A.6 2/25/96


```
 The listing file output unit is  6
 The Basic Package input unit is  1
1                    U.S. GEOLOGICAL SURVEY MODULAR FINITE-DIFFERENCE GROUND-WATER MODEL
0Basic Package translator - (c) 1994 Waterloo Hydrogeologic Software            ACS-A.BAS Mon Mar 18 09:08:54 1996
    1 LAYERS        31 ROWS        31 COLUMNS
   1 STRESS PERIOD(S) IN SIMULATION
 MODEL TIME UNIT IS DAYS
0I/O UNITS:
 ELEMENT OF IUNIT:  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
         I/O UNIT: 11  0  0 14 15  0  0 18 19  0  0 22  0  0  0  0  0  0  0  0  0  0  0  0
0BAS1 -- BASIC MODEL PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT  1
 ARRAYS RHS AND BUFF WILL SHARE MEMORY.
 START HEAD WILL BE SAVED
     8715 ELEMENTS IN X ARRAY ARE USED BY BAS
     8715 ELEMENTS OF X ARRAY USED OUT OF 5000000
0BCF2 -- BLOCK-CENTERED FLOW PACKAGE, VERSION 2, 7/1/91 INPUT READ FROM UNIT 11
 STEADY-STATE SIMULATION
 CELL-BY-CELL FLOWS WILL BE RECORDED ON UNIT 50
 HEAD AT CELLS THAT CONVERT TO DRY= -0.10000E+31
 WETTING CAPABILITY IS NOT ACTIVE
      LAYER  AQUIFER TYPE
      -------------------
         1          3
     2884 ELEMENTS IN X ARRAY ARE USED BY BCF
    11599 ELEMENTS OF X ARRAY USED OUT OF 5000000
0RCH1 -- RECHARGE PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 18
 OPTION 3 -- RECHARGE TO HIGHEST ACTIVE NODE IN EACH VERTICAL COLUMN
 CELL-BY-CELL FLOW TERMS WILL BE RECORDED ON UNIT 50
      961 ELEMENTS OF X ARRAY USED FOR RECHARGE
    12560 ELEMENTS OF X ARRAY USED OUT OF 5000000
0EVT1 -- EVAPOTRANSPIRATION PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 15
 OPTION 1 -- EVAPOTRANSPIRATION FROM TOP LAYER
 CELL-BY-CELL FLOW TERMS WILL BE SAVED ON UNIT 50
     2883 ELEMENTS OF X ARRAY USED FOR EVAPOTRANSPIRATION
    15443 ELEMENTS OF X ARRAY USED OUT OF 5000000
0RIV1 -- RIVER PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 14
 MAXIMUM OF   23 RIVER NODES
 CELL-BY-CELL FLOWS WILL BE RECORDED ON UNIT 50
      138 ELEMENTS IN X ARRAY ARE USED FOR RIVERS
    15581 ELEMENTS OF X ARRAY USED OUT OF 5000000
0SIP1 -- STRONGLY IMPLICIT PROCEDURE SOLUTION PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 19
 MAXIMUM OF 200 ITERATIONS ALLOWED FOR CLOSURE
  5 ITERATION PARAMETERS
     4649 ELEMENTS IN X ARRAY ARE USED BY SIP
```

US EPA RECORDS CENTER REGION 5
464745

```
    20230 ELEMENTS OF X ARRAY USED OUT OF 5000000
1Basic Package translator - (c) 1994 Waterloo Hydrogeologic Software            ACS-A.BAS Mon Mar 18 09:08:54 1996
         0


                                    BOUNDARY ARRAY FOR LAYER  1 WILL BE READ ON UNIT  1 USING FORMAT: (40I2)
                                ----------------------------------------------------------------------------------------------
0AQUIFER HEAD WILL BE SET TO 1.00000E+30 AT ALL NO-FLOW NODES (IBOUND=0).
         0


                                     INITIAL HEAD FOR LAYER  1 WILL BE READ ON UNIT  1 USING FORMAT:  (10G12.5)
                                ----------------------------------------------------------------------------------------------
0HEAD PRINT FORMAT IS FORMAT NUMBER   0    DRAWDOWN PRINT FORMAT IS FORMAT NUMBER   0
0HEADS WILL BE SAVED ON UNIT 30    DRAWDOWNS WILL BE SAVED ON UNIT 31
0OUTPUT CONTROL IS SPECIFIED EVERY TIME STEP
         0


                                COLUMN TO ROW ANISOTROPY WILL BE READ ON UNIT 11 USING FORMAT: (10G11.4)
                                ---------------------------------------------------------------------------

         0


                                          DELR WILL BE READ ON UNIT 11 USING FORMAT: (10G11.4)
                                ---------------------------------------------------------------------------

         0


                                          DELC WILL BE READ ON UNIT 11 USING FORMAT: (10G11.4)
                                ---------------------------------------------------------------------------

0                                                HYD. COND. ALONG ROWS =   12.00000     FOR LAYER  1
0                                                              BOTTOM =   620.0000     FOR LAYER  1
0                                                                 TOP =   640.0000     FOR LAYER  1
         0


                                                 SOLUTION BY THE STRONGLY IMPLICIT PROCEDURE
                                                 -------------------------------------------
0                                       MAXIMUM ITERATIONS ALLOWED FOR CLOSURE =      200
                                                     ACCELERATION PARAMETER =     1.0000
```

```
                                        HEAD CHANGE CRITERION FOR CLOSURE =    0.50000E-02
                                        SIP HEAD CHANGE PRINTOUT INTERVAL =       10
0                                       CALCULATE ITERATION PARAMETERS FROM MODEL CALCULATED WSEED
1                                      STRESS PERIOD NO.   1, LENGTH =   1.000000
                                       ---------------------------------------------

                                       NUMBER OF TIME STEPS =     1

                                        MULTIPLIER FOR DELT =     1.000

                                     INITIAL TIME STEP SIZE =   1.000000
        0


                                 RECHARGE WILL BE READ ON UNIT 18 USING FORMAT:  (15G11.4)
                              ---------------------------------------------------------------------------
0                                                   ET SURFACE =   640.0000
        0


                              EVAPOTRANSPIRATION RATE WILL BE READ ON UNIT 15 USING FORMAT:  (15G11.4)
                              ---------------------------------------------------------------------------
        0


                                    EXTINCTION DEPTH WILL BE READ ON UNIT 15 USING FORMAT:  (15G11.4)
                              ---------------------------------------------------------------------------
        0

    23 RIVER REACHES
```

0 LAYER	ROW	COL	STAGE	CONDUCTANCE	BOTTOM ELEVATION	RIVER REACH
1	5	2	628.1	1000.	625.1	1
1	5	3	628.4	1000.	625.3	2
1	5	4	628.5	1000.	625.4	3
1	5	5	628.6	1000.	625.4	4
1	5	6	628.7	1000.	625.5	5
1	6	7	628.9	1000.	625.6	6
1	6	8	628.9	1000.	625.6	7
1	6	9	629.0	1000.	625.6	8
1	6	10	629.0	1000.	625.7	9
1	6	11	629.1	1000.	625.7	10
1	6	12	629.1	1000.	625.7	11
1	6	13	629.1	1000.	625.8	12

```
                    1        6      14    629.2         1000.              625.8            13
                    1        6      15    629.2         1000.              625.8            14
                    1        7      16    629.3         1000.              625.9            15
                    1        8      17    629.4         1000.              626.0            16
                    1        8      18    629.5         1000.              626.0            17
                    1        7      19    629.5         1000.              626.0            18
                    1        6      19    629.5         1000.              626.0            19
                    1        5      20    629.5         1000.              626.0            20
                    1        4      21    629.5         1000.              626.0            21
                    1        3      22    629.5         1000.              626.0            22
                    1        2      23    629.5         1000.              626.0            23
0AVERAGE SEED = 0.00123011
 MINIMUM SEED = 0.00006954
         0
    5 ITERATION PARAMETERS CALCULATED FROM AVERAGE SEED:

           0.0000000E+00  0.8127223E+00  0.9649271E+00  0.9934316E+00  0.9987699E+00
         0
    16 ITERATIONS FOR TIME STEP   1 IN STRESS PERIOD  1
0MAXIMUM HEAD CHANGE FOR EACH ITERATION:
0 HEAD CHANGE LAYER,ROW,COL HEAD CHANGE LAYER,ROW,COL HEAD CHANGE LAYER,ROW,COL HEAD CHANGE LAYER,ROW,COL HEAD CHANGE LAYER,ROW,COL
 ---------------------------------------------------------------------------------------------------------------------------------
   -3.362     (  1, 28,  2)  -1.033     (  1, 24,  4)  -1.036     (  1, 23,  4)  0.9544     (  1, 23, 23) -0.5495     (  1, 25, 17)
   0.1193     (  1, 24, 17)  0.1320     (  1, 25, 18)  0.9560E-01 (  1, 17,  7)  0.2383     (  1, 20, 10) -0.9915E-01 (  1, 24, 17)
   0.1124E-01 (  1, 19, 21)  0.1491E-01 (  1, 20, 20) -0.2233E-01 (  1, 18,  8) -0.1853E-01 (  1, 18,  8) -0.8873E-02 (  1, 19, 20)
  -0.1116E-02 (  1, 21, 16)
         0
0HEAD/DRAWDOWN PRINTOUT FLAG = 1     TOTAL BUDGET PRINTOUT FLAG = 0     CELL-BY-CELL FLOW TERM FLAG = 1
0OUTPUT FLAGS FOR ALL LAYERS ARE THE SAME:
   HEAD    DRAWDOWN  HEAD  DRAWDOWN
 PRINTOUT  PRINTOUT  SAVE    SAVE
 ----------------------------------
     0         0       1       1
 "   CONSTANT HEAD" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "FLOW RIGHT FACE " BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "FLOW FRONT FACE " BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "        RECHARGE" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "              ET" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "   RIVER LEAKAGE" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 CALIBRATION PACKAGE OUTPUT
 CALIBRATION OUTPUT POINTS
 ------------------
0HEAD WILL BE SAVED ON UNIT 30 AT END OF TIME STEP  1, STRESS PERIOD  1
0DRAWDOWN WILL BE SAVED ON UNIT 31 AT END OF TIME STEP  1, STRESS PERIOD  1
```

```
0

                    VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP  1 IN STRESS PERIOD  1
                    ------------------------------------------------------------------------------
0             CUMULATIVE VOLUMES      L**3                          RATES FOR THIS TIME STEP      L**3/T
              ------------------                                    ------------------------

                   IN:                                                   IN:
                   ---                                                   ---
                     STORAGE =   0.00000E+00                               STORAGE =   0.00000E+00
             CONSTANT HEAD =     1223.0                                CONSTANT HEAD =     1223.0
                  RECHARGE =     1145.2                                     RECHARGE =     1145.2
                        ET =   0.00000E+00                                         ET =   0.00000E+00
             RIVER LEAKAGE =     2.4414                                RIVER LEAKAGE =     2.4414
0                 TOTAL IN =     2370.7                                     TOTAL IN =     2370.7
0                  OUT:                                                  OUT:
                   ----                                                  ----
                     STORAGE =   0.00000E+00                               STORAGE =   0.00000E+00
             CONSTANT HEAD =     1944.4                                CONSTANT HEAD =     1944.4
                  RECHARGE =   0.00000E+00                                     RECHARGE =   0.00000E+00
                        ET =   0.00000E+00                                         ET =   0.00000E+00
             RIVER LEAKAGE =     425.29                                RIVER LEAKAGE =     425.29
0                TOTAL OUT =     2369.7                                    TOTAL OUT =     2369.7
0                 IN - OUT =   0.98828                                      IN - OUT =   0.98828
0          PERCENT DISCREPANCY =                0.04                 PERCENT DISCREPANCY =                0.04


0

        TIME SUMMARY AT END OF TIME STEP  1 IN STRESS PERIOD  1
                              SECONDS        MINUTES         HOURS          DAYS          YEARS
                            ---------------------------------------------------------------------
     TIME STEP LENGTH         86400.0        1440.00        24.0000        1.00000       0.273785E-02
   STRESS PERIOD TIME         86400.0        1440.00        24.0000        1.00000       0.273785E-02
TOTAL SIMULATION TIME         86400.0        1440.00        24.0000        1.00000       0.273785E-02
        1
```

```
 The listing file output unit is  6
 The Basic Package input unit is  1
1                    U.S. GEOLOGICAL SURVEY MODULAR FINITE-DIFFERENCE GROUND-WATER MODEL
0Basic Package translator - (c) 1994 Waterloo Hydrogeologic Software            ACS-B.BAS Mon Mar 18 09:26:24 1996
    1 LAYERS        31 ROWS        31 COLUMNS
   1 STRESS PERIOD(S) IN SIMULATION
 MODEL TIME UNIT IS DAYS
0I/O UNITS:
 ELEMENT OF IUNIT:  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
         I/O UNIT: 11  0 13 14 15  0  0 18 19  0  0 22  0  0  0  0  0  0  0  0  0  0  0  0
0BAS1 -- BASIC MODEL PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT  1
 ARRAYS RHS AND BUFF WILL SHARE MEMORY.
 START HEAD WILL BE SAVED
     8715 ELEMENTS IN X ARRAY ARE USED BY BAS
     8715 ELEMENTS OF X ARRAY USED OUT OF 5000000
0BCF2 -- BLOCK-CENTERED FLOW PACKAGE, VERSION 2, 7/1/91 INPUT READ FROM UNIT 11
 STEADY-STATE SIMULATION
 CELL-BY-CELL FLOWS WILL BE RECORDED ON UNIT 50
 HEAD AT CELLS THAT CONVERT TO DRY= -0.10000E+31
 WETTING CAPABILITY IS NOT ACTIVE
      LAYER  AQUIFER TYPE
      -------------------
         1         3
     2884 ELEMENTS IN X ARRAY ARE USED BY BCF
    11599 ELEMENTS OF X ARRAY USED OUT OF 5000000
0DRN1 -- DRAIN PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 13
 MAXIMUM OF   18 DRAINS
 CELL-BY-CELL FLOWS WILL BE RECORDED ON UNIT 50
       90 ELEMENTS IN X ARRAY ARE USED FOR DRAINS
    11689 ELEMENTS OF X ARRAY USED OUT OF 5000000
0RCH1 -- RECHARGE PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 18
 OPTION 3 -- RECHARGE TO HIGHEST ACTIVE NODE IN EACH VERTICAL COLUMN
 CELL-BY-CELL FLOW TERMS WILL BE RECORDED ON UNIT 50
      961 ELEMENTS OF X ARRAY USED FOR RECHARGE
    12650 ELEMENTS OF X ARRAY USED OUT OF 5000000
0EVT1 -- EVAPOTRANSPIRATION PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 15
 OPTION 1 -- EVAPOTRANSPIRATION FROM TOP LAYER
 CELL-BY-CELL FLOW TERMS WILL BE SAVED ON UNIT 50
     2883 ELEMENTS OF X ARRAY USED FOR EVAPOTRANSPIRATION
    15533 ELEMENTS OF X ARRAY USED OUT OF 5000000
0RIV1 -- RIVER PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 14
 MAXIMUM OF   23 RIVER NODES
 CELL-BY-CELL FLOWS WILL BE RECORDED ON UNIT 50
      138 ELEMENTS IN X ARRAY ARE USED FOR RIVERS
```

```
    15671 ELEMENTS OF X ARRAY USED OUT OF 5000000
0SIP1 -- STRONGLY IMPLICIT PROCEDURE SOLUTION PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 19
 MAXIMUM OF 200 ITERATIONS ALLOWED FOR CLOSURE
  5 ITERATION PARAMETERS
     4649 ELEMENTS IN X ARRAY ARE USED BY SIP
    20320 ELEMENTS OF X ARRAY USED OUT OF 5000000
1Basic Package translator - (c) 1994 Waterloo Hydrogeologic Software            ACS-B.BAS Mon Mar 18 09:26:24 1996
         0


                                    BOUNDARY ARRAY FOR LAYER  1 WILL BE READ ON UNIT  1 USING FORMAT: (40I2)
                                ----------------------------------------------------------------------------------------------
0AQUIFER HEAD WILL BE SET TO 1.00000E+30 AT ALL NO-FLOW NODES (IBOUND=0).
         0


                                      INITIAL HEAD FOR LAYER  1 WILL BE READ ON UNIT  1 USING FORMAT:  (10G12.5)
                                ----------------------------------------------------------------------------------------------
0HEAD PRINT FORMAT IS FORMAT NUMBER   0    DRAWDOWN PRINT FORMAT IS FORMAT NUMBER   0
0HEADS WILL BE SAVED ON UNIT 30    DRAWDOWNS WILL BE SAVED ON UNIT 31
0OUTPUT CONTROL IS SPECIFIED EVERY TIME STEP
         0


                                COLUMN TO ROW ANISOTROPY WILL BE READ ON UNIT 11 USING FORMAT: (10G11.4)
                                ---------------------------------------------------------------------------

         0


                                           DELR WILL BE READ ON UNIT 11 USING FORMAT: (10G11.4)
                                ---------------------------------------------------------------------------

         0


                                           DELC WILL BE READ ON UNIT 11 USING FORMAT: (10G11.4)
                                ---------------------------------------------------------------------------

0                                                HYD. COND. ALONG ROWS =   12.00000     FOR LAYER  1
0                                                              BOTTOM =   620.0000     FOR LAYER  1
0                                                                 TOP =   640.0000     FOR LAYER  1
         0
```

```
                                        SOLUTION BY THE STRONGLY IMPLICIT PROCEDURE
                                        --------------------------------------------
0                                 MAXIMUM ITERATIONS ALLOWED FOR CLOSURE =      200
                                              ACCELERATION PARAMETER =     1.0000
                                     HEAD CHANGE CRITERION FOR CLOSURE =    0.50000E-02
                                     SIP HEAD CHANGE PRINTOUT INTERVAL =       10
0                                    CALCULATE ITERATION PARAMETERS FROM MODEL CALCULATED WSEED
1                                   STRESS PERIOD NO.   1, LENGTH =   1.000000
                                    --------------------------------------------

                                    NUMBER OF TIME STEPS =     1

                                     MULTIPLIER FOR DELT =     1.000

                                  INITIAL TIME STEP SIZE =   1.000000
        0

    18 DRAINS
0
```

LAYER	ROW	COL	ELEVATION	CONDUCTANCE	DRAIN NO.
1	24	6	628.0	50.00	1
1	23	6	628.0	50.00	2
1	22	6	628.0	50.00	3
1	21	7	628.0	50.00	4
1	20	7	628.0	50.00	5
1	19	8	628.0	50.00	6
1	18	9	628.0	50.00	7
1	17	10	628.0	50.00	8
1	16	10	628.0	50.00	9
1	15	11	628.0	50.00	10
1	14	12	628.0	50.00	11
1	13	12	628.0	50.00	12
1	12	13	628.0	50.00	13
1	11	13	628.0	50.00	14
1	10	14	628.0	100.0	15
1	10	15	628.0	100.0	16
1	10	16	628.0	100.0	17
1	10	17	628.0	100.0	18

```
        0

                                  RECHARGE WILL BE READ ON UNIT 18 USING FORMAT:  (15G11.4)
                                  ----------------------------------------------------------
```

```
0                                                                    ET SURFACE =   640.0000
         0

                          EVAPOTRANSPIRATION RATE WILL BE READ ON UNIT 15 USING FORMAT:  (15G11.4)
                          ------------------------------------------------------------------------------
         0

                                EXTINCTION DEPTH WILL BE READ ON UNIT 15 USING FORMAT:  (15G11.4)
                          ------------------------------------------------------------------------------
         0

    23 RIVER REACHES
0                LAYER     ROW     COL     STAGE     CONDUCTANCE   BOTTOM ELEVATION   RIVER REACH
                 ---------------------------------------------------------------------------------
                   1        5       2     628.1        1000.              625.1            1
                   1        5       3     628.4        1000.              625.3            2
                   1        5       4     628.5        1000.              625.4            3
                   1        5       5     628.6        1000.              625.4            4
                   1        5       6     628.7        1000.              625.5            5
                   1        6       7     628.9        1000.              625.6            6
                   1        6       8     628.9        1000.              625.6            7
                   1        6       9     629.0        1000.              625.6            8
                   1        6      10     629.0        1000.              625.7            9
                   1        6      11     629.1        1000.              625.7           10
                   1        6      12     629.1        1000.              625.7           11
                   1        6      13     629.1        1000.              625.8           12
                   1        6      14     629.2        1000.              625.8           13
                   1        6      15     629.2        1000.              625.8           14
                   1        7      16     629.3        1000.              625.9           15
                   1        8      17     629.4        1000.              626.0           16
                   1        8      18     629.5        1000.              626.0           17
                   1        7      19     629.5        1000.              626.0           18
                   1        6      19     629.5        1000.              626.0           19
                   1        5      20     629.5        1000.              626.0           20
                   1        4      21     629.5        1000.              626.0           21
                   1        3      22     629.5        1000.              626.0           22
                   1        2      23     629.5        1000.              626.0           23
0AVERAGE SEED = 0.00123011
 MINIMUM SEED = 0.00006954
         0
    5 ITERATION PARAMETERS CALCULATED FROM AVERAGE SEED:
```

```
          0.0000000E+00  0.8127223E+00  0.9649271E+00  0.9934316E+00  0.9987699E+00
        0
    11 ITERATIONS FOR TIME STEP   1 IN STRESS PERIOD  1
0MAXIMUM HEAD CHANGE FOR EACH ITERATION:
0 HEAD CHANGE LAYER,ROW,COL HEAD CHANGE LAYER,ROW,COL HEAD CHANGE LAYER,ROW,COL HEAD CHANGE LAYER,ROW,COL HEAD CHANGE LAYER,ROW,COL
 ---------------------------------------------------------------------------------------------------------------------------------
   -3.362     (  1, 28,  2)  -1.172     (  1, 24,  4)  -1.032     (  1, 22,  4) -0.9184     (  1, 15,  6) -0.3913     (  1, 25, 17)
   0.8019E-01 (  1, 24, 17)  0.8378E-01 (  1, 25, 18)  0.7751E-01 (  1, 15,  6)  0.7059E-01 (  1, 23, 13) -0.3708E-01 (  1, 24, 17)
  -0.4297E-02 (  1, 28, 21)
        0
0HEAD/DRAWDOWN PRINTOUT FLAG = 1     TOTAL BUDGET PRINTOUT FLAG = 0     CELL-BY-CELL FLOW TERM FLAG = 1
0OUTPUT FLAGS FOR ALL LAYERS ARE THE SAME:
   HEAD    DRAWDOWN  HEAD  DRAWDOWN
 PRINTOUT  PRINTOUT  SAVE    SAVE
 ---------------------------------
     0         0       1       1
 "   CONSTANT HEAD" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "FLOW RIGHT FACE " BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "FLOW FRONT FACE " BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "          DRAINS" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "        RECHARGE" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "              ET" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "   RIVER LEAKAGE" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 CALIBRATION PACKAGE OUTPUT
 CALIBRATION OUTPUT POINTS
 ------------------
0HEAD WILL BE SAVED ON UNIT 30 AT END OF TIME STEP  1, STRESS PERIOD  1
0DRAWDOWN WILL BE SAVED ON UNIT 31 AT END OF TIME STEP  1, STRESS PERIOD  1
        0


                         VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP  1 IN STRESS PERIOD  1
                         ------------------------------------------------------------------------------
0                  CUMULATIVE VOLUMES      L**3                                  RATES FOR THIS TIME STEP      L**3/T
                   ------------------                                            ------------------------

                        IN:                                                            IN:
                        ---                                                            ---
                          STORAGE =   0.00000E+00                                        STORAGE =   0.00000E+00
                    CONSTANT HEAD =    1283.2                                      CONSTANT HEAD =    1283.2
                           DRAINS =   0.00000E+00                                         DRAINS =   0.00000E+00
                         RECHARGE =    1145.2                                        RECHARGE =    1145.2
                               ET =   0.00000E+00                                             ET =   0.00000E+00
                    RIVER LEAKAGE =    201.05                                      RIVER LEAKAGE =    201.05
```

```
0                    TOTAL IN =    2629.5
0                   OUT:
                    ----
                      STORAGE =   0.00000E+00
                CONSTANT HEAD =    1811.3
                       DRAINS =    595.83
                     RECHARGE =   0.00000E+00
                           ET =   0.00000E+00
                RIVER LEAKAGE =    220.09
0                   TOTAL OUT =    2627.2
0                    IN - OUT =    2.2454
0           PERCENT DISCREPANCY =              0.09
```

```
TOTAL IN =    2629.5
OUT:
----
  STORAGE =   0.00000E+00
CONSTANT HEAD =    1811.3
  DRAINS =    595.83
  RECHARGE =   0.00000E+00
  ET =   0.00000E+00
RIVER LEAKAGE =    220.09
  TOTAL OUT =    2627.2
  IN - OUT =    2.2454
PERCENT DISCREPANCY =              0.09
```

```
0

TIME SUMMARY AT END OF TIME STEP  1 IN STRESS PERIOD  1
                        SECONDS        MINUTES         HOURS          DAYS          YEARS
                    ---------------------------------------------------------------------------
     TIME STEP LENGTH    86400.0        1440.00        24.0000        1.00000       0.273785E-02
   STRESS PERIOD TIME    86400.0        1440.00        24.0000        1.00000       0.273785E-02
TOTAL SIMULATION TIME    86400.0        1440.00        24.0000        1.00000       0.273785E-02
1
```

```
 The listing file output unit is  6
 The Basic Package input unit is  1
1                    U.S. GEOLOGICAL SURVEY MODULAR FINITE-DIFFERENCE GROUND-WATER MODEL
0Basic Package translator - (c) 1994 Waterloo Hydrogeologic Software            ACS-C.BAS Mon Mar 18 09:19:32 1996
    1 LAYERS        31 ROWS        31 COLUMNS
   1 STRESS PERIOD(S) IN SIMULATION
 MODEL TIME UNIT IS DAYS
0I/O UNITS:
 ELEMENT OF IUNIT:  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
         I/O UNIT: 11  0 13 14 15  0  0 18 19  0  0 22  0  0  0  0  0  0  0  0  0  0  0  0
0BAS1 -- BASIC MODEL PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT  1
 ARRAYS RHS AND BUFF WILL SHARE MEMORY.
 START HEAD WILL BE SAVED
     8715 ELEMENTS IN X ARRAY ARE USED BY BAS
     8715 ELEMENTS OF X ARRAY USED OUT OF 5000000
0BCF2 -- BLOCK-CENTERED FLOW PACKAGE, VERSION 2, 7/1/91 INPUT READ FROM UNIT 11
 STEADY-STATE SIMULATION
 CELL-BY-CELL FLOWS WILL BE RECORDED ON UNIT 50
 HEAD AT CELLS THAT CONVERT TO DRY= -0.10000E+31
 WETTING CAPABILITY IS NOT ACTIVE
      LAYER  AQUIFER TYPE
      -------------------
         1         3
     2884 ELEMENTS IN X ARRAY ARE USED BY BCF
    11599 ELEMENTS OF X ARRAY USED OUT OF 5000000
0DRN1 -- DRAIN PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 13
 MAXIMUM OF   22 DRAINS
 CELL-BY-CELL FLOWS WILL BE RECORDED ON UNIT 50
      110 ELEMENTS IN X ARRAY ARE USED FOR DRAINS
    11709 ELEMENTS OF X ARRAY USED OUT OF 5000000
0RCH1 -- RECHARGE PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 18
 OPTION 3 -- RECHARGE TO HIGHEST ACTIVE NODE IN EACH VERTICAL COLUMN
 CELL-BY-CELL FLOW TERMS WILL BE RECORDED ON UNIT 50
      961 ELEMENTS OF X ARRAY USED FOR RECHARGE
    12670 ELEMENTS OF X ARRAY USED OUT OF 5000000
0EVT1 -- EVAPOTRANSPIRATION PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 15
 OPTION 1 -- EVAPOTRANSPIRATION FROM TOP LAYER
 CELL-BY-CELL FLOW TERMS WILL BE SAVED ON UNIT 50
     2883 ELEMENTS OF X ARRAY USED FOR EVAPOTRANSPIRATION
    15553 ELEMENTS OF X ARRAY USED OUT OF 5000000
0RIV1 -- RIVER PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 14
 MAXIMUM OF   23 RIVER NODES
 CELL-BY-CELL FLOWS WILL BE RECORDED ON UNIT 50
      138 ELEMENTS IN X ARRAY ARE USED FOR RIVERS
```

```
    15691 ELEMENTS OF X ARRAY USED OUT OF 5000000
0SIP1 -- STRONGLY IMPLICIT PROCEDURE SOLUTION PACKAGE, VERSION 1, 9/1/87 INPUT READ FROM UNIT 19
 MAXIMUM OF 200 ITERATIONS ALLOWED FOR CLOSURE
  5 ITERATION PARAMETERS
     4649 ELEMENTS IN X ARRAY ARE USED BY SIP
    20340 ELEMENTS OF X ARRAY USED OUT OF 5000000
1Basic Package translator - (c) 1994 Waterloo Hydrogeologic Software            ACS-C.BAS Mon Mar 18 09:19:32 1996
         0


                                    BOUNDARY ARRAY FOR LAYER  1 WILL BE READ ON UNIT  1 USING FORMAT: (40I2)
                              ----------------------------------------------------------------------------------------------
0AQUIFER HEAD WILL BE SET TO 1.00000E+30 AT ALL NO-FLOW NODES (IBOUND=0).
         0


                                      INITIAL HEAD FOR LAYER  1 WILL BE READ ON UNIT  1 USING FORMAT:  (10G12.5)
                              ----------------------------------------------------------------------------------------------
0HEAD PRINT FORMAT IS FORMAT NUMBER   0    DRAWDOWN PRINT FORMAT IS FORMAT NUMBER   0
0HEADS WILL BE SAVED ON UNIT 30    DRAWDOWNS WILL BE SAVED ON UNIT 31
0OUTPUT CONTROL IS SPECIFIED EVERY TIME STEP
         0


                              COLUMN TO ROW ANISOTROPY WILL BE READ ON UNIT 11 USING FORMAT: (10G11.4)
                              ------------------------------------------------------------------------------

         0


                                         DELR WILL BE READ ON UNIT 11 USING FORMAT: (10G11.4)
                              ------------------------------------------------------------------------------

         0


                                         DELC WILL BE READ ON UNIT 11 USING FORMAT: (10G11.4)
                              ------------------------------------------------------------------------------

0                                                HYD. COND. ALONG ROWS =   12.00000     FOR LAYER  1
0                                                              BOTTOM =   620.0000     FOR LAYER  1
0                                                                 TOP =   640.0000     FOR LAYER  1
         0
```

```
                                        SOLUTION BY THE STRONGLY IMPLICIT PROCEDURE
                                        --------------------------------------------
0                                 MAXIMUM ITERATIONS ALLOWED FOR CLOSURE =      200
                                              ACCELERATION PARAMETER =     1.0000
                                   HEAD CHANGE CRITERION FOR CLOSURE =    0.50000E-02
                                   SIP HEAD CHANGE PRINTOUT INTERVAL =       10
0                                  CALCULATE ITERATION PARAMETERS FROM MODEL CALCULATED WSEED
1                                 STRESS PERIOD NO.   1, LENGTH =   1.000000
                                  ---------------------------------------------

                                  NUMBER OF TIME STEPS =     1

                                   MULTIPLIER FOR DELT =     1.000

                                INITIAL TIME STEP SIZE =   1.000000
        0

    22 DRAINS
0
```

LAYER	ROW	COL	ELEVATION	CONDUCTANCE	DRAIN NO.
1	24	6	628.0	50.00	1
1	23	6	628.0	50.00	2
1	22	6	628.0	50.00	3
1	21	7	628.0	50.00	4
1	20	7	628.0	50.00	5
1	19	8	628.0	50.00	6
1	18	9	628.0	50.00	7
1	17	10	628.0	50.00	8
1	16	10	628.0	50.00	9
1	15	11	628.0	50.00	10
1	14	12	628.0	50.00	11
1	13	12	628.0	50.00	12
1	12	13	628.0	50.00	13
1	11	13	628.0	50.00	14
1	10	14	628.0	100.0	15
1	10	15	628.0	100.0	16
1	10	16	628.0	100.0	17
1	10	17	628.0	100.0	18
1	10	18	628.0	50.00	19
1	10	19	628.0	50.00	20
1	11	20	628.0	50.00	21
1	11	21	628.0	50.00	22

0

RECHARGE WILL BE READ ON UNIT 18 USING FORMAT: (15G11.4)

---

0 ET SURFACE = 640.0000

0

EVAPOTRANSPIRATION RATE WILL BE READ ON UNIT 15 USING FORMAT: (15G11.4)

0

EXTINCTION DEPTH WILL BE READ ON UNIT 15 USING FORMAT: (15G11.4)

0

23 RIVER REACHES

0

LAYER	ROW	COL	STAGE	CONDUCTANCE	BOTTOM ELEVATION	RIVER REACH
1	5	2	628.1	1000.	625.1	1
1	5	3	628.4	1000.	625.3	2
1	5	4	628.5	1000.	625.4	3
1	5	5	628.6	1000.	625.4	4
1	5	6	628.7	1000.	625.5	5
1	6	7	628.9	1000.	625.6	6
1	6	8	628.9	1000.	625.6	7
1	6	9	629.0	1000.	625.6	8
1	6	10	629.0	1000.	625.7	9
1	6	11	629.1	1000.	625.7	10
1	6	12	629.1	1000.	625.7	11
1	6	13	629.1	1000.	625.8	12
1	6	14	629.2	1000.	625.8	13
1	6	15	629.2	1000.	625.8	14
1	7	16	629.3	1000.	625.9	15
1	8	17	629.4	1000.	626.0	16
1	8	18	629.5	1000.	626.0	17
1	7	19	629.5	1000.	626.0	18
1	6	19	629.5	1000.	626.0	19
1	5	20	629.5	1000.	626.0	20
1	4	21	629.5	1000.	626.0	21
1	3	22	629.5	1000.	626.0	22
1	2	23	629.5	1000.	626.0	23

0AVERAGE SEED = 0.00123011

```
 MINIMUM SEED = 0.00006954
         0
    5 ITERATION PARAMETERS CALCULATED FROM AVERAGE SEED:

            0.0000000E+00  0.8127223E+00  0.9649271E+00  0.9934316E+00  0.9987699E+00
         0
    11 ITERATIONS FOR TIME STEP   1 IN STRESS PERIOD  1
0MAXIMUM HEAD CHANGE FOR EACH ITERATION:
0 HEAD CHANGE LAYER,ROW,COL HEAD CHANGE LAYER,ROW,COL HEAD CHANGE LAYER,ROW,COL HEAD CHANGE LAYER,ROW,COL HEAD CHANGE LAYER,ROW,COL
 ---------------------------------------------------------------------------------------------------------------------------------
   -3.362      (  1, 28,  2)  -1.172      (  1, 24,  4)  -1.032      (  1, 22,  4) -0.9220      (  1, 15,  6) -0.3874      (  1, 26, 18)
   0.7924E-01 (  1, 24, 17)  0.8153E-01 (  1, 25, 18)  0.7710E-01 (  1, 15,  6)  0.6979E-01 (  1, 23, 13) -0.3632E-01 (  1, 23, 17)
  -0.4385E-02 (  1, 28, 20)
         0
0HEAD/DRAWDOWN PRINTOUT FLAG = 1     TOTAL BUDGET PRINTOUT FLAG = 0     CELL-BY-CELL FLOW TERM FLAG = 1
0OUTPUT FLAGS FOR ALL LAYERS ARE THE SAME:
   HEAD    DRAWDOWN  HEAD  DRAWDOWN
 PRINTOUT  PRINTOUT  SAVE    SAVE
 ---------------------------------
     0         0       1       1
 "   CONSTANT HEAD" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "FLOW RIGHT FACE " BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "FLOW FRONT FACE " BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "          DRAINS" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "        RECHARGE" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "              ET" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 "   RIVER LEAKAGE" BUDGET VALUES WILL BE SAVED ON UNIT 50 AT END OF TIME STEP  1, STRESS PERIOD  1
 CALIBRATION PACKAGE OUTPUT
 CALIBRATION OUTPUT POINTS
 ------------------
0HEAD WILL BE SAVED ON UNIT 30 AT END OF TIME STEP  1, STRESS PERIOD  1
0DRAWDOWN WILL BE SAVED ON UNIT 31 AT END OF TIME STEP  1, STRESS PERIOD  1
         0


                         VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP  1 IN STRESS PERIOD  1
                         ------------------------------------------------------------------------------
0                   CUMULATIVE VOLUMES      L**3                                RATES FOR THIS TIME STEP      L**3/T
                    ------------------                                          ------------------------

                         IN:                                                          IN:
                         ---                                                          ---
                           STORAGE =   0.00000E+00                                      STORAGE =   0.00000E+00
                     CONSTANT HEAD =    1316.6                                       CONSTANT HEAD =    1316.6
```

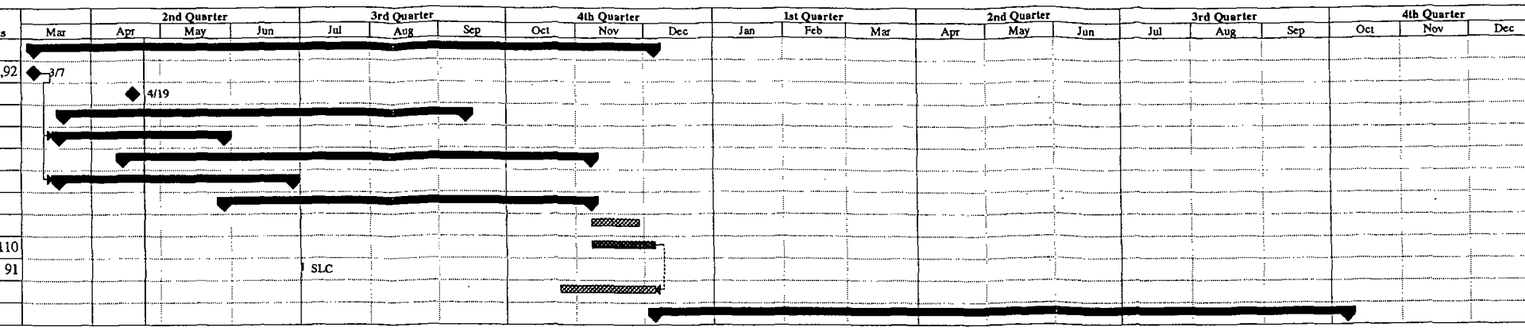
```
                    DRAINS =   0.00000E+00                                    DRAINS =   0.00000E+00
                 RECHARGE =    1145.2                                      RECHARGE =    1145.2
                        ET =   0.00000E+00                                         ET =   0.00000E+00
            RIVER LEAKAGE =    298.65                                  RIVER LEAKAGE =    298.65
0                TOTAL IN =    2760.4                                       TOTAL IN =    2760.4
0               OUT:                                                        OUT:
                ----                                                        ----
                  STORAGE =   0.00000E+00                                      STORAGE =   0.00000E+00
            CONSTANT HEAD =    1795.5                                  CONSTANT HEAD =    1795.5
                   DRAINS =    802.76                                         DRAINS =    802.76
                 RECHARGE =   0.00000E+00                                    RECHARGE =   0.00000E+00
                        ET =   0.00000E+00                                         ET =   0.00000E+00
            RIVER LEAKAGE =    161.38                                  RIVER LEAKAGE =    161.38
0               TOTAL OUT =    2759.6                                      TOTAL OUT =    2759.6
0                IN - OUT =   0.83203                                        IN - OUT =   0.83203
0        PERCENT DISCREPANCY =                0.03                  PERCENT DISCREPANCY =                0.03


         0


         TIME SUMMARY AT END OF TIME STEP  1 IN STRESS PERIOD  1
                            SECONDS        MINUTES         HOURS          DAYS          YEARS
                        ----------------------------------------------------------------------
     TIME STEP LENGTH       86400.0        1440.00        24.0000        1.00000      0.273785E-02
   STRESS PERIOD TIME       86400.0        1440.00        24.0000        1.00000      0.273785E-02
TOTAL SIMULATION TIME       86400.0        1440.00        24.0000        1.00000      0.273785E-02
         1
```

A.2
3/25/96

Revised 3/25/96

Project Schedule
ACS NPL Site Remedial Design/Remedial Action
March 1996

ID	WBS	Activity	Duratl	Start	Finish	Predecessors	Successors
46	1.6	**PGCS Construction**	**196d**	**3/7/96**	**12/5/96**		
47	1.6.1	*Award of Work Orders 1-5 (from ACS)*	7d	3/7/96	3/15/96		50,77,92
48	1.6.2	Mobilize to Site - MW	10d	4/19/96	5/2/96	61FS-10d	
49	1.6.3	**Building Construction**	**127d**	**3/20/96**	**9/12/96**		
77	1.6.4	**C & G - Road Costr. Phase 1**	**52d**	**3/18/96**	**5/28/96**	**47**	
82	1.6.5	**Equipment Installation**	**149d**	**4/15/96**	**11/7/96**		
92	1.6.6	**Install Utilities**	**74d**	**3/18/96**	**6/27/96**	**47**	
99	1.6.7	**Interceptor Trench**	**117d**	**5/29/96**	**11/7/96**		
105	1.6.8	Road Construction (Phase 2)	15d	11/8/96	11/28/96	104	
106	1.6.9	Start Up PGCS / Transfer Ownership	20d	11/8/96	12/5/96	91	108FF,110
107	1.6.10	Receive Authorization to Discharge to Wetlands	1d	7/1/96	7/1/96		91
108	1.6.11	Site Restoration	30d	10/25/96	12/5/96	106FF	
109	1.7	**PGCS Construction Inspections/Reports**	**218d**	**12/6/96**	**10/8/97**		



Project : ACS NPL Site Remedial Design/Remedial Action
Date Printed: 4/24/96
File Name: J:\4077\T_LEWIS\SCHEDULE\PRECONSC.MPP

Non-Critical Task Critical Task Milestone Summary

This Schedule is based upon the Agency review times noted. The actual schedule would fluctuate in response to Agency review times.

d=working days ed=elasped days