71          HC        2

  72          KK     R112 ROUTE CP 112 TO CP 111
  73          KM      ROUTE HYDROGRAPH CP 112 TO CP 111
  74          RM        1      .07       .3

  75          KK       11 WATERSHED 11
  76          KM      HYDROGRAPH FOR WATERSHED 11
  77          BA      .70
  78          LS        0       89
  79          UD     .186

  80          KK       17 WATERSHED 17
  81          KM      HYDROGRAPH FOR WATERSHED 17
  82          BA      .37
  83          LS        0       79
  84          UD     .138

  85          KK       10   WATERSHED 10
  86          KM      HYDROGRAPH FOR WATERSHED 10
  87          BA      .54
  88          LS        0       79
  89          UD      .14
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  90          KK     111 CONCENTRATION PT. 111
  91          KM     COMBINE HYDROGRAPHS FROM CP 112, WS 11, AND WS 17
  92          HC       4

  93          KK   RD111 ROUTE CP 111 TO PT AT WHICH BREAKOUT WOULD OCCUR.
  94          KM     ROUTE HYDROGRAPH CP111 TO THE POINT AT WHICH THE BREAKOUT OCCURS.
  95          RM       5     .64      .3

  96          KK      2A  WATERSHED 2A
  97          KM      HYDROGRAPH FOR WATERSHED 2A
  98          BA    1.09
  99          LS       0       82
 100          UD     .22

 101          KK    CP2A  CONCENTRATION POINT 2A
 102          KM    COMBINE ROUTED HYDROGRAPH FROM CP 111 AND WATERSHED 2A.
 103          HC       2

 104          KK    FLOW     POINT OF DIVERSION FOR WEEKES WASH
 105          KO       3
 106          DT  DIVERT
 107          DI       0    6500    7000    9000   10000   15000
 108          DQ       0       0     260    1300    1880    4600

 109          KK    RR2A ROUTE REMAINING HYDROGRAPH TO SUPERSTITION FREWAY
 110          KM     ROUTE THE REMAINING HYDROGRAPH TO DETENTION NORTH OF SUPERSTITION FREEWAY
 111          RM       2     .42      .3

 112          KK     2BE WATERSHED 2B EAST
 113          KM     HYDROGRAPH FOR WATERSHED 2B EAST
 114          BA    1.22
 115          LS       0       82
 116          UD     .48

 117          KK    102B  CONCENTRATION POINT NORTH OF FREEWAY
 118          KM     CONCENTRATION POINT NORTH OF SUPERSTITION FREEWAY AT DETENTION AREA
 119          HC       2

 120          KK  DET2BE   ROUTE THROUGH FREEWAY  (WEEKES WASH DETENTION BASIN)
 121          KM      ROUTE FLOW THROUGH WEEKES WASH DETENTION BASIN AND THEN FREEWAY
 122          KM      PRINCIPLE OUTLET IS 2-12 X 12 (FOOT) BOX CULVERTS
 123          KM      INVERT IS AT 1636; EMERGENCY SPILLWAY CREST IS AT 1650.
 124          RS       1    ELEV    1636
 125          SV       0     6.0    13.0    29.0    47.0    69.0    93.0   122.0   153.0   184.0
 126          SV     217     239
 127          SE    1636    1637    1638    1640    1642    1644    1646    1648    1650    1652
 128          SE    1654    1655
 129          SQ       0      22     194     584    1050    1604    2236    2900    3534    4108
 130          SQ    4622    4860
 131          ST    1650     320     2.2     1.5
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 132          KK   FRWAY
 133          KM    DIVERT ALL FLOWS FROM EMERGENCY SPILLWAY
 134          DT   SPILL
 135          DI       0     3665     5000    10000    15000
 136          DQ       0        0     1335     6335    11335

 137          KK    CHAN  ROUTE FLOWS THROUGH THE CHANNEL
 138          KM     ROUTE FLOW THROUGH THE IMPROVED CHANNEL
 139          RM       1       .1       .3

 140          KK    WASH   ROUTE FLOWS THROUGH THE WASH
 141          KM      ROUTE FLOWS THROUGH THE NATURAL WASH SYSTEM
 142          RM       2      .50       .3

 143          KK  RSPILL
 144          KM    RETRIEVE FLOW DIVERTED FROM THE EMERGENCY SPILLWAY
 145          DR   SPILL

 146          KK   IDAHO
 147          KM    RCUTE THE RETRIEVED FLOW DOWN IDAHO RD.
 148          RM       1       .1       .3

 149          KK      WW
 150          KM     COMBINE ALL FLOWS FROM FREEWAY
 151          HC       2

 152          KK     RWW
 153          KM     ROUTE FLOWS TO POWERLINE F.R.S.
 154          RM       4      .98       .3

 155          KK    2BWW  WATERSHED 2B WEST, WEST
 156          KM      HYDROGRAPH FOR WATERSHED 2B WEST, WEST
 157          BA     .45
 158          LS       0       82
 159          UD      .4

 160          KK    2BWE  WATERSHED 2B WEST, EAST
 161          KM     RUNOFF FROM EAST OF IDAHO ROAD 2B WEST, EAST
 162          BA     .70
 163          LS       0       82
 164          UD      .3

 165          KK  DET2BW  ROUTE THROUGH THE DETENTION NORTH OF THE FREEWAY  (N. DIVERSION DAM)
 166          KM      ROUTE FLOWS THRCUGH THE DETENTION NORTH OF THE SUPERSTITION FREEWAY
 167          RS       1    ELEV  1623.5
 168          SV       0      .6      8.3     17.5     28.2     36.0     48.6
 169          SE  1623.5  1624.0  1626.0  1628.0  1630.0  1632.0  1634.0
 170          SQ       0       0      31      93      135      169      208
 171          ST  1630.0     110     2.2     1.5
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 172          KK     CC04  COMBINE FLOWS JUST NORTH OF FREEWAY
 173          KM     COMBINE THE FLOWS JUST NORTH OF THE FREEWAY
 174          HC        2

 175          KK     NDIV
 176          KM     DIVERSION OF FLOW OVER THE NORTH DIVERSION DAM.
 177          KO        3
 178          DT     EXIT
 179          DI        0     1218     5000    10000
 180          DQ        0        0     3782     8782

 181          KK   NDROUT  ROUTE THROUGH THE FREEWAY
 182          KM     ROUTE COMBINED FLOW THROUGH 2 - 10  X 8  BOX CULVERTS
 183          RS        1     ELEV  1622.6
 184          SV        0     0.02     0.16     1.12     4.17    25.42
 185          SE   1622.6  1623.0   1624.0   1626.0   1628.0   1630.0
 186          SQ        0        0      101      372      738     1111
 187          ST   1630.0     2875      2.2      1.5

 188          KK     R2BW  ROUTE TO CP102
 189          KM      ROUTE THE FLOWS FROM DETENTION POND TO CP102 (POWERLINE F.R.S.)
 190          RM        2      .40      .3

 191          KK      2BS  WATERSHED 2B SOUTH OF SUPERTITION FREEWAY
 192          KM      HYDROGRAPH FOR WATERSHED 2B SOUTH
 193          BA     1.91
 194          LS        0       80
 195          UD      .32

 196          KK      102 CONCENTRATION PT. 102, WEEKES WASH WATERSHED AT POWERLINE FRS.
 197          KM      COMBINE HYDROGRAPHS FROM CP D111 AND WS 2 (WE ARE NOW AT POWERLINE DAM)
 198          HC        3

 199          KK        5 WATERSHED 5 ( BEGINNING OF SIPHON DRAW WATERSHED)
 200          KM      HYDROGRAPH FOR WS 5 (BEGINNING OF THE WATERSHED FOR SIPHON DRAW TO THE DAM)
 201          BA     5.65
 202          LS        0       85
 203          UD      .71

 204          KK       R5 ROUTE HYDROGRAPH FROM WS 5 TO CP 104
 205          KM       ROUTE HYDROGRAPH FOR WS 5 TO CP 104
 206          RM        1      .07      .3

 207          KK        4 WATERSHED 4
 208          KM       HYDROGRAPH FOR WATERSHED 4
 209          BA    11.85
 210          LS        0       86
 211          UD     1.30
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 212          KK      104  CONCENTRATION POINT 104
 213          KM      COMBINE HYDROGRAPHS AT CP 104
 214          HC        2

 215          KK     R104
 216          KM     ROUTE CP 104 TO 106
 217          RM        2      .50       .3

 218          KK        7  WATERSHED 7
 219          KM     HYDROGRAPH FOR WATERSHED 7
 220          BA      .61
 221          LS        0       86
 222          UD       .3

 223          KK        6 WATERSHED 6
 224          KM       HYDROGRAPH FOR WATERSHED 6
 225          BA     7.86
 226          LS        0       83
 227          UD     1.08

 228          KK      106 CONCENTRATION PT. 106, HYDROGRAPHS FROM R 5, WS 4, & WS 6
 229          KM       COMBINE HYDROGRAPHS FROM R5, WS 4, AND WS 6
 230          HC        3

 231          KK     R106 ROUTE THE HYDROGRAPH FROM CP 106 TO WHERE NEXT WASH ENTERS.
 232          KM       ROUTE HYDROGRAPH FROM CP 104 TO WHERE OTHER WASH ENTERS
 233          RM        1      .27       .3

 234          KK       3N WATERSHED 3N
 235          KM       HYDROGRAPH FOR WATERSHED 3N
 236          BA     2.89
 237          LS        0       85
 238          UD      .41

 239          KK     CULV   ROUTE FLOWS THROUGH CULVERTS
 240          KM      ROUTE FLOWS THROUGH THE CULVERTS
 241          RS      1.0    ELEV    1665
 242          SV        0      .15      .60      1.5      3.1      5.6      9.1     13.7    19.45    26.35
 243          SE     1665   1665.5     1666   1666.5     1667   1667.5     1668   1668.5     1669   1669.5
 244          SQ        0      119      375      688     1063     1462     1938     2375     2875     3375

 245          KK    RCULV  ROUTE FLOWS TO W103
 246          KM      ROUTE THE FLOWS TO CONCENTRATION POINT W103
 247          RM        2       .5       .3

 248          KK       3S  WATERSHED 3 SOUTH
 249          KM       HYDROGRAPH FOR WATERSHED 3 SOUTH
 250          BA     2.39
 251          LS        0       85
 252          UD     .436
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 253          KK      103
 254          HC        2

 255          KK       3A   WATERSHED 3A
 256          KM      HYDROGRAPH FOR WATERSHED 3A
 257          BA     1.20
 258          LS        0       86
 259          UD       .4

 260          KK    CP103
 261          KM      CONCENTRATION POINT FOR WEST FORK OF SIPHON DRAW
 262          HC        2

 263          KK     W103 CONCTRATION PT. W103 WHERE UNNAMED WASH ENTERS.
 264          KM       COMBINE HYDROGRAPHS FROM CP 104 AND WS 3 - SIPHON DRAW WATERSHED
 265          HC        2

 266          KK    RW103 ROUTE RESULTING HYDROGRAPH TO POWELINE DAM STRUCTURE
 267          KM       ROUTE THE HYDROGRAPH TO POWERLINE DAM
 268          RM        1      .16       .3

 269          KK      PLD CONCENTRATION PT. AT POWERLINE DAM
 270          KM      COMBINE HYDROGRAPHS FROM WEEKES WASH SUB-BASIN AND SIPHON DRAW SUB-BASIN
 271          HC        2

 272          KK      RES RESERVOIR ROUTING THROUGH THE STRUCTURE
 273          KM      RESERVOIR RATING CURVE
 274          RS        1     ELEV  1568.2
 275          SV        0      175      380     1768     3465     5268     5941     7196     9465
 276          SQ        0       75       92      119      141      159      165     7360    27280
 277          SE   1568.1   1568.2   1570.0   1574.0   1578.0   1582.0   1583.3   1586.0   1590.0
 278          SS   1583.3        0        0        0
 279          ST   1589.1    13358      2.2      1.5
 280          ZZ
```

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             FEBRUARY 1981             *
*           REVISED 31 JAN 85           *
*                                       *
*  RUN DATE 1/ 3/1989   TIME14:43: 6 *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*  (916) 440-3285 OR (FTS) 448-3285     *
*                                       *
*****************************************
```

```
                    WEEKES WASH - POWERLINE F.R.S  ANALYSIS
                    CONVERSION OF MODEL FROM TR-20
                                 100-YEAR, 24-HOUR STORM; SCS EXCESS & HYDROGRAPH
                                 DEVELOPMENT, MUSKINGUM ROUTING
                    ALTERNATIVE A : EXCAVATE STORAGE BEHIND POWERLINE F.R.S.
                       CONDITIONS:   1: 100-YR, 24-HR STORM IS CONTAINED WITHIN THE BREAKOUT
                                        POINT OF WEEKES WASH AT JUNCTION ROAD.
                                     2: FUTURE CONDITIONS. ALL CURRENT OPEN SPACE AND
                                        AGRICULTURAL LANDS ARE DEVELOPED TO 1/4 - 1/2 ACRE
                                        LOTS, WITH NO DETENTION REQUIREMENTS.  WORST CASE SCENA
                                     3: SUPERSTITION FREEWAY IN PLACE.
                                     4: ADJUSTED WATERSHED AREAS.
                                     5: BREAKOUT CURVE FOR NORTH DIVERSION DAM.
                                     6: MODIFICATIONS TO POWERLINE F.R.S. - EXTRA STORAGE

 16 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN          10  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         400  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3    0  ENDING DATE
                     NDTIME        1830  ENDING TIME

                  COMPUTATION INTERVAL      .17 HOURS
                       TOTAL TIME BASE   66.50 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 104 KK     *      FLOW  *          POINT OF DIVERSION FOR WEEKES WASH
            *            *
            **************

 105 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           3  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

     DT          DIVERSION
                      ISTAD      DIVERT  DIVERSION HYDROGRAPH IDENTIFICATION

     DI             INFLOW         .00   6500.00   7000.00   9000.00  10000.00  15000.00

     DQ      DIVERTED FLOW         .00       .00    260.00   1300.00   1880.00   4600.00

                                                                  ***

      ***            ***            ***            ***            ***

                        DIVERSION HYDROGRAPH   DIVERT

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                  6-HR       24-HR       72-HR      66.50-HR
      0.         .17        (CFS)      0.          0.          0.          0.
                         (INCHES)    .000        .000        .000        .000
                          (AC-FT)      0.          0.          0.          0.

                        CUMULATIVE AREA =   10.34 SQ MI

      ***            ***            ***            ***            ***

                        HYDROGRAPH AT STATION     FLOW

 PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                  6-HR       24-HR       72-HR      66.50-HR
    6348.     13.00        (CFS)    1874.        583.        210.        210.
                         (INCHES)   1.685       2.097       2.097       2.097
                          (AC-FT)    929.       1157.       1157.       1157.

                        CUMULATIVE AREA =   10.34 SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
 175 KK       *     NDIV   *
              *            *
              **************

 177 KO            OUTPUT CONTRCL VARIABLES
                        IPRNT          3  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE

     DT           DIVERSICN
                        ISTAD       EXIT  DIVERSION HYDROGRAPH IDENTIFICATION

     DI               INFLOW        .00   1218.00   5000.00  10000.00

     DQ        DIVERTED FLOW        .00       .00   3782.00   8782.00

                                                                  ***

      ***              ***             ***             ***             ***

                          DIVERSION HYDROGRAPH     EXIT

 PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                     6-HR       24-HR       72-HR      66.50-HR
      0.         .17          (CFS)       0.          0.          0.           0.
                           (INCHES)      .000        .000        .000         .000
                            (AC-FT)        0.          0.          0.           0.

                          CUMULATIVE AREA =    1.15 SQ MI

      ***              ***             ***             ***             ***

                          HYDROGRAPH AT STATION     NDIV

 PEAK FLOW      TIME                              MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                     6-HR       24-HR       72-HR      66.50-HR
    537.      12.50          (CFS)     190.         64.         23.          23.
                           (INCHES)    1.539       2.060       2.066        2.066
                            (AC-FT)       94.        126.        127.         127.

                          CUMULATIVE AREA =    1.15 SQ MI

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO     1462.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)
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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG
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RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	15	1890.	12.00	295.	91.	33.	1.76		
ROUTED TO	R15	1886.	12.17	295.	91.	33.	1.76		
HYDROGRAPH AT	14	1280.	12.00	179.	55.	20.	1.11		
HYDROGRAPH AT	16	1979.	12.17	391.	121.	44.	2.16		
3 COMBINED AT	114	4890.	12.17	865.	266.	96.	5.03		
ROUTED TO	R114	4521.	12.33	865.	266.	96.	5.03		
HYDROGRAPH AT	13	1922.	12.00	242.	75.	27.	1.29		
2 COMBINED AT	113	5124.	12.33	1106.	341.	123.	6.32		
ROUTED TO	R113	4890.	12.50	1106.	341.	123.	6.32		
HYDROGRAPH AT	12	1646.	12.17	275.	86.	31.	1.32		
2 COMBINED AT	112	5838.	12.33	1379.	427.	154.	7.64		
ROUTED TO	R112	5795.	12.50	1379.	427.	154.	7.64		
HYDROGRAPH AT	11	1040.	12.00	161.	50.	18.	.70		
HYDROGRAPH AT	17	447.	12.00	60.	18.	7.	.37		
HYDROGRAPH AT	10	647.	12.00	87.	27.	10.	.54		
4 COMBINED AT	111	6621.	12.33	1684.	522.	188.	9.25		
ROUTED TO	RD111	6187.	13.00	1682.	522.	188.	9.25		
HYDROGRAPH AT	2A	1227.	12.17	197.	61.	22.	1.09		
2 COMBINED AT	CP2A	6348.	13.00	1874.	583.	210.	10.34		
DIVERSION TO	DIVERT	0.	13.00	0.	0.	0.	10.34		
HYDROGRAPH AT	FLOW	6348.	13.00	1874.	583.	210.	10.34		
ROUTED TO	RR2A	5940.	13.50	1872.	583.	210.	10.34		
HYDROGRAPH AT	2BE	957.	12.33	220.	68.	25.	1.22		
2 COMBINED AT	1C2B	6160.	13.50	2087.	651.	235.	11.56		
ROUTED TO	DET2BE	5922.	13.67	2070.	651.	235.	11.56	1651.90	13.67
DIVERSION TO	SPILL	2257.	13.33	228.	57.	21.	11.56		
HYDROGRAPH AT	FRWAY	3665.	13.33	1842.	594.	214.	11.56		
ROUTED TO	CHAN	3681.	13.50	1842.	594.	214.	11.56		

ROUTED TO	WASH	3650.	14.50	1837.	594.	214.	11.56		
HYDROGRAPH AT	RSPILL	2257.	13.67	228.	57.	21.	.00		
ROUTED TO	IDAHO	2269.	13.67	228.	57.	21.	.00		
2 COMBINED AT	WW	5412.	13.83	2065.	651.	235.	11.56		
ROUTED TO	RWW	4535.	14.83	2057.	651.	235.	11.56		
HYDROGRAPH AT	2BWW	387.	12.33	81.	25.	9.	.45		
HYDROGRAPH AT	2BWE	716.	12.17	127.	39.	14.	.70		
ROUTED TO	DET2BW	300.	12.67	111.	39.	14.	.70	1630.74	12.67
2 COMBINED AT	C004	537.	12.50	190.	64.	23.	1.15		
DIVERSION TO	EXIT	0.	12.50	0.	0.	0.	1.15		
HYDROGRAPH AT	NDIV	537.	12.50	190.	64.	23.	1.15		
ROUTED TO	NDRCUT	530.	12.67	190.	64.	23.	1.15	1626.87	12.67
ROUTED TO	R2BW	506.	13.00	190.	64.	23.	1.15		
HYDROGRAPH AT	2BS	1724.	12.17	320.	99.	36.	1.91		
3 COMBINED AT	102	4809.	14.83	2413.	813.	294.	14.62		
HYDROGRAPH AT	5	3882.	12.67	1134.	353.	127.	5.65		
ROUTED TO	R5	3907.	12.67	1134.	353.	127.	5.65		
HYDROGRAPH AT	4	5614.	13.17	2433.	768.	277.	11.85		
2 COMBINED AT	104	8660.	12.83	3564.	1121.	405.	17.50		
ROUTED TO	R104	8251.	13.50	3558.	1121.	405.	17.50		
HYDROGRAPH AT	7	727.	12.17	127.	40.	14.	.61		
HYDROGRAPH AT	6	3788.	13.00	1459.	456.	164.	7.86		
3 COMBINED AT	106	11740.	13.33	5127.	1617.	583.	25.97		
ROUTED TO	R106	11406.	13.67	5120.	1617.	583.	25.97		
HYDROGRAPH AT	3N	2763.	12.33	582.	181.	65.	2.89		
ROUTED TO	CULV	2537.	12.33	582.	181.	65.	2.89	1668.66	12.33
ROUTED TO	RCULV	2246.	12.83	581.	181.	65.	2.89		
HYDROGRAPH AT	3S	2227.	12.33	481.	149.	54.	2.39		
2 COMBINED AT	103	3399.	12.67	1061.	330.	119.	5.28		
HYDROGRAPH AT	3A	1197.	12.33	250.	78.	28.	1.20		
2 COMBINED AT	CP103	4327.	12.50	1311.	408.	147.	6.48		

2 COMBINED AT	W103	13110.	13.50	6394.	2024.	731.	32.45		
ROUTED TO	RW103	13027.	13.67	6388.	2024.	731.	32.45		
2 COMBINED AT	PLD	14311.	13.67	8801.	2836.	1024.	47.07		
ROUTED TO	RES	161.	27.50	161.	160.	140.	47.07	1582.52	27.50

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET2BE

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1636.00	1650.00	1650.00
STORAGE	0.	153.	153.
OUTFLOW	0.	3534.	3534.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1651.90	1.90	182.	5922.	1.00	13.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DET28W

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1623.50	1630.00	1630.00
STORAGE	0.	28.	28.
OUTFLOW	0.	135.	135.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1630.74	.74	31.	300.	1.00	12.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION NDROUT

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1622.60	1630.00	1630.00
STORAGE	0.	25.	25.
OUTFLOW	0.	1111.	1111.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1626.87	.00	2.	530.	.00	12.67	.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION RES

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1568.20	1583.30	1589.10
STORAGE	175.	5941.	8955.
OUTFLOW	75.	165.	22798.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.0C	1582.52	.C0	5538.	161.	.00	27.50	.00

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*** NORMAL END OF HEC-1 ***
STOP
)
)
END OF FILE
AOS/VS CLI   TERMINATING          3-JAN-89        14:43:44

PROCESS 49 TERMINATED

ELAPSED TIME  0:01:0C, CPU TIME  00:00:00.092, I/O BLOCKS  61
(OTHER JOBS, SAME USERNAME:
    NUMBER OF CONSOLE JOBS, 1
    NUMBER OF BATCH JOBS, 0)
USER 'HYD.WSM' LOGGED OFF         3-JAN-89        14:43:44

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*LIST FILE EMPTY, WILL NOT BE PRINTED
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