RAINFALL

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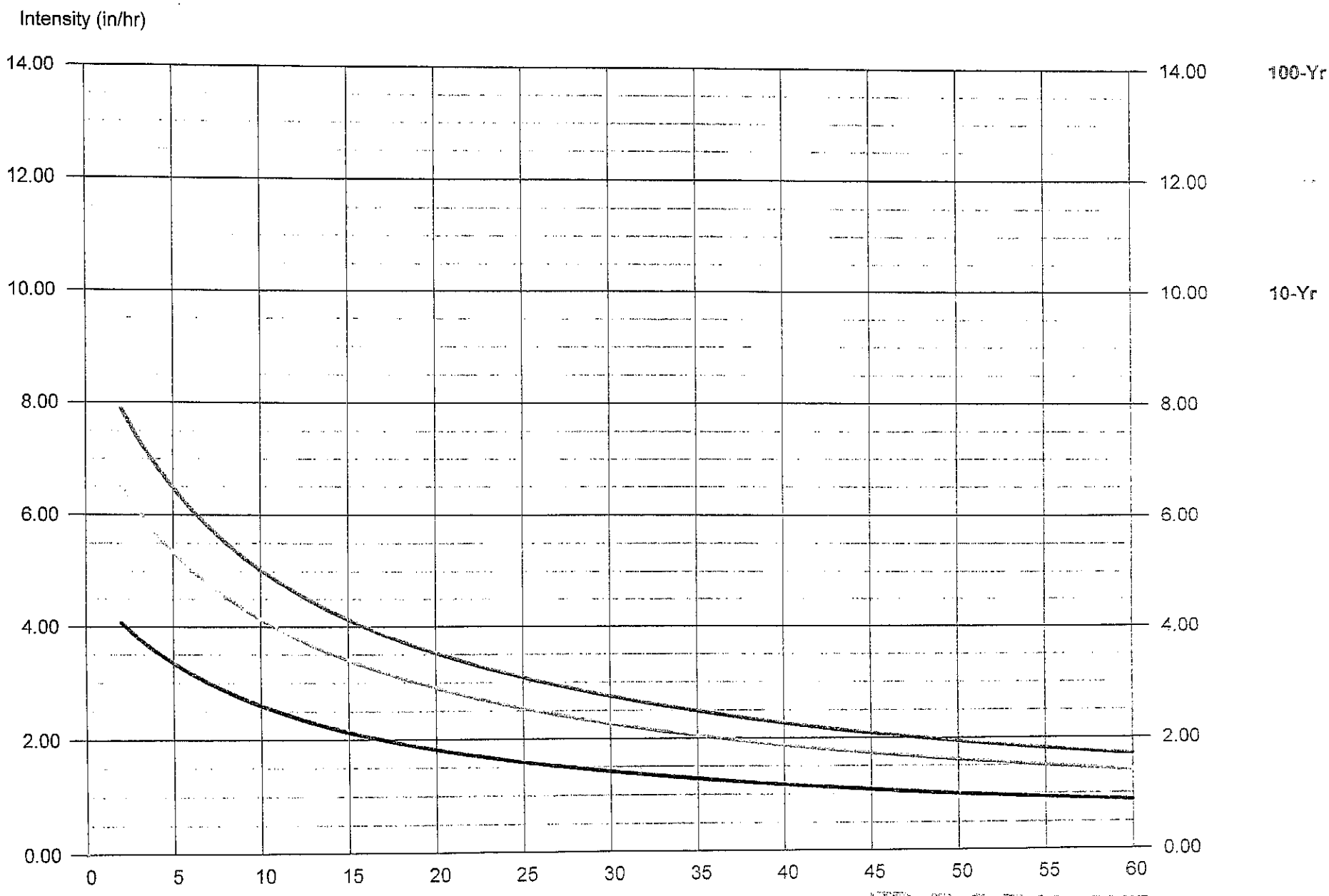
Hydraflow IDF Curves

IDF file: le verse.IDF



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Hydraflow Hydrographs 2007

NOAA Atlas 14, Volume 1, Version 5
Location name: Lehi, Utah, US*
Coordinates: 40.4373, -111.8674
Elevation: 4978ft*
* source: Google Maps

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval(years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.128 (0.112-0.148)	0.162 (0.143-0.188)	0.223 (0.195-0.259)	0.279 (0.241-0.324)	0.366 (0.308-0.429)	0.447 (0.366-0.526)	0.541 (0.430-0.647)	0.652 (0.499-0.792)	0.830 (0.602-1.03)	0.992 (0.689-1.26)
10-min	0.195 (0.171-0.226)	0.247 (0.217-0.287)	0.339 (0.297-0.394)	0.424 (0.366-0.493)	0.557 (0.469-0.652)	0.681 (0.558-0.804)	0.824 (0.655-0.984)	0.993 (0.760-1.21)	1.26 (0.917-1.57)	1.51 (1.05-1.92)
15-min	0.242 (0.212-0.280)	0.306 (0.270-0.355)	0.421 (0.368-0.488)	0.526 (0.454-0.611)	0.690 (0.581-0.809)	0.844 (0.692-0.996)	1.02 (0.812-1.22)	1.23 (0.942-1.49)	1.57 (1.14-1.95)	1.87 (1.30-2.38)
30-min	0.325 (0.285-0.377)	0.413 (0.363-0.478)	0.567 (0.495-0.657)	0.708 (0.611-0.823)	0.929 (0.783-1.09)	1.14 (0.931-1.34)	1.38 (1.09-1.64)	1.66 (1.27-2.01)	2.11 (1.53-2.62)	2.52 (1.75-3.20)
60-min	0.403 (0.353-0.466)	0.511 (0.449-0.592)	0.701 (0.613-0.813)	0.876 (0.756-1.02)	1.15 (0.969-1.35)	1.41 (1.15-1.66)	1.70 (1.35-2.03)	2.05 (1.57-2.49)	2.61 (1.90-3.25)	3.12 (2.17-3.97)
2-hr	0.503 (0.456-0.571)	0.630 (0.566-0.712)	0.823 (0.735-0.932)	1.00 (0.887-1.14)	1.29 (1.12-1.48)	1.56 (1.31-1.79)	1.87 (1.53-2.18)	2.24 (1.76-2.66)	2.83 (2.11-3.46)	3.37 (2.40-4.21)
3-hr	0.582 (0.531-0.649)	0.720 (0.658-0.801)	0.912 (0.827-1.01)	1.09 (0.979-1.21)	1.37 (1.21-1.53)	1.61 (1.39-1.82)	1.91 (1.60-2.19)	2.26 (1.84-2.69)	2.85 (2.21-3.49)	3.38 (2.52-4.26)
6-hr	0.762 (0.706-0.829)	0.936 (0.866-1.02)	1.14 (1.05-1.25)	1.32 (1.22-1.45)	1.59 (1.44-1.75)	1.82 (1.61-2.01)	2.07 (1.81-2.32)	2.38 (2.03-2.71)	2.95 (2.44-3.53)	3.44 (2.77-4.30)
12-hr	0.967 (0.893-1.05)	1.18 (1.09-1.29)	1.43 (1.32-1.56)	1.64 (1.50-1.80)	1.95 (1.76-2.14)	2.20 (1.96-2.44)	2.46 (2.16-2.76)	2.76 (2.38-3.14)	3.23 (2.71-3.76)	3.62 (2.96-4.33)
24-hr	1.08 (1.01-1.16)	1.33 (1.24-1.43)	1.58 (1.48-1.70)	1.79 (1.68-1.92)	2.08 (1.94-2.23)	2.30 (2.13-2.46)	2.52 (2.33-2.79)	2.78 (2.53-3.17)	3.26 (2.78-3.79)	3.65 (2.99-4.37)
2-day	1.28 (1.20-1.37)	1.57 (1.47-1.68)	1.87 (1.75-2.00)	2.12 (1.98-2.26)	2.45 (2.29-2.62)	2.71 (2.52-2.89)	2.97 (2.75-3.17)	3.23 (2.97-3.46)	3.57 (3.26-3.86)	3.83 (3.48-4.42)
3-day	1.40 (1.30-1.50)	1.71 (1.59-1.84)	2.04 (1.90-2.20)	2.32 (2.16-2.49)	2.70 (2.51-2.90)	2.99 (2.77-3.22)	3.29 (3.03-3.54)	3.60 (3.29-3.88)	4.00 (3.63-4.35)	4.31 (3.89-4.83)
4-day	1.51 (1.40-1.64)	1.85 (1.72-2.01)	2.22 (2.06-2.39)	2.52 (2.34-2.72)	2.95 (2.72-3.18)	3.28 (3.02-3.54)	3.62 (3.32-3.92)	3.96 (3.61-4.30)	4.43 (4.00-4.83)	4.80 (4.30-5.25)
7-day	1.79 (1.65-1.94)	2.19 (2.03-2.38)	2.61 (2.42-2.83)	2.96 (2.74-3.20)	3.43 (3.17-3.71)	3.80 (3.50-4.10)	4.16 (3.82-4.50)	4.53 (4.14-4.91)	5.02 (4.54-5.46)	5.38 (4.85-5.88)
10-day	2.01 (1.86-2.17)	2.46 (2.28-2.66)	2.92 (2.72-3.15)	3.29 (3.06-3.54)	3.78 (3.50-4.06)	4.14 (3.82-4.45)	4.49 (4.14-4.84)	4.84 (4.45-5.22)	5.28 (4.83-5.72)	5.61 (5.10-6.09)
20-day	2.65 (2.45-2.85)	3.25 (3.00-3.50)	3.83 (3.55-4.13)	4.29 (3.98-4.61)	4.87 (4.50-5.23)	5.28 (4.89-5.68)	5.68 (5.25-6.11)	6.06 (5.58-6.52)	6.52 (5.99-7.03)	6.84 (6.26-7.40)
30-day	3.19 (2.95-3.43)	3.90 (3.62-4.20)	4.59 (4.26-4.94)	5.13 (4.76-5.51)	5.82 (5.40-6.25)	6.33 (5.85-6.80)	6.81 (6.29-7.34)	7.27 (6.70-7.85)	7.85 (7.20-8.50)	8.26 (7.55-8.97)
45-day	3.96 (3.69-4.26)	4.84 (4.51-5.21)	5.68 (5.30-6.10)	6.33 (5.90-6.79)	7.16 (6.67-7.67)	7.75 (7.21-8.30)	8.31 (7.72-8.91)	8.84 (8.19-9.49)	9.47 (8.76-10.2)	9.91 (9.13-10.7)
60-day	4.69 (4.37-5.04)	5.74 (5.34-6.17)	6.72 (6.26-7.20)	7.47 (6.97-8.01)	8.42 (7.84-9.03)	9.10 (8.46-9.75)	9.73 (9.04-10.4)	10.3 (9.57-11.1)	11.0 (10.2-11.9)	11.5 (10.6-12.4)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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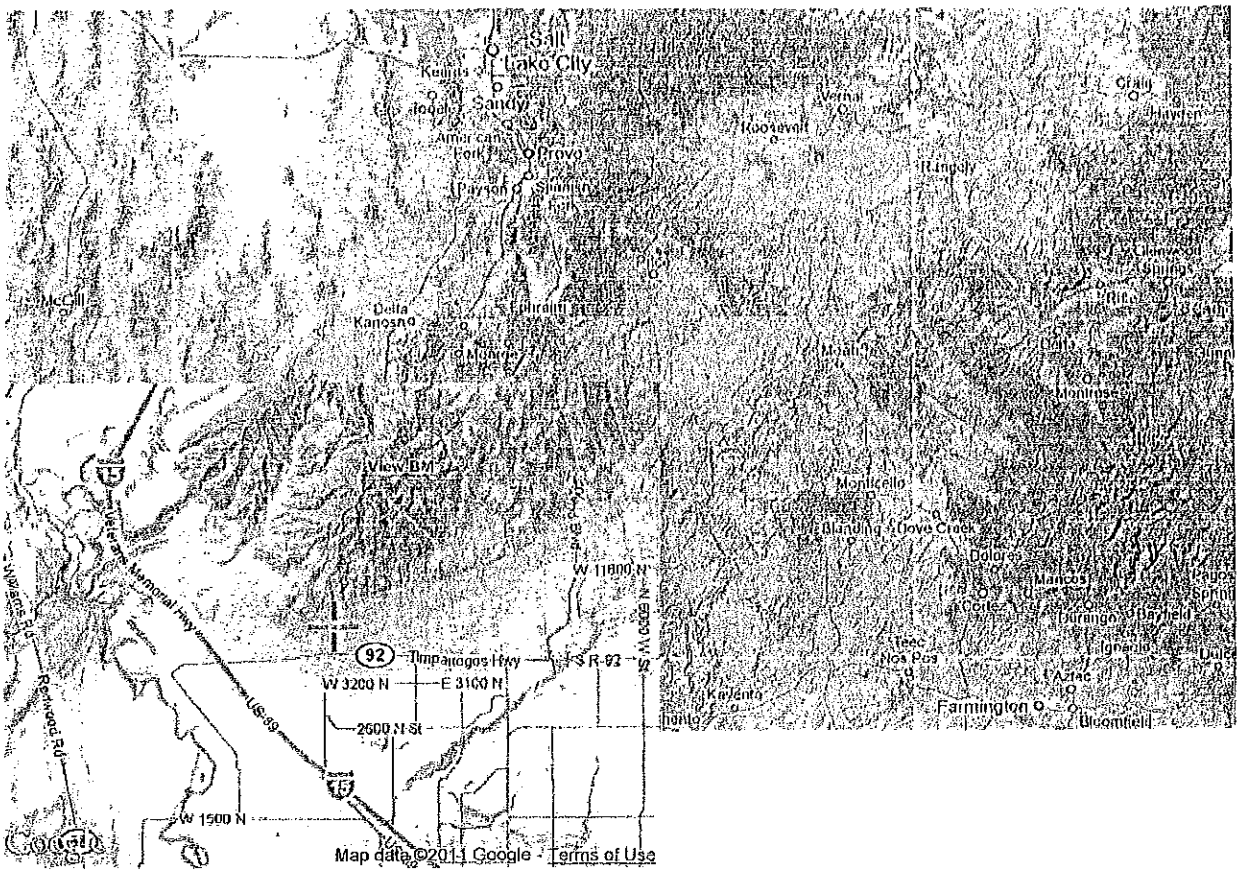
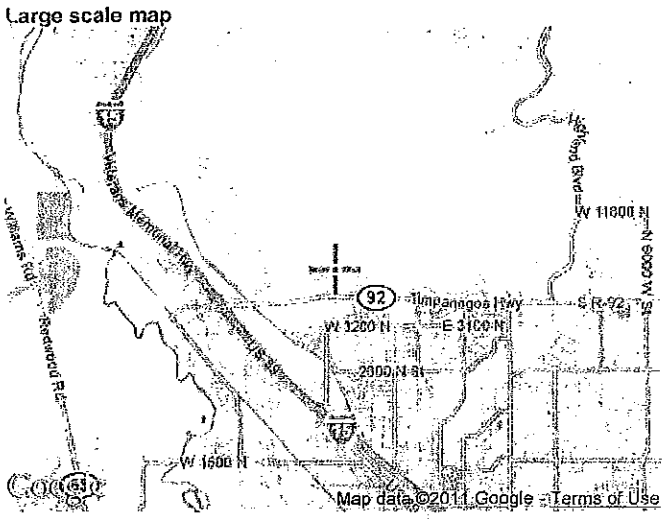


Large scale map



Large scale aerial

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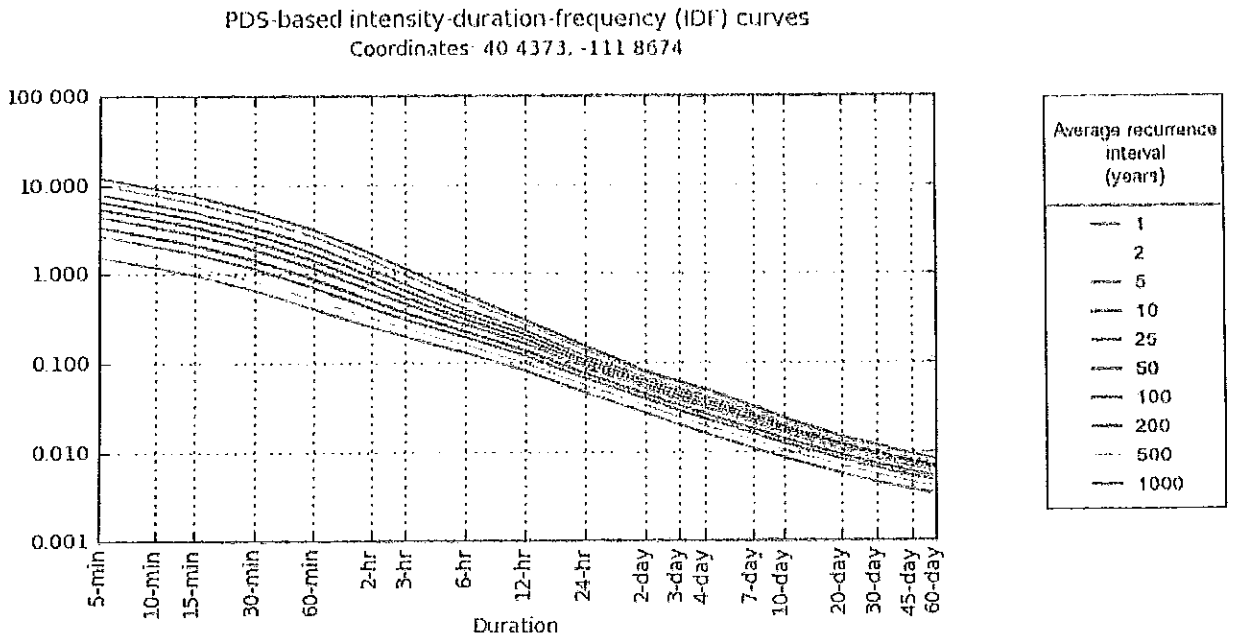
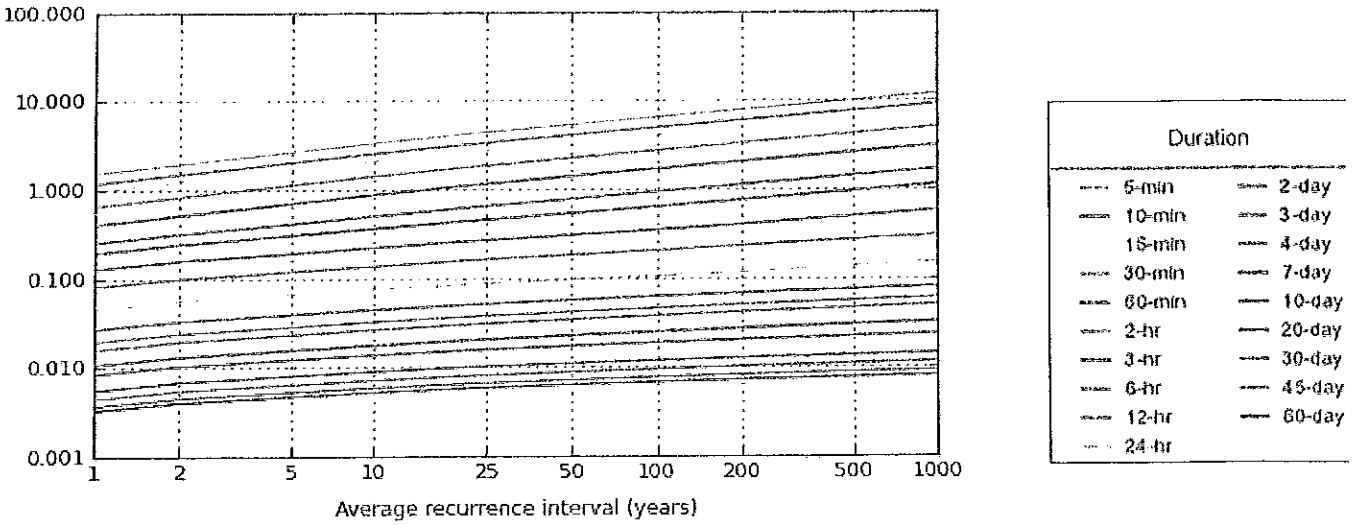
PF graphical





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Created (GMT): Fri Apr 22 19:51:10 2011

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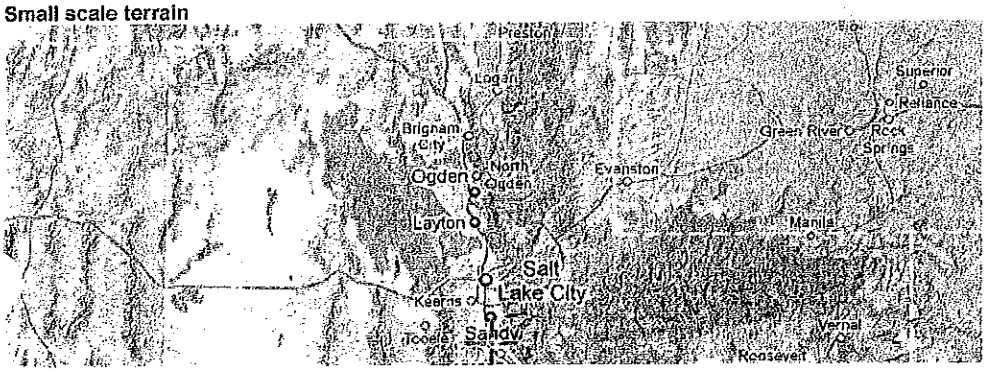
Maps & aerials

Small scale terrain



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10 YEAR HEC-1

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1**********   ****************************
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 *                                      *                                                    *
*
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                    *    U.S. ARMY CORPS OF ENGINEERS
*
 *              MAY   1991               *                                                    *    HYDROLOGIC ENGINEERING
CENTER    *
 *           VERSION 4.0.1E              *                                                    *          609 SECOND STREET
*
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616
*
 *  RUN DATE            TIME             *                                                    *           (916) 551-1748
*
 *                                      *                                                    *
*
 ****************************************
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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. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

HEC-1 INPUT

PAGE 1

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

   1          ID  HEC-1 Analysis using WMS
   2          ID  10 year devloped flow No detention
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9	KO	0	0	0.0	0	22		
0	RD	5282.9	0.05589	0.013		IRC	4.0	0.0
81	KK	7B						
82	KO	0	0	0.0	1	22		
83	BA	0.1029						
84	LS	0.0	78.43	0.0				
85	UD	0.1841						

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9	KO	0	0	0.0	0	22
0	BA	0.0947				
121	LS	0.0	90.26	0.0		
122	UD	0.1841				
123	KK	5B				
124	KO	0	0	0.0	1	22
125	BA	0.4743				
126	LS	0.0	81.39	0.0		
127	UD	0.1841				

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```
SE  4690.04690.2634690.5264690.7894690.0524691.3154691.5784691.8424692.1054692.368
SE  4692.64692.8944693.1574693.4214693.6844693.9474694.2104694.4734694.736  4695.0
* 10C Discharge
SQ     0.01.1507444.91591411.2267919.7982230.2410842.0926254.8266867.8529080.50505
SQ  92.010101.4127107.3366106.587664.4276168.6707172.6664876.4537080.0619783.51449
* 10C Elevation
SE  4690.04690.2634690.5264690.7894691.0524691.3154691.5784691.8424692.1054692.368
SE  4692.64692.8944693.1574693.4214693.6844693.9474694.2104694.4734694.736  4695.0
```

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SCHEMATIC DIAGRAM OF STREAM NETWORK

(V) ROUTING (--->) DIVERSION OR PUMP FLOW

(.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW

```
INPUT
 LINE
  NO.

  33        11B
              .
              .
  38          .         10B
              .           .
              .           .
  43        13C............
              V
              V
  46        13R
              .
              .
  57          .         20B
              .           V
              .           V
  62          .          3R
              .           .
              .           .
  65          .           .         21B
              .           .           .
              .           .           .
  70          .           .           .         19B
              .           .           .           .
              .           .           .           .
  75          .           .          2C............
              .           .           V
              .           .           V
  78          .           .          2R
              .           .           .
              .           .           .
  81          .           .           .          7B
              .           .           .           .
              .           .           .           .
  86          .           .           .           .         9B
              .           .           .           .           .
              .           .           .           .           .
  91          .           .           .           .           .         8B
              .           .           .           .           .           .
              .           .           .           .           .           .
  96          .         12C.........................................
              .           V
              .           V
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 *   FLOOD    ROGRAPH PACKAGE  (HEC-1)   *                                  *    U.S. ARMY CORPS    ENGINEERS
*
 *              MAY   1991              *                                  *    HYDROLOGIC ENGINEERING
CENTER    *
 *            VERSION 4.0.1E             *                                  *         609 SECOND STREET
*
 *                                       *                                  *       DAVIS, CALIFORNIA 95616
*
 *  RUN DATE            TIME             *                                  *          (916) 551-1748
*
 *                                       *                                  *
*
 ****************************************
*************************************
```

HEC-1 Analysis using WMS
10 year devloped flow No detention

```
    5 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      7MAY 9  STARTING DATE
                        ITIME        0000  STARTING TIME
                           NQ,        130  NUMBER OF HYDROGRAPH ORDINATES
                       NDDATE      7MAY 9  ENDING DATE
                       NDTIME        2130  ENDING TIME
                       ICENT           19  CENTURY MARK

                  COMPUTATION INTERVAL    0.17 HOURS
                       TOTAL TIME BASE   21.50 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
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```
                    *
 38 KK          10B *
            *        *
            **************

 39 KO        OUTPUT CONTROL VARIABLES
                 IPRNT          5  PRINT CONTROL
                 IPLOT          0  PLOT CONTROL
                 QSCAL         0.  HYDROGRAPH PLOT SCALE
                 IPNCH          1  PUNCH COMPUTED HYDROGRAPH
                  IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                 ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                 ISAV2        130  LAST ORDINATE PUNCHED OR SAVED
                TIMINT      0.167  TIME INTERVAL IN HOURS


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


            **************
            *            *
 43 KK      *       13C  *        CNAME     13R
            *            *
            **************

 44 KO        OUTPUT CONTROL VARIABLES
                 IPRNT          5  PRINT CONTROL
                 IPLOT          0  PLOT CONTROL
                 QSCAL         0.  HYDROGRAPH PLOT SCALE
                 IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                  IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                 ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                 ISAV2        130  LAST ORDINATE PUNCHED OR SAVED
                TIMINT      0.167  TIME INTERVAL IN HOURS


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


            **************
            *            *
 46 KK      *       13R  *        CNAME     13C
            *            *
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```
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2        130  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.167  TIME INTERVAL IN HOURS


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

          **************
          *            *
   65 KK  *       21B  *
          *            *
          **************

   66 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          1  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2        130  LAST ORDINATE PUNCHED OR SAVED
               TIMINT      0.167  TIME INTERVAL IN HOURS


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

          **************
          *            *
   70 KK  *       19B  *
          *            *
          **************

   71 KO          OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
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                ISAV2          130  LAST ORDINATE PUNCH   OR SAVED
               TIMINT        0.167  TIME INTERVAL IN HC


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

            **************
            *            *
   81 KK    *        7B  *
            *            *
            **************

   82 KO          OUTPUT CONTROL VARIABLES
                     IPRNT            5  PRINT CONTROL
                     IPLOT            0  PLOT CONTROL
                     QSCAL           0.  HYDROGRAPH PLOT SCALE
                     IPNCH            1  PUNCH COMPUTED HYDROGRAPH
                      IOUT           22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1            1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2          130  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT        0.167  TIME INTERVAL IN HOURS


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

            **************
            *            *
   86 KK    *        9B  *
            *            *
            **************

   87 KO          OUTPUT CONTROL VARIABLES
                     IPRNT            5  PRINT CONTROL
                     IPLOT            0  PLOT CONTROL
                     QSCAL           0.  HYDROGRAPH PLOT SCALE
                     IPNCH            1  PUNCH COMPUTED HYDROGRAPH
                      IOUT           22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1            1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2          130  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT        0.167  TIME INTERVAL IN HOURS
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CITY

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

              *************
              *           *
  99 KK       *     12R   *        CNAME     12C
              *           *
              *************

 100 KO           OUTPUT CONTROL VARIABLES
                        IPRNT             5  PRINT CONTROL
                        IPLOT             0  PLOT CONTROL
                        QSCAL            0.  HYDROGRAPH PLOT SCALE
                        IPNCH             0  PUNCH COMPUTED HYDROGRAPH
                         IOUT            22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1             1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2           130  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT         0.167  TIME INTERVAL IN HOURS

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

              *************
              *           *
 110 KK       *     29B   *
              *           *
              *************

 111 KO           OUTPUT CONTROL VARIABLES
                        IPRNT             5  PRINT CONTROL
                        IPLOT             0  PLOT CONTROL
                        QSCAL            0.  HYDROGRAPH PLOT SCALE
                        IPNCH             0  PUNCH COMPUTED HYDROGRAPH
                         IOUT            22  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1             1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2           130  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT         0.167  TIME INTERVAL IN HOURS

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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123 KK              5B  *
                        *
          **************

124 KO       OUTPUT CONTROL VARIABLES
                   IPRNT          5  PRINT CONTROL
                   IPLOT          0  PLOT CONTROL
                   QSCAL         0.  HYDROGRAPH PLOT SCALE
                   IPNCH          1  PUNCH COMPUTED HYDROGRAPH
                    IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                   ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                   ISAV2        130  LAST ORDINATE PUNCHED OR SAVED
                  TIMINT      0.167  TIME INTERVAL IN HOURS


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

          *************
          *           *
128 KK    *     11C   *        CNAME     11R
          *           *
          *************

129 KO       OUTPUT CONTROL VARIABLES
                   IPRNT          5  PRINT CONTROL
                   IPLOT          0  PLOT CONTROL
                   QSCAL         0.  HYDROGRAPH PLOT SCALE
                   IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                    IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                   ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                   ISAV2        130  LAST ORDINATE PUNCHED OR SAVED
                  TIMINT      0.167  TIME INTERVAL IN HOURS


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

          *************
          *           *
131 KK    *     11R   *        CNAME     11C
          *           *
          *************
```

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```
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCAL
                    IPNCH          1  PUNCH COMPUTED HYDROGRAPH
                     IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        130  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT      0.167  TIME INTERVAL IN HOURS


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

            **************
            *            *
  152 KK    *       10C  *        CNAME     10R
            *            *
            **************

  153 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        130  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT      0.167  TIME INTERVAL IN HOURS


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

            **************
            *            *
  155 KK    *       10R  *        CNAME     10C
            *            *
            **************

  156 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
```


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```
                TIMINT       0.167  TIME INTERVAL IN HC

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

            **************
            *            *
  176 KK    *        9C  *        CNAME      9R
            *            *
            **************

  177 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2         130  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.167  TIME INTERVAL IN HOURS

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

            **************
            *            *
  179 KK    *        9R  *        CNAME      9C
            *            *
            **************

  180 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           5  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                       IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                        IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2         130  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       0.167  TIME INTERVAL IN HOURS
```

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5 MBINED AT									
+	12C	276.	12.17	[illegible]	19.	19.	2.91		
ROUTED TO									
+	12R	147.	12.83	52.	17.	17.	2.91		
+								4752.19	12.83
HYDROGRAPH AT									
+	29B	45.	12.17	7.	2.	2.	0.13		
ROUTED TO									
+	4R	45.	12.17	7.	2.	2.	0.13		
HYDROGRAPH AT									
+	30B	52.	12.00	8.	3.	3.	0.09		
HYDROGRAPH AT									
+	5B	129.	12.17	22.	7.	7.	0.47		
3 COMBINED AT									
+	11C	224.	12.17	37.	12.	12.	0.70		
ROUTED TO									
+	11R	45.	12.83	28.	10.	10.	0.70		
+								4791.63	12.83
HYDROGRAPH AT									
+	4B	66.	12.00	10.	3.	3.	0.09		
HYDROGRAPH AT									
+	2B	42.	12.00	6.	2.	2.	0.07		
2 COMBINED AT									
+	10C	108.	12.00	16.	5.	5.	0.16		
ROUTED TO									
+	10R	28.	12.50	14.	5.	5.	0.16		
+								4691.27	12.50
HYDROGRAPH AT									
+	1B	49.	12.00	8.	2.	2.	0.09		
HYDROGRAPH AT									
+	6B	56.	12.17	9.	3.	3.	0.17		
2 COMBINED AT									
+	9C	103.	12.17	17.	5.	5.	0.26		
ROUTED TO									

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50 YEAR HEC-1

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```
*                                                                  *
*  FLOOD    DROGRAPH PACKAGE  (HEC-1)  *                          U.S. ARMY CORPS OF ENGINEERS   *
*           / 1991                *                          *  HYDROLOG.. ENGINEERING CENTER  *
*        VERSION 4.0.1E           *                          *        609 SECOND STREET        *
*                                                                  *  DAVIS, CALIFORNIA 95616      *
*  RUN DATE                TIME                                    *        (916) 551-1748         *
*                                                                  *
*****************************************                          *****************************************
```

```
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. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY.
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

HEC-1 INPUT PAGE 1

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

  1       ID  HEC-1 Analysis using WMS
  2       ID  50 year devloped flow No detention
  3       ID
          *DIAGRAM
*** LIST ***
  4       IT     10 07MAY09      0    130
  5       IO      5
  6       IN      6 07MAY09      0
  7       JD    2.3    10.0
          * typeII-24hour
  8       PC    0.0  0.001  0.002 0.0031 0.0041 0.0051 0.0062 0.0073 0.0083 0.0094
  9       PC 0.0105 0.0116 0.0127 0.0138  0.015 0.0161 0.0173 0.0185 0.0196 0.0208
```

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

46      KK    13R   CNAME    13C
47      KO      0      0    0.0      0     22
48      RS      1   FLOW    0.0    0.0
       * 13C Volume
49      SV    0.00.9742581.9639382.969202 3.990215.0271236.0801017.1493058.2348969.337034
50      SV  10.45511.5915912.7443313.9142715.1015516.3063517.5288218.7691220.0274121.30386
       * 13C Elevation
51      SE  4800.04800.5264801.0524801.5784802.1054802.6314803.1574803.6844804.2104804.736
52      SE  4805.24805.7894806.3154806.8424807.3684807.8944808.4214808.9474809.473  4810.0
       * 13C Discharge
53      SQ    0.03.42952912.3279421.8209515.9029219.3218222.2207724.7829127.1039229.24128
54      SQ  31.23233.1045734.8761036.5618938.1733239.7194241.2075542.6437844.0331945.38008
       * 13C Elevation
55      SE  4800.04800.5264801.0524801.5784802.1054802.6314803.1574803.6844804.2104804.736
56      SE  4805.24805.7894806.3154806.8424807.3684807.8944808.4214808.9474809.473  4810.0

57      KK    20B
58      KO      0      0    0.0      1     22
59      BA  0.5104
60      LS    0.0  74.34    0.0
61      UD  0.1841

62      KK     3R   CNAME     3C
63      KO      0      0    0.0      0     22
64      RD  2921.6 0.04564   0.013          CIRC    4.0    0.0

65      KK    21B
66      KO      0      0    0.0      1     22
67      BA  1.3783
68      LS    0.0  65.32    0.0
69      UD  0.1841

70      KK    19B
71      KO      0      0    0.0      1     22
72      BA   0.384
73      LS    0.0  71.22    0.0
74      UD  0.1841

75      KK     2C   CNAME     2R
76      KO      0      0    0.0      0     22
77      HC      2

78      KK     2R   CNAME     2C
79      KO      0      0    0.0      0     22
```

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

 86       KK    9B
 87       KO     0     0    0.0     1    22
 88       BA 0.2002
 89       LS   0.0  83.04    0.0
 90       UD 0.1841

 91       KK    8B
 92       KO     0     0    0.0     1    22
 93       BA 0.3337
 94       LS   0.0  81.56    0.0
 95       UD 0.1841

 96       KK   12C  CNAME   12R
 97       KO     0     0    0.0     0    22
 98       HC     5

 99       KK   12R  CNAME   12C
100       KO     0     0    0.0     0    22
101       RS     3  STOR    0.0    0.0
        * 12C Volume
102       SV   0.02.427973  4.8797.3532429.85085912.3720114.9168617.4855620.0782922.69519
103       SV 25.33628.0021730.6925733.4077936.1480038.9133441.7039944.5201047.3618450.22936
        * 12C Elevation
104       SE 4750.04750.5264751.0524751.5784752.1054752.6314753.1574753.6844754.2104754.736
105       SE 4755.24755.7894756.3154756.8424757.3684757.8944758.4214758.9474759.473  4760.0
        * 12C Discharge
106       SQ   0.08.56400335.7773379.62780136.2410200.7145267.2415328.9062376.8272395.9445
107       SQ 157.15171.4696184.6784197.0036208.6018219.5883230.0506240.0575249.6635258.9135
        * 12C Elevation
108       SE 4750.04750.5264751.0524751.5784752.1054752.6314753.1574753.6844754.2104754.736
109       SE 4755.24755.7894756.3154756.8424757.3684757.8944758.4214758.9474759.473  4760.0

110       KK   29B
111       KO     0     0    0.0     0    22
112       BA 0.1332
113       LS   0.0  83.94    0.0
114       UD 0.1841

115       KK    4R  CNAME    4C
116       KO     0     0    0.0     0    22
117       RD 1630.0 0.01204  0.013        CIRC    4.0    0.0

118       KK   30B
119       KO     0     0    0.0     0    22
```


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

128        KK    11C   CNAME    11R
129        KO      0      0    0.0      0     22
130        HC      3

131        KK    11R   CNAME    11C
132        KO      0      0    0.0      0     22
133        RS      1   FLOW    0.0    0.0
         * 11C Volume
134        SV    0.01.513495 3.033374.5596446.0923387.6314719.17706310.7291312.28770 13.8528
135        SV  15.42417.0026218.5873920.1787621.7767623.3813924.9926826.6106628.2353329.86673
         * 11C Elevation
136        SE  4790.04790.2634790.5264790.7894791.0524791.3154791.5784791.8424792.1054792.368
137        SE  4792.64792.8944793.1574793.4214793.6844793.9474794.2104794.4734794.736  4795.0
         * 11C Discharge
138        SQ    0.01.1507444.91591411.2267919.7982230.2410842.0926254.8266867.8529080.50505
139        SQ  92.010101.4127107.3366106.587664.4276168.6707172.6664876.4537080.0619783.51449
         * 11C Elevation
140        SE  4790.04790.2634790.5264790.7894791.0524791.3154791.5784791.8424792.1054792.368
141        SE  4792.64792.8944793.1574793.4214793.6844793.9474794.2104794.4734794.736  4795.0

142        KK     4B
143        KO      0      0    0.0      1     22
144        BA  0.0923
145        LS    0.0  94.09    0.0
146        UD  0.1841

147        KK     2B
148        KO      0      0    0.0      1     22
149        BA  0.0677
150        LS    0.0  91.74    0.0
151        UD  0.1841

152        KK    10C   CNAME    10R
153        KO      0      0    0.0      0     22
154        HC      2

155        KK    10R   CNAME    10C
156        KO      0      0    0.0      0     22
157        RS      1   FLOW    0.0    0.0
         * 10C Volume
158        SV    0.00.9691471.9434012.9227833.907313 4.897015.8918956.8919887.8973098.907878
159        SV  9.923710.9448411.9712713.0030314.0401415.0826216.1304917.1837618.2424719.30662
         * 10C Elevation
160        SE  4690.04690.2634690.5264690.7894691.0524691.3154691.5784691.8424692.1054692.368
```

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

166     KK    1B
167     KO     0     0    0.0     1    22
168     BA  0.0939
169     LS    0.0  89.43    0.0
170     UD  0.1841

171     KK    6B
172     KO     0     0    0.0     1    22
173     BA  0.1693
174     LS    0.0  83.65    0.0
175     UD  0.1841

176     KK    9C  CNAME    9R
177     KO     0     0    0.0     0    22
178     HC     2

179     KK    9R  CNAME    9C
180     KO     0     0    0.0     0    22
181     RS     1   FLOW    0.0    0.0
      * 9C Volume
182     SV    0.00.9691471.9434012.9227833.907313 4.897015.8918956.8919887.8973098.907878
183     SV  9.923710.9448411.9712713.0030314.0401415.0826216.1304917.1837618.2424719.30662
      * 9C Elevation
184     SE  4700.04700.2634700.5264700.7894701.0524701.3154701.5784701.8424702.1054702.368
185     SE  4702.64702.8944703.1574703.4214703.6844703.9474704.2104704.4734704.736  4705.0
      * 9C Discharge
186     SQ    0.01.0567844.47356510.1113917.6205926.5449136.3468846.4104756.0250964.33547
187     SQ  70.18571.2981043.8232947.1732950.3006753.2446856.0342258.6913361.2332563.67377
      * 9C Elevation
188     SE  4700.04700.2634700.5264700.7894701.0524701.3154701.5784701.8424702.1054702.368
189     SE  4702.64702.8944703.1574703.4214703.6844703.9474704.2104704.4734704.736  4705.0
190     ZZ
```

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```
110                 29B
                    V
                    V
115                 4R
                    .
                    .
118                 .     30B
                    .     .
                    .     .
123                 .     .     5B
                    .     .     .
                    .     .     .
128                 11C.......................
                    V
                    V
131                 11R
                    .
                    .
142                 .     4B
                    .     .
                    .     .
147                 .     .     2B
                    .     .     .
                    .     .     .
152                 .     10C............
                    .     V
                    .     V
155                 .     10R
                    .     .
                    .     .
166                 .     .     1B
                    .     .     .
                    .     .     .
171                 .     .     .     6B
                    .     .     .     .
                    .     .     .     .
176                 .     .     9C............
                    .     .     V
                    .     .     V
179                 .     .     9R
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*****************************************                    ****************************************
*                                         *                    *                                      *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *  U.S. ARMY CORPS OF ENGINEERS    *
*          MAY   1991          *                    *  HYDROLOGIC ENGINEERING CENTER   *
*        VERSION 4.0.1E        *                    *        609 SECOND STREET         *
*                                         *                    *  DAVIS, CALIFORNIA 95616      *
```

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0.14	0.19	0.03	0.02	0.02	0.01	0.01	0.01	[illegible]	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	[illegible]	0.01
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	[illegible]	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

*** ***

```
        **************
        *            *
 33 KK  *    11B     *
        *            *
        **************
```

```
 34 KO      OUTPUT CONTROL VARIABLES
             IPRNT        5  PRINT CONTROL
             IPLOT        0  PLOT CONTROL
             QSCAL       0.  HYDROGRAPH PLOT SCALE
             IPNCH        1  PUNCH COMPUTED HYDROGRAPH
              IOUT       22  SAVE HYDROGRAPH ON THIS UNIT
             ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
             ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
            TIMINT    0.167  TIME INTERVAL IN HOURS
```

*** ***

```
        **************
        *            *
 38 KK  *    10B     *
        *            *
        **************
```

```
 39 KO      OUTPUT CONTROL VARIABLES
             IPRNT        5  PRINT CONTROL
             IPLOT        0  PLOT CONTROL
             QSCAL       0.  HYDROGRAPH PLOT SCALE
             IPNCH        1  PUNCH COMPUTED HYDROGRAPH
              IOUT       22  SAVE HYDROGRAPH ON THIS UNIT
             ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
             ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
            TIMINT    0.167  TIME INTERVAL IN HOURS
```

RECEIVED
NOV 23 2011

```
      *        *
57 KK        20B  *
      *        *
      **************

58 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
              IPNCH        1  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     0.167  TIME INTERVAL IN HOURS


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


      **************
      *        *
62 KK    *     3R  *      CNAME     3C
      *        *
      **************

63 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
              IPNCH        0  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     0.167  TIME INTERVAL IN HOURS


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


      **************
      *        *
65 KK    *     21B  *
      *        *
      **************
```

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```
        ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
        ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
        TIMINT     0.167  TIME INTERVAL IN HOURS


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


        **************
        *            *
78 KK   *     2R  *      CNAME     2C
        *            *
        **************

79 KO       OUTPUT CONTROL VARIABLES
        IPRNT        5  PRINT CONTROL
        IPLOT        0  PLOT CONTROL
        QSCAL        0.  HYDROGRAPH PLOT SCALE
        IPNCH        0  PUNCH COMPUTED HYDROGRAPH
        IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
        ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
        ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
        TIMINT     0.167  TIME INTERVAL IN HOURS


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


        **************
        *            *
81 KK   *     7B  *
        *            *
        **************

82 KO       OUTPUT CONTROL VARIABLES
        IPRNT        5  PRINT CONTROL
        IPLOT        0  PLOT CONTROL
        QSCAL        0.  HYDROGRAPH PLOT SCALE
        IPNCH        1  PUNCH COMPUTED HYDROGRAPH
        IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
        ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
        ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
        TIMINT     0.167  TIME INTERVAL IN HOURS
```

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```
96 KK      12C *      CNAME    12R
      *        *
      **      *******

97 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
              IPNCH        0  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     0.167  TIME INTERVAL IN HOURS


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


      **************
      *            *
99 KK    *     12R *      CNAME    12C
      *            *
      **************

100 KO       OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
              IPNCH        0  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     0.167  TIME INTERVAL IN HOURS

WARNING --- ROUTED OUTFLOW (   381.) IS GREATER THAN MAXIMUM OUTFLOW (   259.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   276.) IS GREATER THAN MAXIMUM OUTFLOW (   259.) IN STORAGE-OUTFLOW TABLE


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


      **************
      *            *
110 KK    *     29B *
      *            *
```

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```
          IPNCH      0  PUNCH COMPUTED HYDROGRAPH
           IOUT     22  SAVE HYDROGRAPH ON THIS UNIT
          ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
          ISAV2    130  LAST ORDINATE PUNCHED OR SAVED
         TIMINT  0.167  TIME INTERVAL IN HOURS


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


      **************
      *            *
123 KK   *     5B  *
      *            *
      **************

124 KO      OUTPUT CONTROL VARIABLES
          IPRNT      5  PRINT CONTROL
          IPLOT      0  PLOT CONTROL
          QSCAL     0.  HYDROGRAPH PLOT SCALE
          IPNCH      1  PUNCH COMPUTED HYDROGRAPH
           IOUT     22  SAVE HYDROGRAPH ON THIS UNIT
          ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
          ISAV2    130  LAST ORDINATE PUNCHED OR SAVED
         TIMINT  0.167  TIME INTERVAL IN HOURS


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


      **************
      *            *
128 KK   *     11C *      CNAME    11R
      *            *
      **************

129 KO      OUTPUT CONTROL VARIABLES
          IPRNT      5  PRINT CONTROL
          IPLOT      0  PLOT CONTROL
          QSCAL     0.  HYDROGRAPH PLOT SCALE
          IPNCH      0  PUNCH COMPUTED HYDROGRAPH
           IOUT     22  SAVE HYDROGRAPH ON THIS UNIT
          ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
          ISAV2    130  LAST ORDINATE PUNCHED OR SAVED
         TIMINT  0.167  TIME INTERVAL IN HOURS
```

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```
TIMINT      0.167  TIME INTERVAL IN HOURS


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


        **************
        *            *
147 KK  *     2B     *
        *            *
        **************

148 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
              IPNCH        1  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     0.167  TIME INTERVAL IN HOURS


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


        **************
        *            *
152 KK  *     10C    *      CNAME    10R
        *            *
        **************

153 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
              IPNCH        0  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     0.167  TIME INTERVAL IN HOURS


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

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```
172 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
              IPNCH        1  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
              TIMINT   0.167  TIME INTERVAL IN HOURS


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


        **************
        *            *
176 KK  *     9C     *     CNAME     9R
        *            *
        **************

177 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
              IPNCH        0  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
              TIMINT   0.167  TIME INTERVAL IN HOURS


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


        **************
        *            *
179 KK  *     9R     *     CNAME     9C
        *            *
        **************

180 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
```

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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	MAX STAGE	TIME OF
+	HYDROGRAPH AT 11B	80.	12.17	13.	4.	4.	0.20				
+	HYDROGRAPH AT 10B	28.	12.83	10.	3.	3.	0.17				
+	2 COMBINED AT 13C	90.	12.17	23.	7.	7.	0.37				
+	ROUTED TO 13R	21.	17.50	18.	7.	7.	0.37				
+							4802.75	13.83			
+	HYDROGRAPH AT 20B	140.	12.17	24.	8.	8.	0.51				
+	ROUTED TO 3R	136.	12.17	24.	8.	8.	0.51				
+	HYDROGRAPH AT 21B	120.	12.17	28.	10.	10.	1.38				
+	HYDROGRAPH AT 19B	77.	12.17	14.	5.	5.	0.38				
+	2 COMBINED AT 2C	197.	12.17	42.	14.	14.	1.76				
+	ROUTED TO 2R	183.	12.17	42.	14.	14.	1.76				
+	HYDROGRAPH AT 7B	39.	12.17	6.	2.	2.	0.10				
+	HYDROGRAPH AT 9B	104.	12.17	17.	5.	5.	0.20				
+	HYDROGRAPH AT 8B	158.	12.17	26.	8.	8.	0.33				
	5 COMBINED AT										

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SUMMARY OF KINEMATIC WAVE - MUSKINGUM CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
INTERPOLATED TO
COMPUTATION INTERVAL

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR STORM = 1	STORM AREA (SQ MI) =		10.00						
3R	MANE	1.76	137.60	730.82	0.51	10.00	136.41	730.00	0.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1383E+02 EXCESS=0.0000E+00 OUTFLOW=0.1380E+02 BASIN STORAGE=0.2619E-01 PERCENT ERROR= 0.0

FOR STORM = 1	STORM AREA (SQ MI) =		10.00						
2R	MANE	1.50	193.17	732.00	0.27	10.00	182.83	730.00	0.27

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2520E+02 EXCESS=0.0000E+00 OUTFLOW=0.2512E+02 BASIN STORAGE=0.8743E-01 PERCENT ERROR= 0.0

FOR STORM = 1	STORM AREA (SQ MI) =		10.00						
4R	MANE	1.90	74.14	722.86	0.95	10.00	73.09	730.00	0.95

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6773E+01 EXCESS=0.0000E+00 OUTFLOW=0.6763E+01 BASIN STORAGE=0.1117E-01 PERCENT ERROR= 0.0

*** NORMAL END OF HEC-1 ***

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100 YEAR HEC-1

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```
1*****************  ********************                  ******************  ****************
*                  *                                    *                  *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                  *  U.S. ARMY CORPS OF ENGINEERS   *
*        MAY   1991          *                          *  HYDROLOGIC ENGINEERING CENTER  *
*       VERSION 4.0.1E       *                          *       609 SECOND STREET      *
*                  *                                    *  DAVIS, CALIFORNIA 95616     *
*  RUN DATE                TIME                *                  *       (916) 551-1748        *
*                  *                                    *                  *
*****************************************                  ******************************************
```

```
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. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

HEC-1 INPUT PAGE 1

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

  1       ID  HEC-1 Analysis using WMS
  2       ID  100 year devloped flow No detention
  3       ID
          *DIAGRAM
*** LIST ***
  4       IT     10 07MAY09      0    130
  5       IO      5
  6       IN      6 07MAY09      0
  7       JD   2.52    10.0
```

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

46        KK    13R   CNAME    13C
47        KO      0      0    0.0      0     22
48        RS      1   FLOW    0.0    0.0
        * 13C Volume
49        SV    0.00.9742581.9639382.969202 3.990215.0271236.0801017.1493058.2348969.337034
50        SV  10.45511.5915912.7443313.9142715.1015516.3063517.5288218.7691220.0274121.30386
        * 13C Elevation
51        SE  4800.04800.5264801.0524801.5784802.1054802.6314803.1574803.6844804.2104804.736
52        SE  4805.24805.7894806.3154806.8424807.3684807.8944808.4214808.9474809.473  4810.0
        * 13C Discharge
53        SQ    0.03.42952912.3279421.8209515.9029219.3218222.2207724.7829127.1039229.24128
54        SQ  31.23233.1045734.8761036.5618938.1733239.7194241.2075542.6437844.0331945.38008
        * 13C Elevation
55        SE  4800.04800.5264801.0524801.5784802.1054802.6314803.1574803.6844804.2104804.736
56        SE  4805.24805.7894806.3154806.8424807.3684807.8944808.4214808.9474809.473  4810.0

57        KK    20B
58        KO      0      0    0.0      1     22
59        BA  0.5104
60        LS    0.0  74.34    0.0
61        UD  0.1841

62        KK     3R   CNAME     3C
63        KO      0      0    0.0      0     22
64        RD  2921.6 0.04564   0.013          CIRC    4.0    0.0

65        KK    21B
66        KO      0      0    0.0      1     22
67        BA  1.3783
68        LS    0.0  65.32    0.0
69        UD  0.1841

70        KK    19B
71        KO      0      0    0.0      1     22
72        BA   0.384
73        LS    0.0  71.22    0.0
74        UD  0.1841

75        KK     2C   CNAME     2R
76        KO      0      0    0.0      0     22
77        HC      2
```


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

 86       KK    9B
 87       KO     0     0    0.0     1    22
 88       BA  0.2002
 89       LS    0.0  83.04    0.0
 90       UD  0.1841

 91       KK    8B
 92       KO     0     0    0.0     1    22
 93       BA  0.3337
 94       LS    0.0  81.56    0.0
 95       UD  0.1841

 96       KK   12C  CNAME   12R
 97       KO     0     0    0.0     0    22
 98       HC     5

 99       KK   12R  CNAME   12C
100       KO     0     0    0.0     0    22
101       RS     3   STOR    0.0   0.0
        * 12C Volume
102       SV    0.02.427973   4.8797.3532429.85085912.3720114.9168617.4855620.0782922.69519
103       SV  25.33628.0021730.6925733.4077936.1480038.9133441.7039944.5201047.3618450.22936
        * 12C Elevation
104       SE  4750.04750.5264751.0524751.5784752.1054752.6314753.1574753.6844754.2104754.736
105       SE  4755.24755.7894756.3154756.8424757.3684757.8944758.4214758.9474759.473  4760.0
        * 12C Discharge
106       SQ    0.08.56400335.7773379.62780136.2410200.7145267.2415328.9062376.8272395.9445
107       SQ  157.15171.4696184.6784197.0036208.6018219.5883230.0506240.0575249.6635258.9135
        * 12C Elevation
108       SE  4750.04750.5264751.0524751.5784752.1054752.6314753.1574753.6844754.2104754.736
109       SE  4755.24755.7894756.3154756.8424757.3684757.8944758.4214758.9474759.473  4760.0

110       KK   29B
111       KO     0     0    0.0     0    22
112       BA  0.1332
113       LS    0.0  83.94    0.0
114       UD  0.1841

115       KK    4R  CNAME    4C
116       KO     0     0    0.0     0    22
117       RD  1630.0 0.01204  0.013        CIRC    4.0    0.0
```


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

128         KK    11C   CNAME    11R
129         KO      0      0    0.0      0     22
130         HC      3

131         KK    11R   CNAME    11C
132         KO      0      0    0.0      0     22
133         RS      1   FLOW    0.0    0.0
          * 11C Volume
134         SV    0.01.513495 3.033374.5596446.0923387.6314719.17706310.7291312.28770 13.8528
135         SV  15.42417.0026218.5873920.1787621.7767623.3813924.9926826.6106628.2353329.86673
          * 11C Elevation
136         SE  4790.04790.2634790.5264790.7894791.0524791.3154791.5784791.8424792.1054792.368
137         SE  4792.64792.8944793.1574793.4214793.6844793.9474794.2104794.4734794.736  4795.0
          * 11C Discharge
138         SQ    0.01.1507444.91591411.2267919.7982230.2410842.0926254.8266867.8529080.50505
139         SQ  92.010101.4127107.3366106.587664.4276168.6707172.6664876.4537080.0619783.51449
          * 11C Elevation
140         SE  4790.04790.2634790.5264790.7894791.0524791.3154791.5784791.8424792.1054792.368
141         SE  4792.64792.8944793.1574793.4214793.6844793.9474794.2104794.4734794.736  4795.0

142         KK     4B
143         KO      0      0    0.0      1     22
144         BA  0.0923
145         LS    0.0  94.09    0.0
146         UD  0.1841

147         KK     2B
148         KO      0      0    0.0      1     22
149         BA  0.0677
150         LS    0.0  91.74    0.0
151         UD  0.1841

152         KK    10C   CNAME    10R
153         KO      0      0    0.0      0     22
154         HC      2

155         KK    10R   CNAME    10C
156         KO      0      0    0.0      0     22
157         RS      1   FLOW    0.0    0.0
          * 10C Volume
158         SV    0.00.9691471.9434012.9227833.907313 4.897015.8918956.8919887.8973098.907878
```


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

166         KK     1B
167         KO      0      0    0.0      1     22
168         BA  0.0939
169         LS    0.0   89.43    0.0
170         UD  0.1841

171         KK     6B
172         KO      0      0    0.0      1     22
173         BA  0.1693
174         LS    0.0   83.65    0.0
175         UD  0.1841

176         KK     9C   CNAME     9R
177         KO      0      0    0.0      0     22
178         HC      2

179         KK     9R   CNAME     9C
180         KO      0      0    0.0      0     22
181         RS      1   FLOW    0.0    0.0
          * 9C Volume
182         SV    0.00.9691471.9434012.9227833.907313 4.897015.8918956.8919887.8973098.907878
183         SV  9.923710.9448411.9712713.0030314.0401415.0826216.1304917.1837618.2424719.30662
          * 9C Elevation
184         SE  4700.04700.2634700.5264700.7894701.0524701.3154701.5784701.8424702.1054702.368
185         SE  4702.64702.8944703.1574703.4214703.6844703.9474704.2104704.4734704.736  4705.0
          * 9C Discharge
186         SQ    0.01.0567844.47356510.1113917.6205926.5449136.3468846.4104756.0250964.33547
187         SQ  70.18571.2981043.8232947.1732950.3006753.2446856.0342258.6913361.2332563.67377
          * 9C Elevation
188         SE  4700.04700.2634700.5264700.7894701.0524701.3154701.5784701.8424702.1054702.368
189         SE  4702.64702.8944703.1574703.4214703.6844703.9474704.2104704.4734704.736  4705.0
190         ZZ
```


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```
        .     √
        .     √
 99     .     12R
        .     .
        .     .
110     .     .     29B
        .     .     V
        .     .     V
115     .     .     4R
        .     .     .
        .     .     .
118     .     .     .     30B
        .     .     .     .
        .     .     .     .
123     .     .     .     .     5B
        .     .     .     .     .
        .     .     .     .     .
128     .     .     11C.......................
        .     .     V
        .     .     V
131     .     .     11R
        .     .     .
        .     .     .
142     .     .     .     4B
        .     .     .     .
        .     .     .     .
147     .     .     .     .     2B
        .     .     .     .     .
        .     .     .     .     .
152     .     .     .     10C............
        .     .     .     V
        .     .     .     V
155     .     .     .     10R
        .     .     .     .
        .     .     .     .
166     .     .     .     .     1B
        .     .     .     .     .
        .     .     .     .     .
171     .     .     .     .     .     6B
        .     .     .     .     .     .
        .     .     .     .     .     .
176     .     .     .     .     9C............
        .     .     .     .     V
        .     .     .     .     V
179     .     .     .     .     9R
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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8 PI CIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.06
0.14	0.19	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

*** ***

```
      **************
      *            *
33 KK   *    11B   *
      *            *
      **************
```

34 KO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	1	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	130	LAST ORDINATE PUNCHED OR SAVED
TIMINT	0.167	TIME INTERVAL IN HOURS

*** ***

```
      **************
      *            *
38 KK   *    10B   *
      *            *
```

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```
        NT        5  PRINT CONTROL
        OT        0  PLOT CONTROL
      QSCAL       0.  HYDROGRAPH PLOT SCALE
      IPNCH       0  PUNCH COMPUTED HYDROGRAPH
       IOUT      22  SAVE HYDROGRAPH ON THIS UNIT
      ISAV1       1  FIRST ORDINATE PUNCHED OR SAVED
      ISAV2     130  LAST ORDINATE PUNCHED OR SAVED
      TIMINT    0.167  TIME INTERVAL IN HOURS


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


      **************
      *            *
 57 KK   *     20B  *
      *            *
      **************

 58 KO      OUTPUT CONTROL VARIABLES
            IPRNT        5  PRINT CONTROL
            IPLOT        0  PLOT CONTROL
            QSCAL        0.  HYDROGRAPH PLOT SCALE
            IPNCH        1  PUNCH COMPUTED HYDROGRAPH
             IOUT       22  SAVE HYDROGRAPH ON THIS UNIT
            ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
            ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
            TIMINT    0.167  TIME INTERVAL IN HOURS


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


      **************
      *            *
 62 KK   *     3R  *      CNAME     3C
      *            *
      **************

 63 KO      OUTPUT CONTROL VARIABLES
            IPRNT        5  PRINT CONTROL
            IPLOT        0  PLOT CONTROL
            QSCAL        0.  HYDROGRAPH PLOT SCALE
```


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```
/2        130  LAST ORDINATE PUNCHED OR SAVED
NT       0.167  TIME INTERVAL IN HOURS
```

*** ***

```
        **************
        *            *
75 KK   *     2C *      CNAME     2R
        *            *
        **************

76 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
              IPNCH        0  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     0.167  TIME INTERVAL IN HOURS
```

*** ***

```
        **************
        *            *
78 KK   *     2R *      CNAME     2C
        *            *
        **************

79 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
              IPNCH        0  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     0.167  TIME INTERVAL IN HOURS
```

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*** ***

```
      **************
      *            *
91 KK *     8B     *
      *            *
      **************
```

92 KO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	1	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	130	LAST ORDINATE PUNCHED OR SAVED
TIMINT	0.167	TIME INTERVAL IN HOURS

*** ***

```
      **************
      *            *
96 KK *     12C    *     CNAME    12R
      *            *
      **************
```

97 KO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	0	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	130	LAST ORDINATE PUNCHED OR SAVED
TIMINT	0.167	TIME INTERVAL IN HOURS

*** ***

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```
WARNING --- JTED OUTFLOW (  281.) IS GREATER THAN MAXIMUM OUT    W (  259.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (  277.) IS GREATER THAN MAXIMUM OUTFLOW (  259.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (  266.) IS GREATER THAN MAXIMUM OUTFLOW (  259.) IN STORAGE-OUTFLOW TABLE

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

        **************
        *            *
110 KK  *    29B     *
        *            *
        **************

111 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL       0.  HYDROGRAPH PLOT SCALE
              IPNCH        0  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
             TIMINT    0.167  TIME INTERVAL IN HOURS


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

        **************
        *            *
115 KK  *     4R     *      CNAME     4C
        *            *
        **************

116 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL       0.  HYDROGRAPH PLOT SCALE
              IPNCH        0  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
```

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

      **************
      *            *
128 KK   *    11C *      CNAME    11R
      *            *
      **************

129 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL       0.  HYDROGRAPH PLOT SCALE
              IPNCH        0  PUNCH COMPUTED HYDROGRAPH
               IOUT       22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
             TIMINT    0.167  TIME INTERVAL IN HOURS


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

      **************
      *            *
131 KK   *    11R *      CNAME    11C
      *            *
      **************

132 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL       0.  HYDROGRAPH PLOT SCALE
              IPNCH        0  PUNCH COMPUTED HYDROGRAPH
               IOUT       22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
             TIMINT    0.167  TIME INTERVAL IN HOURS

WARNING --- ROUTED OUTFLOW (    97.) IS GREATER THAN MAXIMUM OUTFLOW (    84.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   104.) IS GREATER THAN MAXIMUM OUTFLOW (    84.) IN STORAGE-OUTFLOW TABLE
```

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```
148 KO        ITPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
              IPNCH        1  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     0.167  TIME INTERVAL IN HOURS


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


        **************
        *            *
152 KK    *     10C  *      CNAME     10R
        *            *
        **************

153 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
              IPLOT        0  PLOT CONTROL
              QSCAL        0.  HYDROGRAPH PLOT SCALE
              IPNCH        0  PUNCH COMPUTED HYDROGRAPH
              IOUT        22  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2      130  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     0.167  TIME INTERVAL IN HOURS


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


        **************
        *            *
155 KK    *     10R  *      CNAME     10C
        *            *
        **************

156 KO        OUTPUT CONTROL VARIABLES
              IPRNT        5  PRINT CONTROL
```

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```
        JT      22  SAVE HYDROGRAPH ON THIS UNIT
        V1       1  FIRST ORDINATE PUNCHED OR SAVED
        SAV2     130  LAST ORDINATE PUNCHED OR SAVED
        TIMINT   0.167  TIME INTERVAL IN HOURS
```

*** ***

```
        **************
        *          *
176 KK  *    9C  *     CNAME    9R
        *          *
        **************

177 KO      OUTPUT CONTROL VARIABLES
            IPRNT      5  PRINT CONTROL
            IPLOT      0  PLOT CONTROL
            QSCAL      0.  HYDROGRAPH PLOT SCALE
            IPNCH      0  PUNCH COMPUTED HYDROGRAPH
            IOUT      22  SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
            ISAV2     130  LAST ORDINATE PUNCHED OR SAVED
            TIMINT   0.167  TIME INTERVAL IN HOURS
```

*** ***

```
        **************
        *          *
179 KK  *    9R  *     CNAME    9C
        *          *
        **************

180 KO      OUTPUT CONTROL VARIABLES
            IPRNT      5  PRINT CONTROL
            IPLOT      0  PLOT CONTROL
            QSCAL      0.  HYDROGRAPH PLOT SCALE
            IPNCH      0  PUNCH COMPUTED HYDROGRAPH
            IOUT      22  SAVE HYDROGRAPH ON THIS UNIT
            ISAV1      1  FIRST ORDINATE PUNCHED OR SAVED
            ISAV2     130  LAST ORDINATE PUNCHED OR SAVED
```

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

	OPERATION	PEAK STATION	TIME OF PEAK FLOW	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN STAGE	MAXIMUM MAX STAGE	TIME OF
+							AREA		
	HYDROGRAPH AT								
+	11B	97.	12.17	16.	5.	5.	0.20		
	HYDROGRAPH AT								
+	10B	35.	12.67	12.	4.	4.	0.17		
	2 COMBINED AT								
+	13C	111.	12.17	28.	9.	9.	0.37		
	ROUTED TO								
+	13R	24.	13.83	20.	8.	8.	0.37		
+							4803.47	13.83	
	HYDROGRAPH AT								
+	20B	177.	12.17	30.	10.	10.	0.51		
	ROUTED TO								
+	3R	175.	12.17	30.	10.	10.	0.51		
	HYDROGRAPH AT								
+	21B	185.	12.17	38.	13.	13.	1.38		
	HYDROGRAPH AT								
+	19B	102.	12.17	18.	6.	6.	0.38		
	2 COMBINED AT								
+	2C	287.	12.17	56.	19.	19.	1.76		
	ROUTED TO								
+	2R	273.	12.17	56.	19.	19.	1.76		
	HYDROGRAPH AT								
+	7B	48.	12.17	8.	3.	3.	0.10		
	HYDROGRAPH AT								
+	9B	124.	12.00	20.	6.	6.	0.20		
	HYDROGRAPH AT								

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```
     2 COMB'    J AT
+                9C     194.  12.00      30.      10.      10.     0.26

     ROUTED TO
+                9R      55.  12.50      26.       9.       9.     0.26
+                                                                 4702.07     12.50
1
                    SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                      (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                          INTERPOLATED TO
                                          COMPUTATION INTERVAL
      ISTAQ   ELEMENT    DT     PEAK   TIME TO    VOLUME     DT     PEAK   TIME TO    VOLUME
                          PEAK                     PEAK

                  (MIN)   (CFS)    (MIN)   (IN)   (MIN)   (CFS)   (MIN)     (IN)

     FOR STORM = 1  STORM AREA (SQ MI) =     10.00
        3R  MANE      1.67   175.22   730.19    0.63    10.00   174.86   730.00      0.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1713E+02 EXCESS=0.0000E+00 OUTFLOW=0.1710E+02 BASIN STORAGE=0.2977E-01 PERCENT ERROR=  0.0

     FOR STORM = 1  STORM AREA (SQ MI) =     10.00
        2R  MANE      2.00   279.97   732.00    0.35    10.00   273.25   730.00      0.35

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3323E+02 EXCESS=0.0000E+00 OUTFLOW=0.3313E+02 BASIN STORAGE=0.1025E+00 PERCENT ERROR=  0.0

     FOR STORM = 1  STORM AREA (SQ MI) =     10.00
        4R  MANE      1.83    87.99   724.09    1.12    10.00    85.95   730.00      1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7965E+01 EXCESS=0.0000E+00 OUTFLOW=0.7953E+01 BASIN STORAGE=0.1235E-01 PERCENT ERROR=  0.0


*** NORMAL END OF HEC-1 ***
```

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