APPENDIX A
Abbreviated Input Instructions

These input instructions are intended as a quick reference for the experienced user. Most explanations that are contained in the complete input instructions given in package documentation have been omitted. The format of input fields is given only for those records that contain fields that are not 10 characters wide. Each input item, for which format is not given, is identified as either a record or an array. For records, the fields contained in the record are named. For arrays, only the array name is given. Input fields which contain codes or flags are described. All other field and array descriptions have been dropped.

Array Input

The real two-dimensional array reader (U2DREL), the integer two-dimensional array reader (U2DINT), and the real one-dimensional array reader (UIDREL) read one may-control record and, optionally, a data array in a format specified on the array-control record.

FOR REAL ARRAY READER (U2DREL or UIDREL)

Data: LOCAT CNSTNT FMTIN IPRN
Format: I10 F10.0 5A4 I10

FOR INTEGER ARRAY READER (U2DINT)

Data: LOCAT ICONST FMTIN IPRN
Format: I10 I10 5A4 I10

IPRN— is a flag indicating that the array being read should be printed and a code for indicating the format that should be used. It is used only if LOCAT is not equal to zero. The format codes are different for each of the three modules. IPRN is set to zero when the specified value exceeds those defined in the chart below. If IPRN is less than zero, the array will not be printed.

<table>
<thead>
<tr>
<th>IPRN</th>
<th>U2DREL</th>
<th>U2DINT</th>
<th>UIDREL</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10G11.4</td>
<td>10I11</td>
<td>10G12.5</td>
</tr>
<tr>
<td>1</td>
<td>11G10.3</td>
<td>60I1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>9G13.6</td>
<td>40I2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>15F7.1</td>
<td>30I3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>15F7.2</td>
<td>25I4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>15F7.3</td>
<td>20I5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>15F7.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>20F5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>20F5.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>20F5.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>20F5.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>20F5.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>10G11.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LOCAT--indicates the location of the data which will be put in the array.
If LOCAT <0, unit number for unformatted records.
If LOCAT = 0, all elements are set equal to CNSTNT or ICONST.
If LOCAT >0, unit number for formatted records.

Basic Package Input

Input for the Basic (BAS) Package except for output control is read from unit 1 as specified in the main program. If necessary, the unit number for BAS input can be changed to meet the requirements of a particular computer. Input for the output control option is read from the unit number specified in IUNIT(12).

FOR EACH SIMULATION
1. Record: HEADNG(32)
2. Record: HEADNG (continued)
3. Record: NLAY NROW NCOL NPER

ITMUNI--is the time unit of model data.
O - undefined
1 - seconds
2 - minutes
3 - hours
4 - days
5 - years
Consistent length and time units must be used for all model data. The user may choose one length unit and one time unit to be used to specify all input data.

IUNIT--is a 24-element table of input units for use by all major options.
IAPART --indicates whether array BUFF is separate from array RHS.
If IAPART= O, the arrays BUFF and RHS occupy the same space. This option conserves space. This option should be used unless some other package explicitly says otherwise.
If IAPART ≠ O, the arrays BUFF and RHS occupy different space.
ISTRT--indicates whether starting heads are to be saved.
   If ISTRT = 0, starting heads are not saved.
   If ISTRT \neq 0, starting heads are saved.

IBOUND--is the boundary array.
   If IBOUND(I,J,K) < 0, cell I,J,K has a constant head.
   If IBOUND(I,J,K) = 0, cell I,J,K is inactive.
   If IBOUND(I,J,K) > 0, cell I,J,K is active.

HNOFLO--is the value of head to be assigned to all inactive cells.
Shead--is head at the start of the simulation.
PERLEN--is the length of a stress period.
NSTP--is the number of time steps in a stress period.
TSMULT--is the multiplier for the length of successive time steps.

Output Control Input

Input to Output Control is read from the unit specified in IUNIT(12). All printer output goes to unit 6 as specified in the main program. If necessary, the unit number for printer output can be changed to meet the requirements of a particular computer.

FOR EACH SIMULATION
  1. Record: IHEDFM IDDNFM IHEDUN IDDNNUN

FOR EACH TIME STEP
  2. Record: INCODE IHDDFL IBUDFL ICBCFL
  3. Record: Hdp Hdp Hdp Hdp
   (Record 3 is read 0, 1, or NLAY times, depending on the value of INCODE.)

IHEDFM--is a code for the format in which heads will be printed.
IDDNFM--is a code for the format in which drawdowns will be printed.

<table>
<thead>
<tr>
<th>Code</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>(10G11.4)</td>
</tr>
<tr>
<td>1</td>
<td>(11G10.3)</td>
</tr>
<tr>
<td>2</td>
<td>(9G13.6)</td>
</tr>
<tr>
<td>3</td>
<td>(15F7.1)</td>
</tr>
<tr>
<td>4</td>
<td>(15F7.2)</td>
</tr>
<tr>
<td>5</td>
<td>(15F7.3)</td>
</tr>
<tr>
<td>6</td>
<td>(15F7.4)</td>
</tr>
<tr>
<td>7</td>
<td>(20F5.0)</td>
</tr>
<tr>
<td>8</td>
<td>(20F5.1)</td>
</tr>
<tr>
<td>9</td>
<td>(20F5.2)</td>
</tr>
<tr>
<td>10</td>
<td>(20F5.3)</td>
</tr>
<tr>
<td>11</td>
<td>(20F5.4)</td>
</tr>
<tr>
<td>12</td>
<td>(10G11.4)</td>
</tr>
</tbody>
</table>

IHEDUN--is the unit number on which heads will be saved.
IDDNNUN--is the unit number on which drawdowns will be saved.
INCODE--is the head/drawdown output code.

If INCODE < 0, layer-by-layer specifications from the last time steps are used. Input item 3 is not read.
If INCODE = 0, all layers are treated the same way. Input item 3 will consist of one record.
IOFLG array will be read.
If INCODE > 0, input item 3 will consist of one record for each layer.
Block-Centered Flow Package Inut

Input for the BCF Package is read from the unit specified in IUNIT(I).

FOR EACH SIMULATION
1. Record: ISS IBCFCB
2. Data: LAYCON(NLAY) (maximum of 80 layers)
   Format: 4012
   (If there are 40 or fewer layers, use one record.)
3. Array: TRPY(NLAY)
4. Array: DELR(NCOL)
5. Array: DELC(NROW)

All of the arrays (items 6-12) for layer 1 are read first; then all of the arrays for layer 2, etc.

IF THE SIMULATION IS TRANSIENT
6. Array: stfl(NCOL,NROW)

IF THE LAYER TYPE CODE (LAYCON) IS ZERO OR TWO
7. Array: Tran(NCOL,NROW)

IF THE LAYER TYPE CODE (LAYCON) IS ONE OR THREE
8. Array: HY(NCOL,NROW)
9. Array: BOT(NCOL,NROW)
IF THIS IS NOT THE BOTTOM LAYER
10. Array: Vcont(NCOL,NROW)

IF THE SIMULATION IS TRANSIENT AND THE LAYER TYPE CODE (LAYCON) is TWO OR THREE
11. Array: sf2(NCOL,NROW)

IF THE LAYER TYPE CODE IS TWO OR THREE
12. Array: TOP(NCOL,NROW)

ISS—is the steady-state flag.
   If ISS ≠ 0, the simulation is steady state.
   If ISS = 0, the simulation is transient.
IBCFCB—is a flag and a unit number.
   If IBCFCB > 0, cell-by-cell flow terms will be recorded if ICBCFL (see Output Control) is set.
   If IBCFCB = 0, cell-by-cell flow terms will not be printed or recorded.
   If IBCFCB < 0, print flow for constant-head cells if ICBCFL is set.
LAYCON—is the layer type table: 0 - confined, 1 - unconfined,
   2 - confined/unconfined (T constant), and 3 - confined/unconfined.
TRPY—is an anisotropy factor for each layer: T or K along a column to T or K along a row.
DELR—is the cell width along rows.
DELCL—is the cell width along columns.
sfl—is the primary storage factor.
Tran—is the transmissivity along rows.
HY—is the hydraulic conductivity along rows.
BOT—is the elevation of the aquifer bottom.
Vcont—is the vertical hydraulic conductivity divided by the thickness from a layer to the layer beneath it.
sf2—is the secondary storage factor.
TOP—is the elevation of the aquifer top.
River Package Input

Input to the River (RIV) Package is read from the unit specified in IUNIT(4).

FOR EACH SIMULATION
  1. Record:  MXRIVR IRIVCB
FOR EACH STRESS PERIOD
  2. Record:  ITMP
  3. Record:  Layer Row Column Stage Cond Rbot
               (Input item 3 normally consists of one record for each river reach. If ITMP
               is negative or zero, item 3 is not read.)
    IRIVCB—is a flag and a unit number.
    If IRIVCB > 0, cell-by-cell flow terms will be recorded.
    If IRIVCB = 0, cell-by-cell flow terms will not be printed or recorded.
    If IRIVCB < 0, river leakage will be printed if ICBCFL is set.
    ITMP—is a flag and a counter.
    If ITMP < 0, river data from the last stress period will be reused.
    If ITMP ≥ 0, ITMP will be the number of reaches active during the current stress period.

Recharge Package Input

Input to the Recharge (RCH) Package is read from the unit specified in IUNIT(8).

FOR EACH SIMULATION
  1. Record:  NRCHOP IRCBCB
FOR EACH STRESS PERIOD
  2. Record:  INRECH INIRCH
  3. Array:   RECH(NCOL,NROW) IF THE RECHARGE OPTION IS EQUAL TO 2
  4. Array:   IRC(NCOL,NROW)

    NRCHOP—is the recharge option code.
    1 - Recharge is only to the top grid layer.
    2 - Vertical distribution of recharge is specified in array IRC.
    3 - Recharge is applied to the highest active cell in each vertical column.
    IRCBCB—is a flag and a unit number.
    If IRCBCB > 0, unit number for cell-by-cell flow terms.
    If IRCBCB ≤ 0, cell-by-cell flow terms will not be printed or recorded.
    INRECH—is the RECH read flag.
    If INRECH < 0, recharge fluxes from the preceding stress period are used
    If INRECH ≥ 0, an array of recharge fluxes, RECH (Lt^-1), is read.
    INIRCH—is similar to INRECH.
Well Package Input

Input for the Well (WEL) Package is read from the unit specified in IUNIT(2).

FOR EACH SIMULATION
1. Record: MXWELL IWELCB

FOR EACH STRESS PERIOD
2. Record: ITMP
3. Record: Layer Row Column Q
   (Input item 3 normally consists of one record for each well. If ITMP is negative or zero, item 3 is not read.)

MXWELL—is the maximum number of wells used at any time.
IWELCB—is a flag and a unit number.
   If IWELCB > 0, unit number for cell-by-cell flow terms.
   If IWELCB = 0, cell-by-cell flow terms will not be printed or recorded.
   If IWELCB < 0, well recharge will be printed whenever ICBCFL is set.
ITMP—is a flag and a counter.
   If ITMP < 0, well data from the last stress period will be reused.
   If ITMP ≥ 0, ITMP will be the number of wells active during the current stress period.

Drain Package Input

Input to the Drain (DRN) Package is read from the unit specified in IUNIT(3).

FOR EACH SIMULATION
1. Record: MXDRN IDRNCB

FOR EACH STRESS PERIOD
2. Record: ITMP
3. Record: Layer Row Col Elevation Cond
   (Input item 3 normally consists of one record for each drain. If ITMP is negative or zero, item 3 will not be read.)

MXDRN—is the maximum number of drain cells active at one time.
IDRNCB—is a flag and a unit number.
   If IDRNCB > 0, unit number for cell-by-cell flow terms.
   If IDRNCB = 0, cell-by-cell flow terms will not be printed or recorded.
   If IDRNCB < 0, drain leakage for each cell will be printed whenever ICBCFL is set.
ITMP—is a flag and a counter.
   If ITMP < 0, drain data from the last stress period will be reused.
   If ITMP ≥ 0, ITMP will be the number of drains active during the current stress period.
Evapotranspiration Package Input

Input to the Evapotranspiration (EVT) Package is read from the unit specified in IUNIT (5).

FOR EACH STRESS PERIOD
2. Record: INSURF INEVTR INEXDP INIEVT
3. Array: SURF
4. Array: EVTR
5. Array: EXDP

IF THE ET OPTION IS EQUAL TO TWO
6. Array: IEVT

NEVTOP--is the evapotranspiration (ET) option code.
1 - ET is calculated only for cells in the top grid layer.
2 - The cell for each vertical column is specified by the user in array IEVT.

IEVTCB--is a flag and a unit number.
If IEVTCB > 0, unit number for cell-by-cell flow terms.
If IEVTCB ≤ 0, cell-by-cell flow terms will not be printed or recorded.

INSURF--is the ET surface (SURF) read flag.
If INSURF ≥ 0, an array containing the ET surface elevation will be read.
If INSURF < 0, the ET surface from the preceding stress period will be reused.

INEVTR--is similar to INSURF.

INEXDP--is similar to INSURF.

INIEVT--is similar to INSURF.
General-Head Boundary Package Input

Input for the General-Head Boundary (GHB) Package is read from the unit specified in IUNIT(7).

FOR EACH SIMULATION
1. Record: MXBND IGHBCB

FOR EACH STRESS PERIOD
2. Record: ITMP Boundary
3. Record: Layer Row Column Head Cond
(Input item 3 normally consists of one record for each GHB. If ITMP is negative or zero, item 3 is not read.)

MXBND--is the maximum number of general-head boundary cells at one time.
IGHBCB--is a flag and a unit number.
   If IGHBCB > 0, unit number for cell-by-cell flow terms.
   If IGHBCB = 0, cell-by-cell flow terms will not be printed or recorded.
   If IGHBCB < 0, boundary leakage for each cell will be printed whenever ICBCFL is set.
ITMP--is a flag and a counter.
   If ITMP < 0, GHB data from the preceding stress period will be reused.
   If ITMP ≥ 0, ITMP is the number of general-head boundaries during the current stress period.

Strongly Implicit Procedure Package Input

Input to the Strongly Implicit Procedure (SIP) Package is read from the unit specified in IUNIT(9).

FOR EACH SIMULATION
1. Record: MXITER NPARM
2. Record: ACCL HCLOSE IPCALC WSEED IPRSIP

IPCALC--is a flag indicating where the iteration parameter seed will come from.
   0 - the seed will be entered by the user.
   1 - the seed will be calculated at the start of the simulation from problem parameters.
IPRSIP--is the printout interval for SIP.

Slice-Successive Overrelaxation Package Input

Input to the Slice-Successive Overrelaxation (SOR) Package is read from the unit specified in IUNIT(11).

FOR EACH SIMULATION
1. Record: MXITER
2. Record: ACCL HCLOSE IPRSOR

IPRSOR--is the printout interval for SOR.