

Appendix 2: Selected Input Datasets and Printed Results for Test Simulation 2

Selected sections of several key input and output data files are shown below for test simulation 2—sometimes with annotations; gaps in the listings are indicated by an ellipsis. A complete set of the files is available for distribution over the Internet as discussed in the Preface. Contents of some files are enclosed in a border and explanations are noted outside of the border; for other files, explanations are sometimes included as comments following a semicolon on the line being explained. Some brief annotations were added to the selected output listings to help the reader understand the purpose of various sections of output. These annotations are written in *bold italics*. Font sizes in the following listings are sometimes reduced so that lines will fit within page margins. Information pertaining specifically to the UZF1 Package is highlighted by shading.

Listing of Selected Input Data Sets for Test Simulation 2

Following (enclosed in a border) are the contents of the MODFLOW name file for test simulation 2. Shading indicates input files in which values are used in the UZF1 Package and output files in which information from the UZF1 Package are printed or saved:

File name: UZFtest2.nam

LIST	9	Out\UZFtest2.lst	← Output file for MODFLOW
BAS6	75	Data\UZFtest2.ba6	← Input file for Basic Package
LPF	7	Data\UZFtest2.lpf	← Input file for Layer-Property Flow Package
DIS	8	Data\UZFtest2.dis	← Input file for Discretization file
SIP	13	Data\UZFtest2.sip	← Input file for Strongly Implicit Procedure Package
OC	14	Data\UZFtest2.oc	← Input file for Output Control option
SFR	15	Data\UZFtest2.sfr	← Input file for Streamflow-Routing Package
WEL	16	Data\UZFtest2.wel	← Input file for Well Package
GHB	17	Data\UZFtest2.ghb	← Input file for General-Head Boundary Package
UZF	19	Data\UZFtest2.uzf	← Input file for Unsaturated-Zone Flow Package
GAGE	32	Data\UZFtest2.gag	← Input file for Gage Package
DATA	58	Out\UZFtest2hd.out	← Output file for calculated heads
DATA(BINARY)	61	Out\UZFtest2.uzfot	← Output file for recharge and ground-water discharge
DATA	65	Out\UZFtest2.uzf1	← Output file unsaturated zone cell 1 (row 3, column 6)
DATA	66	Out\UZFtest2.uzf2	← Output file unsaturated zone cell 2 (row 6, column 3)
DATA	67	Out\UZFtest2.uzf3	← Output file unsaturated zone cell 3 (row 10, column 5)
DATA	68	Out\UZFtest2.uzf4	← Output file of times series of unsaturated-zone water budgets
DATA	81	Out\UZFtest2.flw	← Auxiliary output file for the Streamflow-Routing Package
DATA	83	Out\UZFtest2.sg1	← Output file for last reach in stream segment 1
DATA	84	Out\UZFtest2.sg2	← Output file for last reach in stream segment 2
DATA	85	Out\UZFtest2.sg3	← Output file for last reach in stream segment 3
DATA	86	Out\UZFtest2.sg4	← Output file for last reach in stream segment 4
DATA	87	Out\UZFtest2.sg5	← Output file for last reach in stream segment 5
DATA	88	Out\UZFtest2.sg6	← Output file for last reach in stream segment 6
DATA	89	Out\UZFtest2.sg7	← Output file for last reach in stream segment 7
DATA	90	Out\UZFtest2.sg8	← Output file for last reach in stream segment 8
DATA	91	Out\UZFtest2dv.sg9	← Output file for first reach in stream segment 3

↑ ↑ ↑
1 2 3

¹ Ftype (the type of file).

² Unit number.

³ File name (name chosen to reflect contents of file).

34 Documentation of the Unsaturated-Zone Flow Package

Following (enclosed in a border) are the contents of the Basic Package input file for test simulation 2; explanations are noted outside of border:

File name: UZFTest2.ba6

```

#Test Simulation 2-- Example problem using the UZF1 Package ← 1
#Modified from example Problem 1 of SFR1 documentation report ← 1
FREE ← 2
INTERNAL          1 (10I4)      6 IBOUND layer 1 ← 3
  1  1  0  0  0  0  0  0  0  0 ← 3
  1  1  1  0  0  1  1  1  0  0
  0  1  1  1  1  1  1  1  0  0
  1  1  1  1  1  1  1  1  1  0
  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  0
  0  1  1  1  1  1  1  1  1  0
  0  1  1  1  1  1  1  1  1  0
  0  1  1  1  1  1  1  1  1  1
  0  1  1  1  1  1  1  1  1  0
  1  1  1  1  1  1  1  1  1  0
  1  1  1  1  1  1  1  1  1  0
  0  1  1  1  1  1  1  1  1  0
  0  0  1  1  1  1  0  0  0  0
6999.00 HNOFLO ← 4
INTERNAL  1.000E+00 (10F8.0)  0 SHEAD layer 1 ← 5
 1092.9 1089.4 6999.0 6999.0 6999.0 6999.0 6999.0 6999.0 6999.0 6999.0 ← 5
 1089.9 1086.7 1081.4 6999.0 6999.0 1072.3 1071.5 1071.1 6999.0 6999.0
 6999.0 1079.4 1077.5 1073.6 1072.5 1070.6 1069.1 1068.3 6999.0 6999.0
 1069.1 1070.7 1070.2 1067.0 1065.5 1063.6 1063.9 1065.9 1066.1 6999.0
 1064.9 1063.9 1062.9 1061.5 1060.8 1060.8 1060.2 1062.0 1065.7 1068.1
 1059.8 1058.3 1057.2 1056.4 1056.3 1056.9 1057.2 1059.1 1061.9 1065.6
 1056.1 1053.0 1051.7 1051.2 1051.3 1051.9 1053.2 1055.5 1056.5 6999.0
 6999.0 1046.3 1045.7 1045.5 1045.8 1046.5 1047.8 1049.9 1050.4 6999.0
 6999.0 1039.1 1039.1 1039.5 1040.0 1041.0 1041.6 1042.9 1044.0 6999.0
 6999.0 1031.1 1031.8 1033.3 1034.3 1035.4 1036.5 1037.6 1039.3 1041.6
 6999.0 1021.4 1023.1 1026.8 1028.7 1030.5 1032.1 1033.6 1035.7 6999.0
 1001.2 1009.2 1014.5 1019.6 1023.1 1026.2 1028.6 1030.4 1034.3 6999.0
  994.5 1000.0 1006.7 1012.9 1018.7 1024.3 1029.1 1034.1 1036.1 6999.0
 6999.0 1004.0 1009.0 1013.7 1018.9 1024.0 1029.5 1035.1 1039.3 6999.0
 6999.0 6999.0 1011.9 1015.1 1019.1 1022.4 6999.0 6999.0 6999.0 6999.0

```

- 1 Two header lines of comments.
- 2 Options line.
- 3 IBOUND array.
- 4 Head value assigned to inactive cells.
- 5 Initial head; rounded to the nearest tenth of foot.

Following (enclosed in a border) are the contents of the Discretization input file for test simulation 2; explanations are noted outside of border:

File name: UZFtest2.dis

```

#Test Simulation 2-- Example problem using the UZF1 Package
#Modified from example test problem 1 of SFR1 documentation report
1 15 10 12 1 1 NLAY,NROW,NCOL,NPER,ITMUNI,LENUNI
0
CONSTANT 5.000E+03 DELR
CONSTANT 5.000E+03 DELC
INTERNAL 1.000E+00 (10F7.0) 12 TOP
1105.0 1105.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
1105.0 1095.0 1105.0 0.0 0.0 1100.0 1100.0 1110.0 0.0 0.0
0.0 1100.0 1085.0 1080.0 1078.0 1076.0 1073.0 1090.0 0.0 0.0
1110.0 1100.0 1090.0 1085.0 1076.0 1080.0 1080.0 1070.0 1100.0 0.0
1110.0 1100.0 1085.0 1080.0 1078.0 1074.0 1077.0 1066.0 1075.0 1080.0
1105.0 1095.0 1080.0 1077.0 1073.0 1069.0 1070.0 1063.0 1085.0 1095.0
1105.0 1090.0 1075.0 1072.0 1070.0 1065.0 1065.0 1069.0 1090.0 0000.0
0.0 1080.0 1070.0 1068.0 1063.0 1060.0 1063.0 1067.0 1090.0 0000.0
0.0 1075.0 1065.0 1062.0 1058.0 1052.0 1055.0 1065.0 1090.0 0000.0
0.0 1070.0 1060.0 1055.0 1046.0 1046.0 1044.0 1060.0 1088.0 1100.0
0.0 1055.0 1050.0 1045.0 1041.0 1042.0 1040.0 1050.0 1075.0 0.0
1027.0 1028.0 1028.0 1032.0 1032.0 1033.0 1032.0 1040.0 1060.0 0.0
997.0 1004.0 1008.0 1014.0 1020.0 1027.0 1032.0 1038.0 1050.0 0.0
0.0 1030.0 1040.0 1045.0 1050.0 1050.0 1050.0 1050.0 1044.0 0.0
0.0 0.0 1080.0 1080.0 1080.0 1080.0 0.0 0.0 0.0 0.0
INTERNAL 1.000E+00 (10F7.0) 0 BOT layer 1
1000.0 1000.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
1000.0 900.0 900.0 0.0 0.0 950.0 950.0 950.0 0.0 0.0
0.0 850.0 670.0 680.0 680.0 770.0 770.0 890.0 0.0 0.0
925.0 850.0 650.0 650.0 650.0 680.0 740.0 850.0 950.0 0.0
925.0 800.0 650.0 600.0 600.0 600.0 650.0 720.0 850.0 950.0
925.0 800.0 650.0 600.0 550.0 600.0 650.0 720.0 850.0 970.0
925.0 800.0 650.0 600.0 550.0 600.0 650.0 720.0 950.0 0.0
0.0 850.0 700.0 650.0 570.0 600.0 700.0 850.0 950.0 0.0
0.0 850.0 700.0 650.0 540.0 580.0 700.0 850.0 950.0 0.0
0.0 850.0 700.0 630.0 530.0 580.0 650.0 800.0 900.0 950.0
0.0 850.0 700.0 620.0 580.0 620.0 700.0 800.0 900.0 0.0
900.0 830.0 710.0 640.0 600.0 650.0 700.0 800.0 900.0 0.0
900.0 810.0 750.0 700.0 650.0 700.0 750.0 800.0 900.0 0.0
0.0 950.0 850.0 850.0 850.0 850.0 850.0 850.0 850.0 0.0
0.0 0.0 950.0 950.0 950.0 950.0 0.0 000.0 000.0 0.0
2.628E+06 1 1.00 SS STRESS PERIOD 1
2.628E+06 15 1.10 TR STRESS PERIOD 2
...
2.628E+06 15 1.10 TR STRESS PERIOD 12

```

- 1 Grid characterization data.
- 2 Flags for quasi-3D simulation.
- 3 Row discretization data.
- 4 Column discretization data.
- 5 Top elevations for layer 1 read from following data.
- 6 Bottom elevations for layer 1 read from following data.
- 7 Time step and stress period information.

36 Documentation of the Unsaturated-Zone Flow Package

Following (enclosed in a border) are the contents of the Layer-Property Flow Package input file for test simulation 2; explanations are noted outside of border. Shading indicates that the specific yield specified within the Layer-Property Flow Package is used to calculate the residual water content in the UZF1 Package.

File name: UZFtest2.lpf

```

#Layer-Property Flow Package input for test simulation 2
0      0.      0          ILPFCB, HDRY, NPLPF
1          LAYTYP
0          LAYAVG
1.0      CHANI
0          LAYVKA
0          LAYWET
INTERNAL  2.000E-04 (10F5.0)  0          HY layer  1
10.0  10.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
  2.0  10.0  10.0  0.0  0.0  2.0  2.0  2.0  0.0  0.0
  0.0  2.0  10.0  10.0  2.0  2.0  2.0  2.0  0.0  0.0
  2.0  2.0  2.0  10.0  10.0  10.0  2.0  2.0  2.0  0.0
  2.0  2.0  2.0  10.0  10.0  10.0  10.0  10.0  10.0  10.0
  2.0  2.0  2.0  10.0  10.0  10.0  10.0  10.0  2.0  2.0
  2.0  2.0  2.0  10.0  10.0  10.0  10.0  10.0  2.0  0.0
  0.0  2.0  2.0  10.0  10.0  10.0  10.0  2.0  2.0  0.0
  0.0  2.0  2.0  10.0  10.0  10.0  10.0  2.0  2.0  0.0
  0.0  2.0  2.0  10.0  10.0  10.0  10.0  2.0  2.0  2.0
  0.0  2.0  2.0  10.0  10.0  10.0  10.0  2.0  2.0  0.0
  2.0  2.0  10.0  10.0  10.0  10.0  10.0  2.0  2.0  0.0
10.0  10.0  10.0  10.0  10.0  10.0  10.0  10.0  10.0  0.0
  0.0  2.0  2.0  2.0  2.0  2.0  2.0  2.0  10.0  0.0
  0.0  0.0  2.0  2.0  2.0  2.0  0.0  0.0  0.0  0.0
CONSTANT  1.E-6          VKA
CONSTANT  1.E-6          Ss
INTERNAL  0.2      (10F4.0)  0          Sy
  1.0  1.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
  0.5  1.0  1.0  0.0  0.0  0.5  0.5  0.5  0.0  0.0
  0.0  0.5  1.0  1.0  0.5  0.5  0.5  0.5  0.0  0.0
  0.5  0.5  0.5  1.0  1.0  1.0  0.5  0.5  0.5  0.0
  0.5  0.5  0.5  1.0  1.0  1.0  1.0  1.0  1.0  1.0
  0.5  0.5  0.5  1.0  1.0  1.0  1.0  1.0  0.5  0.5
  0.5  0.5  0.5  1.0  1.0  1.0  1.0  1.0  0.5  0.0
  0.0  0.5  0.5  1.0  1.0  1.0  1.0  0.5  0.5  0.0
  0.0  0.5  0.5  1.0  1.0  1.0  1.0  0.5  0.5  0.0
  0.0  0.5  0.5  1.0  1.0  1.0  1.0  0.5  0.5  0.5
  0.0  0.5  0.5  1.0  1.0  1.0  1.0  0.5  0.5  0.0
  0.5  0.5  1.0  1.0  1.0  1.0  1.0  0.5  0.5  0.0
  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.0  0.0
  0.0  0.5  0.5  0.5  0.5  0.5  0.5  0.5  1.0  0.0
  0.0  0.0  0.5  0.5  0.5  0.5  0.0  0.0  0.0  0.0

```

- 1 Comment lines.
- 2 Flag for cell-by-cell flow terms; head in cell for wet-dry simulations; and flag related to wet-dry simulations.
- 3 Layer type; method for computing transmissivity; and horizontal anisotropy.
- 4 Flag to determine vertical hydraulic conductivity.
- 5 Flag to determine if rewetting is active.
- 6 Hydraulic conductivity data for layer 1 read from following data.
- 7 Ratio of vertical to horizontal hydraulic conductivity.
- 8 Specific storage for layer 1.
- 9 Specific yield for layer 1.

Following (enclosed in a border) are the contents of the Unsaturated-Zone Flow Package input file for test simulation 2; explanations are noted outside of border:

File name: UZFtest2.ufz

```

#UZF Package input for test simulation 2
1 1 1 1 -1 61 25 20 4
INTERNAL          1 (20I4)      6          UZFBND
1 1 0 0 0 0 0 0 0 0
1 1 1 0 0 1 1 1 0 0
0 1 1 1 1 1 1 1 0 0
1 1 1 1 1 1 1 1 1 0
1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 1
0 1 1 1 1 1 1 1 1 0
1 1 1 1 1 1 1 1 1 0
1 1 1 1 1 1 1 1 1 0
0 1 1 1 1 1 1 1 1 0
0 0 1 1 1 1 0 0 0 0
INTERNAL          1 (20I4)      6          IRUNBND
1 1 0 0 0 0 0 0 0 0
1 1 1 0 0 3 3 3 0 0
0 1 1 1 3 3 3 3 0 0
8 8 2 2 2 2 2 3 3 0
8 8 8 8 2 2 2 3 4 4
8 8 8 8 8 2 2 4 4 4
8 8 8 8 8 2 5 5 5 0
0 8 8 8 8 2 5 5 5 0
0 8 8 8 8 6 6 6 6 0
0 8 8 8 8 6 6 6 6 6
0 8 8 8 8 8 6 6 7 0
8 8 8 8 8 8 6 7 7 0
8 8 8 8 8 8 7 7 7 0
0 8 8 8 8 8 7 7 7 0
0 0 8 8 8 8 0 0 0 0
INTERNAL          1.0E-6 (10F4.0)  0          VKS
1.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
1.0 1.0 1.0 0.0 0.0 1.0 1.0 1.0 0.0 0.0
0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0 0.0
1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0
1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0
0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0
0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0
0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0
1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0
1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0
0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0
0.0 0.0 1.0 1.0 1.0 1.0 0.0 0.0 0.0 0.0

```

← 1

← 2

← 3

← 3

← 4

← 4

← 5

← 5

38 Documentation of the Unsaturated-Zone Flow Package

File name: UZFtest2.uzf (continued)

```

CONSTANT      3.5                                BROOKS-COREY EPSILON ← 6
CONSTANT      0.30                               THTS                ← 7
  3  6 65  1                                IUZROW IUZCOL IFTUNIT IUZOPT ← 8
  6  3 66  2                                IUZROW IUZCOL IFTUNIT IUZOPT
10  5 67  3                                IUZROW IUZCOL IFTUNIT IUZOPT
-68                                         IFTUNIT
1
INTERNAL      1.000E-09 (10F4.0)  0          NUZF1 STRESS PERIOD  1 ← 9
INTERNAL      1.000E-09 (10F4.0)  0          FINF  STRESS PERIOD  1 ← 9
  1.0 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 ← 9
  2.0 1.0 2.0 0.0 0.0 8.0 8.0 5.0 0.0 0.0
  0.0 5.0 1.0 1.0 8.0 8.0 5.0 5.0 0.0 0.0
  8.0 5.0 1.0 1.0 1.0 1.0 1.0 1.0 2.0 0.0
  8.0 5.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
  8.0 5.0 5.0 2.0 2.0 1.0 1.0 1.0 1.0 5.0
  8.0 5.0 5.0 2.0 2.0 1.0 1.0 2.0 2.0 0.0
  0.0 5.0 5.0 2.0 2.0 1.0 1.0 2.0 5.0 0.0
  0.0 5.0 5.0 2.0 2.0 1.0 1.0 2.0 5.0 0.0
  0.0 5.0 5.0 2.0 2.0 1.0 1.0 2.0 5.0 8.0
  0.0 1.0 1.0 1.0 1.0 1.0 1.0 2.0 5.0 0.0
  1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 2.0 0.0
  1.0 1.0 2.0 2.0 2.0 2.0 2.0 1.0 1.0 0.0
  0.0 2.0 5.0 5.0 5.0 5.0 5.0 2.0 1.0 0.0
  0.0 0.0 8.0 8.0 8.0 8.0 0.0 0.0 0.0 0.0
1
CONSTANT      5.0E-08                          NUZF2 STRESS PERIOD  1 ←10
1
CONSTANT      15.0                             PET STRESS PERIOD  1 ←10
1
CONSTANT      15.0                             NUZF3 STRESS PERIOD  1 ←11
1
CONSTANT      15.0                             EXTDP STRESS PERIOD  1 ←11
1
CONSTANT      15.0                             NUZF4 STRESS PERIOD  1 ←12
INTERNAL      0.100005 (10F4.0)  0          EXTWC STRESS PERIOD  1 ←12
  1.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 ←12
  2.0 1.0 1.0 0.0 0.0 2.0 2.0 2.0 0.0 0.0
  0.0 2.0 1.0 1.0 2.0 2.0 2.0 2.0 0.0 0.0
  2.0 2.0 2.0 1.0 1.0 1.0 2.0 2.0 2.0 1.0
  2.0 2.0 2.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
  2.0 2.0 2.0 1.0 1.0 1.0 1.0 1.0 2.0 2.0
  2.0 2.0 2.0 1.0 1.0 1.0 1.0 1.0 2.0 0.0
  0.0 2.0 2.0 1.0 1.0 1.0 1.0 2.0 2.0 0.0
  0.0 2.0 2.0 1.0 1.0 1.0 1.0 2.0 2.0 0.0
  0.0 2.0 2.0 1.0 1.0 1.0 1.0 2.0 2.0 2.0
  0.0 2.0 2.0 1.0 1.0 1.0 1.0 2.0 2.0 0.0
  2.0 2.0 1.0 1.0 1.0 1.0 1.0 2.0 2.0 0.0
  1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0
  0.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.0 0.0
  0.0 0.0 2.0 2.0 2.0 2.0 0.0 0.0 0.0 0.0
...
Input data for stress periods 2-11 are not shown.

```

File name: UZFtest2.uzf (continued)

1					NUZF1	STRESS PERIOD 12	←9
INTERNAL	1.000E-9	(10F4.0)	0		FINF	STRESS PERIOD 12	←9
1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
2.0	1.0	2.0	0.0	0.0	8.0	8.0	5.0
0.0	5.0	1.0	1.0	8.0	8.0	5.0	5.0
8.0	5.0	1.0	1.0	1.0	1.0	1.0	2.0
8.0	5.0	1.0	1.0	1.0	1.0	1.0	1.0
8.0	5.0	5.0	2.0	2.0	1.0	1.0	1.0
8.0	5.0	5.0	2.0	2.0	1.0	1.0	2.0
0.0	5.0	5.0	2.0	2.0	1.0	1.0	2.0
0.0	5.0	5.0	2.0	2.0	1.0	1.0	2.0
0.0	5.0	5.0	2.0	2.0	1.0	1.0	2.0
0.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0
1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0
1.0	1.0	2.0	2.0	2.0	2.0	1.0	1.0
0.0	2.0	5.0	5.0	5.0	5.0	2.0	1.0
0.0	0.0	8.0	8.0	8.0	8.0	0.0	0.0
-1					NUZF2	STRESS PERIOD 12	←10
-1					NUZF3	STRESS PERIOD 12	←11
-1					NUZF4	STRESS PERIOD 12	←12

- 1 Comment lines.
 - 2 Flags for unsaturated flow options; print options; number of trailing waves; trailing sets; and the number of unsaturated zone cells for printing time-series data.
 - 3 Boundary array for unsaturated flow.
 - 4 Array that specifies stream segments for adding ground-water discharge to streams.
 - 5 Vertical hydraulic conductivity of the unsaturated zone.
 - 6 Brooks-Corey exponent.
 - 7 Saturated water content. Note--no THTI because the first stress period is steady state.
 - 8 Row and column indices; file unit number; and gage option for printing unsaturated flow results.
 - 9 Applied infiltration rate.
 - 10 Evapotranspiration demand rate.
 - 11 Evapotranspiration extinction depth.
 - 12 Evapotranspiration extinction water content.
-

40 Documentation of the Unsaturated-Zone Flow Package

Following (enclosed in a border) are the contents of the Well Package input file for test simulation 2; explanations are noted outside of border:

File name: UZFtest2.wel

#Well Package input for test simulation 2						←1
10	-1				MXACTW IWELCB	←2
10	0			ITMP NP -- Stress Period	1	←3
	1	6	4	-2.00	Layer Row Column Q	←3
	1	6	5	-2.00		
	1	7	4	-2.00		
	1	7	5	-2.00		
	1	8	4	-2.00		
	1	8	5	-2.00		
	1	9	4	-2.00		
	1	9	5	-2.00		
	1	10	4	-2.00		
	1	10	5	-2.00		
...						
10	0			ITMP NP -- Stress Period	11	←3
	1	6	4	-3.00	Layer Row Column Q	←3
	1	6	5	-3.00		
	1	7	4	-3.00		
	1	7	5	-3.00		
	1	8	4	-3.00		
	1	8	5	-3.00		
	1	9	4	-3.00		
	1	9	5	-3.00		
	1	10	4	-3.00		
	1	10	5	-3.00		
0	0			ITMP NP -- Stress Period	12	←3

¹ Comment lines.

² Maximum number of wells used during stress period; and flag for printing.

³ Number of non-parameter wells read for current stress period; number of parameters used in the current stress period; and layer, row, and column for well and pumping rate.

Following (enclosed in a border) are the contents of the Strongly Implicit Procedure Package input file for test simulation 2; explanations are noted outside of border:

File name: UZFtest2.sip

300	5			MXITER	NPARM	←1
1.0	2.0E-04	1	0.0	1		←2

¹ Maximum iterations; and number of iteration parameters.

² Acceleration parameter; head change criterion; flag for seed; seed; and printout interval for SIP.

Following (enclosed in a border) are the contents of the General-Head Boundary Package input file for test simulation 2; explanations are noted outside of border:

File name: UZFtest2.ghb

2	-1		MXACTB	IGHBCB					← 1
2	0		ITMP	NP	--	Stress	Period	1	← 2
1	13	1	988.0	0.038					← 3
1	14	9	1045.0	0.038					
-1	0		ITMP	NP	--	Stress	Period	2	← 2
...									
-1	0		ITMP	NP	--	Stress	Period	12	← 2

- ¹ Maximum number of general-head boundary cells; and unit number for storing cell-by-cell flow terms.
- ² Read flags for stress period.
- ³ General-head boundary cells for stress period 1.

Following (enclosed in a border) are the contents of the Streamflow-Routing Package input file for test simulation 2; explanations are noted outside of border:

File name: UZFtest2.sfr

#SFR2 Package input for Test simulation 2									
36	8	0	0	1.486	0.000001	-1	81		← 1
1	1	1	1	1	4500.				← 2
1	2	2	1	2	7000.				← 3
1	3	3	1	3	6000.				← 3
1	3	4	1	4	5550.				← 3
1	4	5	2	1	6500.				← 3
1	5	6	2	2	5000.				← 3
1	6	6	2	3	5000.				← 3
1	7	6	2	4	5000.				← 3
1	8	6	2	5	5000.				← 3
1	3	5	3	1	5000.				← 3
1	3	6	3	2	5000.				← 3
1	3	7	3	3	4500.				← 3
1	4	8	3	4	6000.				← 3
1	5	8	3	5	5000.				← 3
1	6	8	3	6	2000.				← 3
1	5	10	4	1	2500.				← 3
1	5	9	4	2	5000.				← 3
1	6	8	4	3	3500.				← 3
1	6	8	5	1	4000.				← 3
1	7	7	5	2	5000.				← 3
1	8	7	5	3	3500.				← 3
1	8	6	5	4	2500.				← 3
1	9	6	6	1	5000.				← 3
1	10	7	6	2	5000.				← 3
1	11	7	6	3	5000.				← 3
1	12	7	6	4	5000.				← 3
1	13	7	6	5	2000.				← 3
1	14	9	7	1	5000.				← 3
1	13	8	7	2	5500.				← 3
1	13	7	7	3	5000.				← 3
1	13	6	8	1	5000.				← 3
1	13	5	8	2	5000.				← 3
1	13	4	8	3	5000.				← 3
1	13	3	8	4	5000.				← 3
1	13	2	8	5	5000.				← 3
1	13	1	8	6	3000.				← 3

42 Documentation of the Unsaturated-Zone Flow Package

File name: UZFtest2.sfr (continued)

8	0	0																					← 4
1	4	2	0	11	25.0	0.0	0.0E-08	0.0E-08															← 5
					0.00003	3.	1095.																← 6
					0.00003	3.	1075.																← 6
					0.5	1.0	2.0	4.0	7.0	10.0	20.0	30.0	50.0	75.0	100.								← 7
					0.25	0.4	0.55	0.7	0.8	0.9	1.1	1.25	1.4	1.7	1.8								← 7
					3.0	3.5	4.2	5.3	7.0	8.5	12.	14.0	17.0	20.0	22.0								← 7
2	1	6	0	0.0	0.0	0.0E-08	0.0E-08	0.030															← 5
					0.00003	3.	1075.	12.															← 6
					0.00003	3.	1050.	12.															← 6
3	0	5	1	0	10.0	0.0	0.0E-08	0.0E-08															← 5
					0.00003	2.	1075.	10.	2.														← 6
					0.00003	2.	1060.	6.	1.														← 6
4	1	5	0	10.0	0.0	0.0E-08	0.0E-08	0.030															← 5
					0.00003	3.	1080.	10.															← 6
					0.00003	3.	1060.	10.															← 6
5	3	6	0	0.0	0.0	0.0E-08	0.0E-08	0.3	0.35	3.8	0.6												← 5
					0.00003	3.	1060.																← 6
					0.00003	3.	1045.																← 6
6	1	8	0	0.0	0.0	0.0E-08	0.0E-08	0.030															← 5
					0.00003	3.	1045.	12.															← 6
					0.00003	3.	1025.	12.															← 6
7	2	8	0	150.0	0.0	0.0E-08	0.0E-08	0.025	0.045														← 5
					0.00006	3.	1040.																← 6
					0.00006	3.	1025.																← 6
					0.0	10.	80.	100.	150.	170.	240.	250.											← 8
					20.	13.	10.	2.	0.	10.	13.	20.											← 8
8	2	0	0	0.0	0.0	0.0E-08	0.0E-08	0.025	0.045														← 5
					0.00006	3.	1025.																← 6
					0.00006	3.	990.																← 6
					0.0	10.	80.	100.	150.	170.	240.	250.											← 8
					25.	17.	13.	4.	0.	10.	16.	20.											← 8
-1	0	0																					← 9
-1	0	0																					← 9

¹ Optional text line for comments.

² Basic stream network description.

³ Stream reach descriptions.

⁴ Read and print flags for stress period.

⁵ General stream segment data.

⁶ Stream segment data for upstream and downstream ends.

⁷ Stream segment data when relation of flow to depth and width read from table.

⁸ Stream segment data for 8-point cross section.

⁹ Read and print flags for stress periods 2–12.

Following (enclosed in a border) are the contents of the Gage package input file test simulation 2; explanations are noted as comments at the end of each record:

File name: UZFtest1.gag

9	NUMGAGE (number of gaging stations)			
1	4	83	4	Stream Segment & Reach #; Output file for Gage 1; Output option
2	3	84	1	Stream Segment & Reach #; Output file for Gage 2; Output option
3	6	85	1	Stream Segment & Reach #; Output file for Gage 3; Output option
4	3	86	1	Stream Segment & Reach #; Output file for Gage 4; Output option
5	4	87	4	Stream Segment & Reach #; Output file for Gage 5; Output option
6	5	88	1	Stream Segment & Reach #; Output file for Gage 6; Output option
7	3	89	4	Stream Segment & Reach #; Output file for Gage 7; Output option
8	6	90	4	Stream Segment & Reach #; Output file for Gage 8; Output option
3	1	91	5	Stream Segment & Reach #; Output file for Gage 9; Output option

Following (enclosed in a border) are the contents of the Output-Control Option input file for test simulation 2.

File name: UZFtest2.oc

```

HEAD PRINT FORMAT 4
DRAWDOWN PRINT FORMAT 0
HEAD SAVE FORMAT (10F10.3) LABEL
HEAD SAVE UNIT 58
PERIOD 1 STEP 1
  PRINT BUDGET
  SAVE BUDGET
PERIOD 1 STEP 5
  PRINT BUDGET
  SAVE BUDGET
PERIOD 1 STEP 10
  PRINT BUDGET
  SAVE BUDGET
PERIOD 1 STEP 15
  PRINT BUDGET
  PRINT HEAD
  SAVE HEAD
  SAVE BUDGE
...
PERIOD 12 STEP 5
  PRINT BUDGET
  SAVE BUDGET
PERIOD 12 STEP 10
  PRINT BUDGET
  SAVE BUDGET
PERIOD 12 STEP 15
  PRINT BUDGET
  PRINT HEAD
  SAVE HEAD
  SAVE BUDGET

```

Listing of Selected Output Files for Test Simulation 2

Following are the contents of the main MODFLOW listing file for test simulation 1:

File name: UZFtest2.lst

```
MODFLOW-2005
U.S. GEOLOGICAL SURVEY MODULAR FINITE-DIFFERENCE GROUND-WATER FLOW MODEL
VERSION 1.00 12/15/2005
```

This model run combines GLOBAL and LIST output into this single file.

GLOBAL LISTING FILE: OUT\UZFtest2.lst

UNIT 9

OPENING DATA\UZFtest2.ba6

FILE TYPE: BAS6 UNIT 75 STATUSES: OLD

FORMAT: FORMATTED ACCESS: SEQUENTIAL

OPENING DATA\UZFtest2.lpf

FILE TYPE: LPF UNIT 7 STATUSES: OLD

FORMAT: FORMATTED ACCESS: SEQUENTIAL

OPENING DATA\UZFtest2.dis

FILE TYPE: DIS UNIT 8 STATUSES: OLD

FORMAT: FORMATTED ACCESS: SEQUENTIAL

OPENING DATA\UZFtest2.sip

FILE TYPE: SIP UNIT 13 STATUS: OLD

FORMAT: FORMATTED ACCESS: SEQUENTIAL

OPENING DATA\UZFtest2.oc

FILE TYPE: OC UNIT 14 STATUSES: OLD

FORMAT: FORMATTED ACCESS: SEQUENTIAL

OPENING DATA\UZFtest2.sfr

FILE TYPE: SFR UNIT 15 STATUSES: OLD

FORMAT: FORMATTED ACCESS: SEQUENTIAL

OPENING DATA\UZFtest2.wel

FILE TYPE: WEL UNIT 16 STATUSES: OLD

FORMAT: FORMATTED ACCESS: SEQUENTIAL

OPENING DATA\UZFtest2.ghb

FILE TYPE: GHB UNIT 17 STATUSES: OLD

FORMAT: FORMATTED ACCESS: SEQUENTIAL

OPENING DATA\UZFtest2.uzf

FILE TYPE: UZF UNIT 19 STATUSES: OLD

FORMAT: FORMATTED ACCESS: SEQUENTIAL

OPENING DATA\UZFtest2.gag

FILE TYPE: GAGE UNIT 32 STATUS: OLD

FORMAT: FORMATTED ACCESS: SEQUENTIAL

```

OPENING OUT\UZFtest2hd.out
FILE TYPE: DATA    UNIT    58    STATUS: UNKNOWN
FORMAT: FORMATTED          ACCESS: SEQUENTIAL

```

```

OPENING OUT\UZFtest2.uzfot
FILE TYPE: DATA(BINARY) UNIT    61    STATUS: UNKNOWN
FORMAT: BINARY          ACCESS: SEQUENTIAL

```

```

OPENING OUT\UZFtest2.uzf1
FILE TYPE: DATA    UNIT    65    STATUS: UNKNOWN
FORMAT: FORMATTED          ACCESS: SEQUENTIAL

```

```

OPENING OUT\UZFtest2.uzf2
FILE TYPE: DATA    UNIT    66    STATUS: UNKNOWN
FORMAT: FORMATTED          ACCESS: SEQUENTIAL

```

```

OPENING OUT\UZFtest2.uzf3
FILE TYPE: DATA    UNIT    67    STATUS: UNKNOWN
FORMAT: FORMATTED          ACCESS: SEQUENTIAL

```

```

OPENING OUT\UZFtest2.uzf4
FILE TYPE: DATA    UNIT    68    STATUS: UNKNOWN
FORMAT: FORMATTED          ACCESS: SEQUENTIAL

```

...

```

DISCRETIZATION INPUT DATA READ FROM UNIT    8
#Test problem 2-- Discretization input
#Example problem using the UZF1 Package
    1 LAYERS        15 ROWS        10 COLUMNS
    12 STRESS PERIOD(S) IN SIMULATION
MODEL TIME UNIT IS SECONDS
MODEL LENGTH UNIT IS FEET
    Confining bed flag for each layer:
    0
                                DELR =   5000.00
                                DELC =   5000.00

```

...

46 Documentation of the Unsaturated-Zone Flow Package

TOP ELEVATION OF LAYER 1

READING ON UNIT 8 WITH FORMAT: (10F7.0)

	1	2	3	4	5	6	7	8	9	10
1	1105.	1105.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	1105.	1095.	1105.	0.000	0.000	1100.	1100.	1110.	0.000	0.000
3	0.000	1100.	1085.	1080.	1078.	1076.	1073.	1090.	0.000	0.000
4	1110.	1100.	1090.	1085.	1076.	1080.	1080.	1070.	1100.	0.000
5	1110.	1100.	1085.	1080.	1078.	1074.	1077.	1066.	1075.	1080.
6	1105.	1095.	1080.	1077.	1073.	1069.	1070.	1063.	1085.	1095.
7	1105.	1090.	1075.	1072.	1070.	1065.	1065.	1069.	1090.	0.000
8	0.000	1080.	1070.	1068.	1063.	1060.	1063.	1067.	1090.	0.000
9	0.000	1075.	1065.	1062.	1058.	1052.	1055.	1065.	1090.	0.000
10	0.000	1070.	1060.	1055.	1046.	1046.	1044.	1060.	1088.	1100.
11	0.000	1055.	1050.	1045.	1041.	1042.	1040.	1050.	1075.	0.000
12	1027.	1028.	1028.	1032.	1032.	1033.	1032.	1040.	1060.	0.000
13	997.0	1004.	1008.	1014.	1020.	1027.	1032.	1038.	1050.	0.000
14	0.000	1030.	1040.	1045.	1050.	1050.	1050.	1050.	1044.	0.000
15	0.000	0.000	1080.	1080.	1080.	1080.	0.000	0.000	0.000	0.000

MODEL LAYER BOTTOM EL. FOR LAYER 1

READING ON UNIT 8 WITH FORMAT: (10F7.0)

	1	2	3	4	5	6	7	8	9	10
1	1000.	1000.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	1000.	900.0	900.0	0.000	0.000	950.0	950.0	950.0	0.000	0.000
3	0.000	850.0	670.0	680.0	680.0	770.0	770.0	890.0	0.000	0.000
4	925.0	850.0	650.0	650.0	650.0	680.0	740.0	850.0	950.0	0.000
5	925.0	800.0	650.0	600.0	600.0	600.0	650.0	720.0	850.0	950.0
6	925.0	800.0	650.0	600.0	550.0	600.0	650.0	720.0	850.0	970.0
7	925.0	800.0	650.0	600.0	550.0	600.0	650.0	720.0	950.0	0.000
8	0.000	850.0	700.0	650.0	570.0	600.0	700.0	850.0	950.0	0.000
9	0.000	850.0	700.0	650.0	540.0	580.0	700.0	850.0	950.0	0.000
10	0.000	850.0	700.0	630.0	530.0	580.0	650.0	800.0	900.0	950.0
11	0.000	850.0	700.0	620.0	580.0	620.0	700.0	800.0	900.0	0.000
12	900.0	830.0	710.0	640.0	600.0	650.0	700.0	800.0	900.0	0.000
13	900.0	810.0	750.0	700.0	650.0	700.0	750.0	800.0	900.0	0.000
14	0.000	950.0	850.0	850.0	850.0	850.0	850.0	850.0	850.0	0.000
15	0.000	0.000	950.0	950.0	950.0	950.0	0.000	0.000	0.000	0.000

STRESS PERIOD	LENGTH	TIME STEPS	MULTIPLIER FOR DELT	SS FLAG
1	2628000.	1	1.000	SS
2	2628000.	15	1.100	TR
3	2628000.	15	1.100	TR
4	2628000.	15	1.100	TR
5	2628000.	15	1.100	TR
6	2628000.	15	1.100	TR
7	2628000.	15	1.100	TR
8	2628000.	15	1.100	TR
9	2628000.	15	1.100	TR
10	2628000.	15	1.100	TR
11	2628000.	15	1.100	TR
12	2628000.	15	1.100	TR

COMBINED STEADY-STATE AND TRANSIENT SIMULATION

...

LPF -- LAYER PROPERTY FLOW PACKAGE, VERSION 7, 5/2/2005

INPUT READ FROM UNIT 7

#Layer-Property Flow Package input for test simulation 2

HEAD AT CELLS THAT CONVERT TO DRY= 0.0000

No named parameters

LAYER FLAGS:

LAYER	LAYTYP	LAYAVG	CHANI	LAYVKA	LAYWET
1	1	0	1.000E+00	0	0

INTERPRETATION OF LAYER FLAGS:

LAYER	LAYER TYPE (LAYTYP)	INTERBLOCK TRANSMISSIVITY (LAYAVG)	HORIZONTAL ANISOTROPY (CHANI)	DATA IN ARRAY VKA (LAYVKA)	WETTABILITY (LAYWET)
1	CONVERTIBLE	HARMONIC	1.000E+00	VERTICAL K	NON-WETTABLE

WETTING CAPABILITY IS NOT ACTIVE IN ANY LAYER

48 Documentation of the Unsaturated-Zone Flow Package

HYD. COND. ALONG ROWS FOR LAYER 1
 READING ON UNIT 7 WITH FORMAT: (10F5.0)

	1	2	3	4	5	6	7	8	9	10
1	2.E-03	2.E-03	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	4.E-04	2.E-03	2.E-03	0.000	0.000	4.E-04	4.E-04	4.E-04	0.000	0.000
3	0.000	4.E-04	2.E-03	2.E-03	4.E-04	4.E-04	4.E-04	4.E-04	0.000	0.000
4	4.E-04	4.E-04	4.E-04	2.E-03	2.E-03	2.E-03	4.E-04	4.E-04	4.E-04	0.000
5	4.E-04	4.E-04	4.E-04	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03
6	4.E-04	4.E-04	4.E-04	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	4.E-04	4.E-04
7	4.E-04	4.E-04	4.E-04	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	4.E-04	0.000
8	0.000	4.E-04	4.E-04	2.E-03	2.E-03	2.E-03	2.E-03	4.E-04	4.E-04	0.000
9	0.000	4.E-04	4.E-04	2.E-03	2.E-03	2.E-03	2.E-03	4.E-04	4.E-04	0.000
10	0.000	4.E-04	4.E-04	2.E-03	2.E-03	2.E-03	2.E-03	4.E-04	4.E-04	4.E-04
11	0.000	4.E-04	4.E-04	2.E-03	2.E-03	2.E-03	2.E-03	4.E-04	4.E-04	0.000
12	4.E-04	4.E-04	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	4.E-04	4.E-04	0.000
13	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	2.E-03	0.000
14	0.000	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	4.E-04	2.E-03	0.000
15	0.000	0.000	4.E-04	4.E-04	4.E-04	4.E-04	0.000	0.000	0.000	0.000

VERTICAL HYD. COND. = 1.000000E-06 FOR LAYER 1
 SPECIFIC STORAGE = 1.000000E-06 FOR LAYER 1

SPECIFIC YIELD FOR LAYER 1
 READING ON UNIT 7 WITH FORMAT: (10F5.0)

	1	2	3	4	5	6	7	8	9	10
1	0.200	0.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.100	0.200	0.200	0.000	0.000	0.100	0.100	0.100	0.000	0.000
3	0.000	0.100	0.200	0.200	0.100	0.100	0.100	0.100	0.000	0.000
4	0.100	0.100	0.100	0.200	0.200	0.200	0.100	0.100	0.100	0.000
5	0.100	0.100	0.100	0.200	0.200	0.200	0.200	0.200	0.200	0.200
6	0.100	0.100	0.100	0.200	0.200	0.200	0.200	0.200	0.100	0.100
7	0.100	0.100	0.100	0.200	0.200	0.200	0.200	0.200	0.100	0.000
8	0.000	0.100	0.100	0.200	0.200	0.200	0.200	0.100	0.100	0.000
9	0.000	0.100	0.100	0.200	0.200	0.200	0.200	0.100	0.100	0.000
10	0.000	0.100	0.100	0.200	0.200	0.200	0.200	0.100	0.100	0.100
11	0.000	0.100	0.100	0.200	0.200	0.200	0.200	0.100	0.100	0.000
12	0.100	0.100	0.200	0.200	0.200	0.200	0.200	0.100	0.100	0.000
13	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.000
14	0.000	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.200	0.000
15	0.000	0.000	0.100	0.100	0.100	0.100	0.000	0.000	0.000	0.000

...


```
UZFl -- UNSATURATED FLOW PACKAGE, VERSION 1.2, 1/14/2006
      INPUT READ FROM UNIT 19
#UZF Package input for test simulation 2
```

...

```
OPTION 1 -- UZF RECHARGE/ET IN TOP LAYER ONLY
```

```
AREAL EXTENT OF UZ FLOW
```

```
READING ON UNIT 19 WITH FORMAT: (20I4)
```

	1	2	3	4	5	6	7	8	9	10
1	1	1	0	0	0	0	0	0	0	0
2	1	1	1	0	0	1	1	1	0	0
3	0	1	1	1	1	1	1	1	0	0
4	1	1	1	1	1	1	1	1	1	0
5	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	0
8	0	1	1	1	1	1	1	1	1	0
9	0	1	1	1	1	1	1	1	1	0
10	0	1	1	1	1	1	1	1	1	1
11	0	1	1	1	1	1	1	1	1	0
12	1	1	1	1	1	1	1	1	1	0
13	1	1	1	1	1	1	1	1	1	0
14	0	1	1	1	1	1	1	1	1	0
15	0	0	1	1	1	1	0	0	0	0

```
ROUTING OVERLAND RUNOFF
```

```
READING ON UNIT 19 WITH FORMAT: (20I4)
```

	1	2	3	4	5	6	7	8	9	10
1	1	1	0	0	0	0	0	0	0	0
2	1	1	1	0	0	3	3	3	0	0
3	0	1	1	1	3	3	3	3	0	0
4	8	8	2	2	2	2	2	3	3	0
5	8	8	8	8	2	2	2	3	4	4
6	8	8	8	8	8	2	2	4	4	4
7	8	8	8	8	8	2	5	5	5	0
8	0	8	8	8	8	2	5	5	5	0
9	0	8	8	8	8	6	6	6	6	0
10	0	8	8	8	8	6	6	6	6	6
11	0	8	8	8	8	8	6	6	7	0
12	8	8	8	8	8	8	6	7	7	0
13	8	8	8	8	8	8	7	7	7	0
14	0	8	8	8	8	8	7	7	7	0
15	0	0	8	8	8	8	0	0	0	0

SATURATED VERTICAL K
 READING ON UNIT 19 WITH FORMAT: (10F4.0)

	1	2	3	4	5	6	7	8	9	10
1	1E-06	1E-06	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	1E-06	1E-06	1E-06	0.000	0.000	1E-06	1E-06	1E-06	0.000	0.000
3	0.000	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	0.000	0.000
4	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	0.000
5	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06
6	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06
7	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	0.000
8	0.000	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	0.000
9	0.000	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	0.000
10	0.000	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06
11	0.000	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	0.000
12	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	0.000
13	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	0.000
14	0.000	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	0.000
15	0.000	0.000	1E-06	1E-06	1E-06	1E-06	0.000	0.000	0.000	0.000

BROOKS-COREY EPSILON = 3.50000

SATURATED WATER CONTENT = 0.300000

WATER CONTENT PROFILES WILL BE PRINTED TO SEPARATE FILES FOR SELECTED MODEL CELLS,
 AND TIME STEPS AS DEFINED BY OUTPUT CONTROL PACKAGE

SELECTED MODEL CELLS ARE:

ROW NUMBER	COLUMN NUMBER	FORTRAN UNIT NUMBER	OUTPUT OPTION
3	6	65	1
6	3	66	2
10	5	67	3
0	0	68	4

...

SOLUTION BY THE STRONGLY IMPLICIT PROCEDURE

 MAXIMUM ITERATIONS ALLOWED FOR CLOSURE = 300
 ACCELERATION PARAMETER = 0.80000
 HEAD CHANGE CRITERION FOR CLOSURE = 0.20000E-03
 SIP HEAD CHANGE PRINTOUT INTERVAL = 1

CALCULATE ITERATION PARAMETERS FROM MODEL CALCULATED WSEED

STRESS PERIOD NO. 1, LENGTH = 2628000.

 NUMBER OF TIME STEPS = 1
 MULTIPLIER FOR DELT = 1.000
 INITIAL TIME STEP SIZE = 2628000.

...

AREAL INFILTRATION RATE

READING ON UNIT 19 WITH FORMAT: (10F4.0)

	1	2	3	4	5	6	7	8	9	10
1	1E-09	2E-09	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	2E-09	1E-09	2E-09	0.000	0.000	8E-09	8E-09	5E-09	0.000	0.000
3	0.000	5E-09	1E-09	1E-09	8E-09	8E-09	5E-09	5E-09	0.000	0.000
4	8E-09	5E-09	1E-09	1E-09	1E-09	1E-09	1E-09	1E-09	2E-09	0.000
5	8E-09	5E-09	1E-09	1E-09	1E-09	1E-09	1E-09	1E-09	1E-09	1E-09
6	8E-09	5E-09	5E-09	2E-09	2E-09	1E-09	1E-09	1E-09	1E-09	5E-09
7	8E-09	5E-09	5E-09	2E-09	2E-09	1E-09	1E-09	1E-09	2E-09	0.000
8	0.000	5E-09	5E-09	2E-09	2E-09	1E-09	1E-09	2E-09	5E-09	0.000
9	0.000	5E-09	5E-09	2E-09	2E-09	1E-09	1E-09	2E-09	5E-09	0.000
10	0.000	5E-09	5E-09	2E-09	2E-09	1E-09	1E-09	2E-09	5E-09	8E-09
11	0.000	1E-09	1E-09	1E-09	1E-09	1E-09	1E-09	2E-09	5E-09	0.000
12	1E-09	1E-09	1E-09	1E-09	1E-09	1E-09	1E-09	1E-09	2E-09	0.000
13	1E-09	1E-09	2E-09	2E-09	2E-09	2E-09	2E-09	1E-09	1E-09	0.000
14	0.000	2E-09	5E-09	5E-09	5E-09	5E-09	5E-09	2E-09	1E-09	0.000
15	0.000	0.000	8E-09	8E-09	8E-09	8E-09	0.000	0.000	0.000	0.000

ET DEMAND RATE = 5.000000E-08

ET EXTINCTION DEPTH = 15.0000

EXTINCTION WATER CONTENT

READING ON UNIT 19 WITH FORMAT: (10F4.0)

	1	2	3	4	5	6	7	8	9	10
1	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.20	0.10	0.10	0.00	0.00	0.20	0.20	0.20	0.00	0.00
3	0.00	0.20	0.10	0.10	0.20	0.20	0.20	0.20	0.00	0.00
4	0.20	0.20	0.20	0.10	0.10	0.10	0.20	0.20	0.20	0.10
5	0.20	0.20	0.20	0.10	0.10	0.10	0.10	0.10	0.10	0.10
6	0.20	0.20	0.20	0.10	0.10	0.10	0.10	0.10	0.20	0.20
7	0.20	0.20	0.20	0.10	0.10	0.10	0.10	0.10	0.20	0.00
8	0.00	0.20	0.20	0.10	0.10	0.10	0.10	0.20	0.20	0.00
9	0.00	0.20	0.20	0.10	0.10	0.10	0.10	0.20	0.20	0.00
10	0.00	0.20	0.20	0.10	0.10	0.10	0.10	0.20	0.20	0.20
11	0.00	0.20	0.20	0.10	0.10	0.10	0.10	0.20	0.20	0.00
12	0.20	0.20	0.10	0.10	0.10	0.10	0.10	0.20	0.20	0.00
13	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00
14	0.00	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.00
15	0.00	0.00	0.20	0.20	0.20	0.20	0.00	0.00	0.00	0.00

52 Documentation of the Unsaturated-Zone Flow Package

SOLVING FOR HEAD

AVERAGE SEED = 0.00926840

MINIMUM SEED = 0.00187768

5 ITERATION PARAMETERS CALCULATED FROM AVERAGE SEED:

0.000000E+00 0.689722E+00 0.903727E+00 0.970129E+00 0.990732E+00

27 ITERATIONS FOR TIME STEP 1 IN STRESS PERIOD 1

...

OUTPUT CONTROL FOR STRESS PERIOD 1 TIME STEP 1

PRINT BUDGET

SAVE BUDGET

	WELLS	PERIOD	1	STEP	1				
WELL	1	LAYER	1	ROW	6	COL	4	RATE	-2.00000
WELL	2	LAYER	1	ROW	6	COL	5	RATE	-2.00000
WELL	3	LAYER	1	ROW	7	COL	4	RATE	-2.00000
WELL	4	LAYER	1	ROW	7	COL	5	RATE	-2.00000
WELL	5	LAYER	1	ROW	8	COL	4	RATE	-2.00000
WELL	6	LAYER	1	ROW	8	COL	5	RATE	-2.00000
WELL	7	LAYER	1	ROW	9	COL	4	RATE	-2.00000
WELL	8	LAYER	1	ROW	9	COL	5	RATE	-2.00000
WELL	9	LAYER	1	ROW	10	COL	4	RATE	-2.00000
WELL	10	LAYER	1	ROW	10	COL	5	RATE	-2.00000

HEAD DEP BOUNDS	PERIOD	1	STEP	1					
BOUNDARY	1	LAYER	1	ROW	13	COL	1	RATE	-0.262024
BOUNDARY	2	LAYER	1	ROW	14	COL	9	RATE	0.209432

UBDSV3 SAVING " GW ET " ON UNIT 61 AT TIME STEP 1, STRESS PERIOD 1
 UBDSV3 SAVING " UZF RECHARGE " ON UNIT 61 AT TIME STEP 1, STRESS PERIOD 1
 UBDSV3 SAVING " SURFACE LEAKAGE " ON UNIT 61 AT TIME STEP 1, STRESS PERIOD 1

UNSATURATED ZONE PACKAGE VOLUMETRIC BUDGET FOR TIME STEP 1 STRESS PERIOD 1

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
---		---	
INFILTRATION	22272299.5597	INFILTRATION =	8.4750
OUT:		OUT:	
----		----	
UZ ET =	0.0000E+00	UZ ET =	0.0000E+00
UZF RECHARGE =	22272299.5597	UZF RECHARGE =	8.4750
IN - OUT =	0.0000E+00	IN - OUT =	0.0000E+00
STORAGE:		STORAGE:	
-----		-----	
STORAGE CHANGE =	0.0000E+00	STORAGE CHANGE =	0.0000E+00

PERCENT DISCREPANCY IS DIFFERENCE BETWEEN IN-OUT MINUS CHANGE IN STORAGE
 DIVIDED BY THE AVERAGE OF IN AND OUT TIMES 100

PERCENT DISCREPANCY = 0.00 PERCENT DISCREPANCY = 0.00

...

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 1

CUMULATIVE VOLUMES		L**3	RATES FOR THIS TIME STEP		L**3/T
IN:			IN:		
---			---		
STORAGE =		0.0000	STORAGE =		0.0000
CONSTANT HEAD =		0.0000	CONSTANT HEAD =		0.0000
WELLS =		0.0000	WELLS =		0.0000
HEAD DEP BOUNDS =		551734.6875	HEAD DEP BOUNDS =		0.2099
UZF RECHARGE =		22272300.0000	UZF RECHARGE =		8.4750
GW ET =		0.0000	GW ET =		0.0000
SURFACE LEAKAGE =		0.0000	SURFACE LEAKAGE =		0.0000
STREAM LEAKAGE =		116098504.0000	STREAM LEAKAGE =		44.1775
TOTAL IN =		138922544.0000	TOTAL IN =		52.8625
OUT:			OUT:		
----			----		
STORAGE =		0.0000	STORAGE =		0.0000
CONSTANT HEAD =		0.0000	CONSTANT HEAD =		0.0000
WELLS =		52560000.0000	WELLS =		20.0000
HEAD DEP BOUNDS =		686396.1875	HEAD DEP BOUNDS =		0.2612
UZF RECHARGE =		0.0000	UZF RECHARGE =		0.0000
GW ET =		53700992.0000	GW ET =		20.4342
SURFACE LEAKAGE =		0.0000	SURFACE LEAKAGE =		0.0000
STREAM LEAKAGE =		31978764.0000	STREAM LEAKAGE =		12.1685
TOTAL OUT =		138926160.0000	TOTAL OUT =		52.8638
IN - OUT =		-3616.0000	IN - OUT =		-1.3771E-03
PERCENT DISCREPANCY =		0.00	PERCENT DISCREPANCY =		0.00

TIME SUMMARY AT END OF TIME STEP 1 IN STRESS PERIOD 1

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	2.62800E+06	43800.	730.00	30.417	8.32763E-02
STRESS PERIOD TIME	2.62800E+06	43800.	730.00	30.417	8.32763E-02
TOTAL TIME	2.62800E+06	43800.	730.00	30.417	8.32763E-02

54 Documentation of the Unsaturated-Zone Flow Package

...

STRESS PERIOD NO. 3, LENGTH = 2628000.

NUMBER OF TIME STEPS = 15
 MULTIPLIER FOR DELT = 1.100
 INITIAL TIME STEP SIZE = 82713.07

...

AREAL INFILTRATION RATE										
READING ON UNIT 19 WITH FORMAT: (10F4.0)										
	1	2	3	4	5	6	7	8	9	10
1	1E-08	2E-08	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	2E-08	1E-08	2E-08	0.000	0.000	8E-08	8E-08	5E-08	0.000	0.000
3	0.000	5E-08	1E-08	1E-08	8E-08	8E-08	5E-08	5E-08	0.000	0.000
4	8E-08	5E-08	1E-08	1E-08	1E-08	1E-08	1E-08	1E-08	2E-08	0.000
5	8E-08	5E-08	1E-08	1E-08	1E-08	1E-08	1E-08	1E-08	1E-08	1E-08
6	8E-08	5E-08	5E-08	2E-08	2E-08	1E-08	1E-08	1E-08	1E-08	5E-08
7	8E-08	5E-08	5E-08	2E-08	2E-08	1E-08	1E-08	2E-08	2E-08	0.000
8	0.000	5E-08	5E-08	2E-08	2E-08	1E-08	1E-08	2E-08	5E-08	0.000
9	0.000	5E-08	5E-08	2E-08	2E-08	1E-08	1E-08	2E-08	5E-08	0.000
10	0.000	5E-08	5E-08	2E-08	2E-08	1E-08	1E-08	2E-08	5E-08	8E-08
11	0.000	1E-08	1E-08	1E-08	1E-08	1E-08	1E-08	2E-08	5E-08	0.000
12	1E-08	1E-08	1E-08	1E-08	1E-08	1E-08	1E-08	1E-08	2E-08	0.000
13	1E-08	1E-08	2E-08	2E-08	2E-08	2E-08	2E-08	1E-08	1E-08	0.000
14	0.000	2E-08	5E-08	5E-08	5E-08	5E-08	5E-08	2E-08	1E-08	0.000
15	0.000	0.000	8E-08	8E-08	8E-08	8E-08	0.000	0.000	0.000	0.000

USING ET DEMAND RATE FROM PREVIOUS STRESS PERIOD. CURRENT PERIOD IS: 3
 USING ET EXTINCTION DEPTH FROM PREVIOUS STRESS PERIOD. CURRENT PERIOD IS: 3
 USING EXTINCTION WATER CONTENT FROM PREVIOUS STRESS PERIOD.
 CURRENT PERIOD IS: 3

...

```

UBDSV3 SAVING "      GW ET      " ON UNIT 61 AT TIME STEP 15, STRESS PERIOD 3
UBDSV3 SAVING "    UZF RECHARGE  " ON UNIT 61 AT TIME STEP 15, STRESS PERIOD 3
UBDSV3 SAVING "  SURFACE LEAKAGE " ON UNIT 61 AT TIME STEP 15, STRESS PERIOD 3
  
```

UNSATURATED ZONE PACKAGE VOLUMETRIC BUDGET FOR TIME STEP 15 STRESS PERIOD 3

```

-----
CUMULATIVE VOLUMES      L**3      RATES FOR THIS TIME STEP      L**3/T
-----
      IN:
      ---
      INFILTRATION = 423173664.0228      INFILTRATION = 84.7500

      OUT:
      ----
      UZF ET = 640655272.4093      UZF ET = 108.5681
      UZF RECHARGE = 85558487.2589      UZF RECHARGE = 15.9795
      IN - OUT = -303040095.6455      IN - OUT = -39.7976
      STORAGE:
      -----
      STORAGE CHANGE = -302943758.7172      STORAGE CHANGE = -39.7629
PERCENT DISCREPANCY IS DIFFERENCE BETWEEN IN-OUT MINUS CHANGE IN STORAGE
DIVIDED BY THE AVERAGE OF IN AND OUT TIMES 100
PERCENT DISCREPANCY = 0.00      PERCENT DISCREPANCY = -0.03
  
```

56 Documentation of the Unsaturated-Zone Flow Package

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 15 IN STRESS PERIOD 3

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
---		---	
STORAGE =	338021.0312	STORAGE =	0.2042
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	0.0000	WELLS =	0.0000
HEAD DEP BOUNDS =	1648010.1250	HEAD DEP BOUNDS =	0.2083
UZF RECHARGE =	85558496.0000	UZF RECHARGE =	15.9795
GW ET =	0.0000	GW ET =	0.0000
SURFACE LEAKAGE =	0.0000	SURFACE LEAKAGE =	0.0000
STREAM LEAKAGE =	344701152.0000	STREAM LEAKAGE =	43.2896
TOTAL IN =	432245664.0000	TOTAL IN =	59.6816
OUT:		OUT:	
----		----	
STORAGE =	70915512.0000	STORAGE =	21.0468
CONSTANT HEAD =	0.0000	CONSTANT HEAD =	0.0000
WELLS =	131400000.0000	WELLS =	10.0000
HEAD DEP BOUNDS =	2065964.2500	HEAD DEP BOUNDS =	0.2630
UZF RECHARGE =	0.0000	UZF RECHARGE =	0.0000
GW ET =	126929936.0000	GW ET =	14.6589
SURFACE LEAKAGE =	0.0000	SURFACE LEAKAGE =	0.0000
STREAM LEAKAGE =	100745112.0000	STREAM LEAKAGE =	13.6927
TOTAL OUT =	432056512.0000	TOTAL OUT =	59.6614
IN - OUT =	189152.0000	IN - OUT =	2.0271E-02
PERCENT DISCREPANCY =	0.04	PERCENT DISCREPANCY =	0.03

TIME SUMMARY AT END OF TIME STEP	15 IN STRESS PERIOD 3				
	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	3.14103E+05	5235.0	87.251	3.6354	9.95332E-03
STRESS PERIOD TIME	2.62800E+06	43800.	730.00	30.417	8.32763E-02
TOTAL TIME	7.88400E+06	1.31400E+05	2190.0	91.250	0.24983

...

STRESS PERIOD NO. 12, LENGTH = 2628000.

 NUMBER OF TIME STEPS = 15
 MULTIPLIER FOR DELT = 1.100
 INITIAL TIME STEP SIZE = 82713.07

...


```

AREAL INFILTRATION RATE
READING ON UNIT 19 WITH FORMAT: (10F4.0)

      1      2      3      4      5      6      7      8      9      10
.....
1  1E-09  2E-09  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
2  2E-09  1E-09  2E-09  0.000  0.000  8E-09  8E-09  5E-09  0.000  0.000
3  0.000  5E-09  1E-09  1E-09  8E-09  8E-09  5E-09  5E-09  0.000  0.000
4  8E-09  5E-09  1E-09  1E-09  1E-09  1E-09  1E-09  1E-09  2E-09  0.000
5  8E-09  5E-09  1E-09  1E-09  1E-09  1E-09  1E-09  1E-09  1E-09  1E-09
6  8E-09  5E-09  5E-09  2E-09  2E-09  1E-09  1E-09  1E-09  1E-09  5E-09
7  8E-09  5E-09  5E-09  2E-09  2E-09  1E-09  1E-09  2E-09  2E-09  0.000
8  0.000  5E-09  5E-09  2E-09  2E-09  1E-09  1E-09  2E-09  5E-09  0.000
9  0.000  5E-09  5E-09  2E-09  2E-09  1E-09  1E-09  2E-09  5E-09  0.000
10 0.000  5E-09  5E-09  2E-09  2E-09  1E-09  1E-09  2E-09  5E-09  8E-09
11 0.000  1E-09  1E-09  1E-09  1E-09  1E-09  1E-09  2E-09  5E-09  0.000
12 1E-09  1E-09  1E-09  1E-09  1E-09  1E-09  1E-09  1E-09  2E-09  0.000
13 1E-09  1E-09  2E-09  2E-09  2E-09  2E-09  2E-09  1E-09  1E-09  0.000
14 0.000  2E-09  5E-09  5E-09  5E-09  5E-09  5E-09  2E-09  1E-09  0.000
15 0.000  0.000  8E-09  8E-09  8E-09  8E-09  0.000  0.000  0.000  0.000

USING ET DEMAND RATE FROM PREVIOUS STRESS PERIOD. CURRENT PERIOD IS: 12
USING ET EXTINCTION DEPTH FROM PREVIOUS STRESS PERIOD. CURRENT PERIOD IS: 12
USING EXTINCTION WATER CONTENT FROM PREVIOUS STRESS PERIOD. CURRENT PERIOD IS: 12

```

SOLVING FOR HEAD

7 ITERATIONS FOR TIME STEP 1 IN STRESS PERIOD 12

...

OUTPUT CONTROL FOR STRESS PERIOD 12 TIME STEP 15

- PRINT BUDGET
- PRINT HEAD FOR ALL LAYERS
- SAVE HEAD FOR ALL LAYERS
- SAVE BUDGET

58 Documentation of the Unsaturated-Zone Flow Package

UNSATURATED ZONE PACKAGE VOLUMETRIC BUDGET FOR TIME STEP 15 STRESS PERIOD 12

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
INFILTRATION =	1536788572.4216	INFILTRATION =	8.4750
OUT:		OUT:	
UZF ET =	2130532183.6154	UZF ET =	29.5398
UZF RECHARGE =	386682175.9374	UZF RECHARGE =	11.2488
IN - OUT =	-980425787.1312	IN - OUT =	-32.3136
STORAGE:		STORAGE:	
STORAGE CHANGE =	-980298516.5008	STORAGE CHANGE =	-32.4115

PERCENT DISCREPANCY IS DIFFERENCE BETWEEN IN-OUT MINUS CHANGE IN STORAGE DIVIDED BY THE AVERAGE OF IN AND OUT TIMES 100

PERCENT DISCREPANCY = 0.00 PERCENT DISCREPANCY = 0.24

...

HEAD IN LAYER 1 AT END OF TIME STEP 15 IN STRESS PERIOD 12

	1	2	3	4	5	6	7	8	9	10
1	1092.37	1088.61	6999.00	6999.00	6999.00	6999.00	6999.00	6999.00	6999.00	6999.00
2	1089.01	1085.68	1079.29	6999.00	6999.00	1073.62	1072.54	1070.97	6999.00	6999.00
3	6999.00	1077.38	1074.52	1070.40	1070.89	1069.73	1068.19	1067.88	6999.00	6999.00
4	1069.50	1068.75	1067.10	1063.67	1062.51	1061.22	1061.78	1064.46	1063.91	6999.00
5	1065.39	1061.87	1059.39	1057.54	1057.25	1057.77	1057.60	1059.59	1063.01	1065.39
6	1060.65	1056.02	1053.11	1051.72	1052.00	1053.31	1054.52	1056.79	1059.55	1063.65
7	1056.94	1050.38	1047.40	1046.23	1046.83	1048.45	1050.78	1053.10	1054.36	6999.00
8	6999.00	1042.92	1041.40	1040.73	1041.58	1043.41	1045.19	1047.53	1049.31	6999.00
9	6999.00	1035.92	1035.34	1035.29	1036.46	1038.47	1039.35	1041.08	1043.88	6999.00
10	6999.00	1028.78	1029.18	1030.18	1031.62	1033.35	1034.61	1036.48	1040.18	1045.29
11	6999.00	1019.85	1021.63	1025.14	1027.16	1029.21	1030.68	1032.95	1036.39	6999.00
12	1001.20	1008.88	1014.17	1019.07	1022.71	1025.93	1028.31	1031.01	1034.88	6999.00
13	994.91	1000.19	1006.90	1013.08	1018.90	1024.47	1029.24	1034.27	1036.38	6999.00
14	6999.00	1005.79	1011.36	1016.09	1021.14	1025.87	1030.11	1035.21	1039.48	6999.00
15	6999.00	6999.00	1018.95	1022.40	1026.57	1029.77	6999.00	6999.00	6999.00	6999.00

HEAD WILL BE SAVED ON UNIT 58 AT END OF TIME STEP 15, STRESS PERIOD 12

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 15 IN STRESS PERIOD 12

CUMULATIVE VOLUMES		L**3	RATES FOR THIS TIME STEP		L**3/T
-----			-----		
IN:			IN:		
---			---		
STORAGE =	128218360.0000		STORAGE =	0.8641	
CONSTANT HEAD =	0.0000		CONSTANT HEAD =	0.0000	
WELLS =	0.0000		WELLS =	0.0000	
HEAD DEP BOUNDS =	6590192.5000		HEAD DEP BOUNDS =	0.2096	
UZF RECHARGE =	386682176.0000		UZF RECHARGE =	11.2488	
GW ET =	0.0000		GW ET =	0.0000	
SURFACE LEAKAGE =	0.0000		SURFACE LEAKAGE =	0.0000	
STREAM LEAKAGE =	1361713920.0000		STREAM LEAKAGE =	43.4029	
TOTAL IN =	1883204608.0000		TOTAL IN =	55.7253	
OUT:			OUT:		
----			----		
STORAGE =	503634528.0000		STORAGE =	22.7426	
CONSTANT HEAD =	0.0000		CONSTANT HEAD =	0.0000	
WELLS =	394199968.0000		WELLS =	0.0000	
HEAD DEP BOUNDS =	8307182.0000		HEAD DEP BOUNDS =	0.2626	
UZF RECHARGE =	0.0000		UZF RECHARGE =	0.0000	
GW ET =	553775360.0000		GW ET =	19.6268	
SURFACE LEAKAGE =	48913.4141		SURFACE LEAKAGE =	0.0000	
STREAM LEAKAGE =	422406880.0000		STREAM LEAKAGE =	13.0608	
TOTAL OUT =	1882323968.0000		TOTAL OUT =	55.2894	
IN - OUT =	880640.0000		IN - OUT =	3.2516E-02	
PERCENT DISCREPANCY =	0.05		PERCENT DISCREPANCY =	0.06	

TIME SUMMARY AT END OF TIME STEP		15 IN STRESS PERIOD				12
	SECONDS	MINUTES	HOURS	DAYS	YEARS	

TIME STEP LENGTH	3.14103E+05	5235.0	87.251	3.6354	9.95332E-03	
STRESS PERIOD TIME	2.62800E+06	43800.	730.00	30.417	8.32763E-02	
TOTAL TIME	3.15360E+07	5.25600E+05	8760.0	365.00	0.99932	

Following are the abridged contents of the UZFtest2.uzf1 output file for test simulation 2.

LOCATION OF SPECIFIED CELL FOR PRINTING VOLUMES IN UNSATURATED ZONE:

GAGE	1	ROW, COLUMN	3,	6	INITIAL LAYER	ASSIGNMENT	1		
LAYER	TIME	GW HEAD	UZ THICK.	CUM. INFILT.	CUM. RECHARGE	TOTAL STORAGE	CHANGE	SURF. LEAK.	
1	2.6280E+06	1.0692E+03	6.2800E+00	5.2560E+05	5.2560E+05	0.0000E+00	0.0000E+00	0.0	
1	2.7107E+06	1.0692E+03	6.2673E+00	6.5794E+05	5.5014E+05	4.0163E+06	6.4600E+04	0.0	
1	2.8017E+06	1.0692E+03	6.2543E+00	8.0352E+05	5.7573E+05	4.0889E+06	1.3717E+05	0.0	
1	2.9018E+06	1.0693E+03	6.2411E+00	9.6365E+05	6.0231E+05	4.1704E+06	2.1867E+05	0.0	
1	3.0119E+06	1.0693E+03	6.2280E+00	1.1398E+06	6.2958E+05	4.2621E+06	3.1040E+05	0.0	
1	3.1330E+06	1.0693E+03	6.2151E+00	1.3336E+06	6.5746E+05	4.3653E+06	4.1356E+05	0.0	
1	3.2662E+06	1.0693E+03	6.2025E+00	1.5467E+06	6.8581E+05	4.4812E+06	5.2950E+05	0.0	
1	3.4127E+06	1.0693E+03	6.1905E+00	1.7811E+06	7.1424E+05	4.6116E+06	6.5992E+05	0.0	
1	3.5739E+06	1.0693E+03	6.1790E+00	2.0390E+06	7.4267E+05	4.7581E+06	8.0640E+05	0.0	
1	3.7512E+06	1.0693E+03	6.1686E+00	2.3227E+06	7.7007E+05	4.9232E+06	9.7154E+05	0.0	
1	3.9462E+06	1.0693E+03	6.1594E+00	2.6348E+06	7.9663E+05	5.1086E+06	1.1569E+06	0.0	
1	4.1608E+06	1.0693E+03	6.1514E+00	2.9780E+06	8.2207E+05	5.3165E+06	1.3648E+06	0.0	
1	4.3968E+06	1.0694E+03	6.1446E+00	3.3556E+06	8.4609E+05	5.5492E+06	1.5975E+06	0.0	
1	4.6563E+06	1.0694E+03	6.1393E+00	3.7710E+06	8.6799E+05	5.8098E+06	1.8581E+06	0.0	
1	4.9419E+06	1.0694E+03	6.1353E+00	4.2278E+06	8.8781E+05	6.1009E+06	2.1492E+06	0.0	
1	5.2560E+06	1.0694E+03	6.1330E+00	4.7304E+06	9.0511E+05	6.4256E+06	2.4739E+06	0.0	
1	5.3387E+06	1.0694E+03	6.1328E+00	4.8958E+06	9.0892E+05	6.5450E+06	2.5933E+06	0.0	
1	5.4297E+06	1.0694E+03	6.1326E+00	5.0778E+06	9.1282E+05	6.6765E+06	2.7248E+06	0.0	
1	5.5298E+06	1.0694E+03	6.0730E+00	5.2780E+06	1.0730E+06	6.6659E+06	2.7142E+06	0.0	
1	5.6399E+06	1.0695E+03	6.0060E+00	5.4981E+06	1.2621E+06	6.6418E+06	2.6901E+06	0.0	
1	5.7610E+06	1.0696E+03	5.9388E+00	5.7403E+06	1.4641E+06	6.6221E+06	2.6704E+06	0.0	
1	5.8942E+06	1.0696E+03	5.8708E+00	6.0068E+06	1.6826E+06	6.6048E+06	2.6531E+06	0.0	
...									
1	2.6363E+07	1.0699E+03	5.6163E+00	3.5232E+07	2.5589E+07	3.5513E+06	-4.0039E+05	0.0	
1	2.6454E+07	1.0699E+03	5.6203E+00	3.5250E+07	2.5598E+07	3.5173E+06	-4.3437E+05	0.0	
1	2.6554E+07	1.0699E+03	5.6241E+00	3.5270E+07	2.5610E+07	3.4793E+06	-4.7243E+05	0.0	
1	2.6664E+07	1.0699E+03	5.6283E+00	3.5292E+07	2.5622E+07	3.4374E+06	-5.1433E+05	0.0	
1	2.6785E+07	1.0699E+03	5.6326E+00	3.5316E+07	2.5635E+07	3.3911E+06	-5.6061E+05	0.0	
1	2.6918E+07	1.0699E+03	5.6370E+00	3.5343E+07	2.5651E+07	3.3399E+06	-6.1183E+05	0.0	
1	2.7065E+07	1.0699E+03	5.6415E+00	3.5372E+07	2.5668E+07	3.2834E+06	-6.6827E+05	0.0	
1	2.7226E+07	1.0699E+03	5.6459E+00	3.5404E+07	2.5686E+07	3.2210E+06	-7.3068E+05	0.0	
1	2.7403E+07	1.0698E+03	5.6509E+00	3.5440E+07	2.5706E+07	3.1534E+06	-7.9825E+05	0.0	
1	2.7598E+07	1.0698E+03	5.6571E+00	3.5479E+07	2.5724E+07	3.0820E+06	-8.6971E+05	0.0	
1	2.7813E+07	1.0698E+03	5.6646E+00	3.5522E+07	2.5741E+07	3.0069E+06	-9.4475E+05	0.0	
1	2.8049E+07	1.0698E+03	5.6733E+00	3.5569E+07	2.5756E+07	2.9278E+06	-1.0239E+06	0.0	
1	2.8308E+07	1.0698E+03	5.6832E+00	3.5621E+07	2.5768E+07	2.8444E+06	-1.1073E+06	0.0	
1	2.8594E+07	1.0698E+03	5.6939E+00	3.5678E+07	2.5779E+07	2.7557E+06	-1.1960E+06	0.0	
1	2.8908E+07	1.0698E+03	5.7052E+00	3.5741E+07	2.5787E+07	2.6609E+06	-1.2908E+06	0.0	
1	2.8991E+07	1.0698E+03	5.7083E+00	3.5757E+07	2.5789E+07	2.6365E+06	-1.3152E+06	0.0	
1	2.9082E+07	1.0698E+03	5.7116E+00	3.5776E+07	2.5790E+07	2.6097E+06	-1.3420E+06	0.0	
1	2.9182E+07	1.0698E+03	5.7151E+00	3.5796E+07	2.5792E+07	2.5804E+06	-1.3713E+06	0.0	
1	2.9292E+07	1.0698E+03	5.7189E+00	3.5818E+07	2.5793E+07	2.5484E+06	-1.4033E+06	0.0	
1	2.9413E+07	1.0698E+03	5.7230E+00	3.5842E+07	2.5795E+07	2.5134E+06	-1.4383E+06	0.0	
1	2.9546E+07	1.0698E+03	5.7272E+00	3.5868E+07	2.5796E+07	2.4750E+06	-1.4767E+06	0.0	
1	2.9693E+07	1.0698E+03	5.7318E+00	3.5898E+07	2.5798E+07	2.4330E+06	-1.5187E+06	0.0	
1	2.9854E+07	1.0698E+03	5.7365E+00	3.5930E+07	2.5799E+07	2.3870E+06	-1.5647E+06	0.0	
1	3.0031E+07	1.0698E+03	5.7417E+00	3.5965E+07	2.5800E+07	2.3368E+06	-1.6149E+06	0.0	
1	3.0226E+07	1.0698E+03	5.7470E+00	3.6004E+07	2.5800E+07	2.2818E+06	-1.6698E+06	0.0	
1	3.0441E+07	1.0697E+03	5.7525E+00	3.6047E+07	2.5801E+07	2.2215E+06	-1.7302E+06	0.0	
1	3.0677E+07	1.0697E+03	5.7579E+00	3.6095E+07	2.5801E+07	2.1552E+06	-1.7965E+06	0.0	
1	3.0936E+07	1.0697E+03	5.7635E+00	3.6146E+07	2.5801E+07	2.0825E+06	-1.8692E+06	0.0	
1	3.1222E+07	1.0697E+03	5.7691E+00	3.6204E+07	2.5801E+07	2.0024E+06	-1.9493E+06	0.0	
1	3.1536E+07	1.0697E+03	5.7746E+00	3.6266E+07	2.5801E+07	1.9142E+06	-2.0375E+06	0.0	

Following are the abridged contents of the UZFtest2.uzf3 output file for test simulation 2.

LOCATION OF SPECIFIED CELL FOR PRINTING VOLUMES IN UNSATURATED ZONE:

GAGE 3 ROW, COLUMN 10, 5 INITIAL LAYER ASSIGNMENT 1

LAYER	TIME	GW HEAD	UZ THICK.	DEPTH	WATER CONT.
...					
1	3.1536E+07	1031.6185	13.8814	0.34702721	0.13035826
				0.69405442	0.12027895
				1.04108167	0.12133145
				1.38810885	0.11728376
				1.73513603	0.11856612
				2.08216333	0.11264190
				2.42919040	0.11277605
				2.77621770	0.10000502
				3.12324476	0.10075631
				3.47027206	0.10229551
				3.81729937	0.10405234
				4.16432667	0.10543815
				4.51135349	0.10665397
				4.85838079	0.10000500
				5.20540810	0.10000503
				5.55243540	0.10000505
				5.89946270	0.10000508
				6.24648952	0.10000493
				6.59351683	0.10000496
				6.94054413	0.10000499
				7.28757143	0.10000502
				7.63459873	0.10000505
				7.98162556	0.10000508
				8.32865334	0.10000493
				8.67568016	0.10000496
				9.02270699	0.10000498
				9.36973476	0.10000501
				9.71676159	0.10000504
				10.06378937	0.10000506
				10.41081619	0.10000509
				10.75784302	0.10000512
				11.10487080	0.10000514
				11.45189762	0.10000517
				11.79892540	0.10000485
				12.14595222	0.10000488
				12.49297905	0.10000491
				12.84000683	0.10000493
				13.18703365	0.10000496
				13.53406143	0.10000499
				13.88143539	0.10000001

Following are the abridged contents of the UZF2test2.uzf4 output file for test simulation 2.

UNSATURATED MASS BALANCE COMPONENTS FOR ENTIRE MODEL

TIME	APPLIED		ACTUAL		SURFACE		ET		UZ STORAGE	
	INFILT.	RUNOFF	INFILT.	LEAKAGE	UZ	GW	CHANGE	RECHARGE		
2.62E+06	8.47E+00	0.0	8.47E+00	0.0	0.00E+00	2.04E+01	0.00E+00	8.47E+00		
2.71E+06	6.78E+01	0.0	6.78E+01	0.0	1.24E+02	1.35E+01	-6.64E+01	9.70E+00		
2.80E+06	6.78E+01	0.0	6.78E+01	0.0	1.24E+02	1.35E+01	-6.63E+01	9.61E+00		
...										
5.25E+06	6.78E+01	0.0	6.78E+01	0.0	1.24E+02	1.37E+01	-6.55E+01	9.04E+00		
5.33E+06	8.47E+01	0.0	8.47E+01	0.0	1.24E+02	1.38E+01	-5.04E+01	1.09E+01		
5.42E+06	8.47E+01	0.0	8.47E+01	0.0	1.24E+02	1.38E+01	-5.04E+01	1.09E+01		
...										
7.88E+06	8.47E+01	0.0	8.47E+01	0.0	1.08E+02	1.46E+01	-3.97E+01	1.59E+01		
7.96E+06	1.69E+02	0.0	1.69E+02	0.0	1.04E+02	1.47E+01	4.93E+01	1.58E+01		
8.05E+06	1.69E+02	0.0	1.69E+02	0.0	1.04E+02	1.47E+01	4.93E+01	1.58E+01		
...										
1.05E+07	1.69E+02	0.0	1.69E+02	0.0	9.15E+01	1.54E+01	5.22E+01	2.57E+01		
1.05E+07	4.23E+01	0.0	4.23E+01	0.0	9.25E+01	1.55E+01	-7.44E+01	2.43E+01		
1.06E+07	4.23E+01	0.0	4.23E+01	0.0	9.30E+01	1.55E+01	-7.47E+01	2.40E+01		
...										
1.31E+07	4.23E+01	0.0	4.23E+01	0.0	6.10E+01	1.84E+01	-2.66E+01	7.97E+00		
1.32E+07	8.47E+01	0.0	8.47E+01	0.0	6.18E+01	1.83E+01	1.49E+01	8.04E+00		
1.33E+07	8.47E+01	0.0	8.47E+01	0.0	6.21E+01	1.83E+01	1.44E+01	8.13E+00		
...										
1.57E+07	8.47E+01	0.0	8.47E+01	0.0	6.76E+01	1.81E+01	-1.65E+00	1.88E+01		
1.58E+07	2.54E+01	0.0	2.54E+01	0.0	6.78E+01	1.81E+01	-6.00E+01	1.76E+01		
1.59E+07	2.54E+01	0.0	2.54E+01	0.0	6.79E+01	1.81E+01	-6.01E+01	1.75E+01		
...										
1.83E+07	2.54E+01	0.0	2.54E+01	0.0	6.91E+01	1.80E+01	-5.28E+01	9.20E+00		
1.84E+07	4.23E+01	0.0	4.23E+01	0.0	6.89E+01	1.80E+01	-3.53E+01	8.83E+00		
1.85E+07	4.23E+01	0.0	4.23E+01	0.0	6.89E+01	1.80E+01	-3.57E+01	9.19E+00		
...										
2.10E+07	4.23E+01	0.0	4.23E+01	0.0	6.67E+01	1.80E+01	-3.53E+01	1.09E+01		
2.11E+07	2.54E+01	0.0	2.54E+01	0.0	6.67E+01	1.80E+01	-5.07E+01	9.37E+00		
2.11E+07	2.54E+01	0.0	2.54E+01	0.0	6.67E+01	1.80E+01	-5.06E+01	9.31E+00		
...										
2.36E+07	2.54E+01	0.0	2.54E+01	0.0	5.77E+01	1.82E+01	-4.34E+01	1.11E+01		
2.37E+07	1.69E+01	0.0	1.69E+01	0.0	5.76E+01	1.82E+01	-5.36E+01	1.29E+01		
2.38E+07	1.69E+01	0.0	1.69E+01	0.0	5.75E+01	1.82E+01	-5.34E+01	1.28E+01		
...										
2.62E+07	1.69E+01	0.0	1.69E+01	0.0	5.20E+01	1.86E+01	-4.71E+01	1.21E+01		
2.63E+07	8.47E+00	0.0	8.47E+00	0.0	5.07E+01	1.86E+01	-5.21E+01	9.86E+00		
2.64E+07	8.47E+00	0.0	8.47E+00	0.0	5.04E+01	1.87E+01	-5.17E+01	9.77E+00		
...										
3.09E+07	8.47E+00	0.0	8.47E+00	0.0	3.03E+01	1.95E+01	-3.09E+01	9.03E+00		
3.12E+07	8.47E+00	0.0	8.47E+00	0.0	2.99E+01	1.96E+01	-3.15E+01	9.82E+00		
3.15E+07	8.47E+00	0.0	8.47E+00	0.0	2.95E+01	1.96E+01	-3.24E+01	1.12E+01		