SNKWRA.COM

```
$SAY
      ************************************************************

        THIS PROCEDURE SELECTS NECESSARY DATA FROM HISTORY AND
        ALLOCATIONS FILES, THEN RUNS DAILY SNAKE RIVER WATER
        RIGHT ACCOUNTING FOR CORRESPONDING PERIOD.

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

$INQUIRE SEL "TO SELECT DATA FOR ACCOUNTING PERIOD ENTER YES OR NO (Y/N)"
$IF .NOT. SEL THEN GOTO 300
$ ASSIGN SNKWRA.HST HISTORY
$ ASSIGN SNKWRA.HSD HISTDIV
$ ASSIGN SNKWRA.HSF HISTFLO
$ ASSIGN SNKWRA.HSR HISTRVR
$ ASSIGN SNKWRA.HSE HISTEXC
$ ASSIGN SNKWRA.ALD ALOCDIV
$ ASSIGN SNKWRA.ALR ALOCRVR
$ ASSIGN SNKWRA.ALM ALOCMIS
$ ASSIGN SNKWRA.ALC ALOCTNS
$ ASSIGN/USER TT: SYS$INPUT
$ RUN SNKSEL
$SAY
      ************************************************************

        FILES ARE NOW BEING SORTED FOR PROPER SEQUENCE AS INPUT TO
        ACCOUNTING PROGRAM.

      ************************************************************
$SORT SNKWRA.HSD SNKWRA.HSD-
/KEY=(POSITION:10,SIZE:7)/KEY=(POSITION:1,SIZE:8)
$SORT SNKWRA.HSF SNKWRA.HSF-
/KEY=(POSITION:10,SIZE:7)/KEY=(POSITION:1,SIZE:8)
$SORT SNKWRA.HSR SNKWRA.HSR-
/KEY=(POSITION:10,SIZE:7)/KEY=(POSITION:1,SIZE:8)
$SORT SNKWRA.HSE SNKWRA.HSE-
/KEY=(POSITION:10,SIZE:7)/KEY=(POSITION:1,SIZE:8)
$SORT SNKWRA.ALD SNKWRA.ALD-
/KEY=(POSITION:10,SIZE:7)/KEY=(POSITION:1,SIZE:8)
$SORT SNKWRA.ALR SNKWRA.ALR-
/KEY=(POSITION:10,SIZE:7)/KEY=(POSITION:1,SIZE:8)
$SORT SNKWRA.ALM SNKWRA.ALM-
/KEY=(POSITION:10,SIZE:7)/KEY=(POSITION:1,SIZE:8)
$SAY
      ************************************************************

        FILES ARE SORTED AND OLD FILES WILL NOW BE DELETED.

      ************************************************************
$ PU SNKWRA.HSD
$ PU SNKWRA.HSF
$ PU SNKWRA.HSR
$ PU SNKWRA.HSE
$ PU SNKWRA.ALD
$ PU SNKWRA.ALR
  U SNKWRA.ALM
$300:
$INQUIRE CHG "TO ENTER NEW INITIAL SYSTEM/CANAL STORAGE DATA ENTER (Y/N)"
$IF .NOT. CHG THEN GOTO 320
$INQUIRE CHGS "TO ENTER NEW INITIAL SYSTEM STORAGE DATA ENTER (Y/N)"
```

```
$IF .NOT. CHGS THEN GOTO 310
$@SNKCHGS
$310:
$INQUIRE CHGC "TO ENTER NEW INITIAL CANAL STORAGE DATA ENTER (Y/N)"
$SAY
            ************************************************

               ANSWER YES TO THIS QUIESTION IF YOU WANT TO
               CHANGE INDIVIDUAL'S STORAGE USE DIFFERENT
               THAN "0" AND REMAINING ACRE-FEET

            ************************************************
$IF .NOT. CHGC THEN GOTO 345
$@SNKCHGC
$320:
$INQUIRE CHG "TO CHANGE ONE OR TWO CANAL/SYSTEM STORAGE DATA ENTER (Y/N)"
$IF .NOT. CHG THEN GOTO 345
$INQUIRE CHGS "TO CHANGE ONE OR TWO SYSTEM STORAGE DATA ENTER (Y/N)"
$IF .NOT. CHGS THEN GOTO 340
$@SNKACHGS
$340:
$INQUIRE CHGC "TO CHANGE ONE OR TWO CANAL STORAGE DATA ENTER (Y/N)"
$IF .NOT. CHGC THEN GOTO 345
$@SNKACHGC
$345:
$INQUIRE WRA "TO RUN SNAKE WATER RIGHT ACCOUNTING ENTER YES OR NO (Y/N)"
$IF .NOT. WRA THEN GOTO 100
$SAY

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

        ACCOUNTING PROGRAM WILL NOW BEGIN.

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

$ ASSIGN/USER TT: SYS$INPUT
$RUN SNKWRA
$SORT SNKWRA.TLK SNKWRA.TLK/KEY=(POSITION:1,SIZE:8)
$PU/KEEP=2 SNKWRA.TLK
$GOTO 200
$100:
$SAY

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

        ACCOUNTING PROGRAM NOT RUN.

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

$GOTO 350
$200:
$SAY
      ************************************************************

        ACCOUNTING PROGRAM COMPLETED.  OUTPUT IN SNKWRA.RPT.

      ************************************************************
$350:
$SAY
```

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

                IF YOU WANT A PRINTOUT OF THE ACCOUNTING,
                THERE ARE FOUR OPTIONS FOR PRINT LOCATION:

                          1.  YOUR SCREEN
                          2.  LINE PRINTER
                          3.  LASER PRINTERS

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

$INQUIRE PRNT "TO PRINT REPORT ON YOUR SCREEN ENTER YES OR NO (Y/N)"
$IF .NOT. PRNT THEN GOTO 250
$S132
$TY SNKWRA.RPT
$S80
$250:
$INQUIRE VAX "TO PRINT REPORT ON LINE PRINTER ENTER YES OR NO (Y/N)"
$IF .NOT. VAX THEN GOTO 450
$@PA SNKWRA.RPT
$450:
$INQUIRE LSR "TO PRINT REPORT ON LASER 735 ENTER YES OR NO (Y/N)"
$IF .NOT. LSR THEN GOTO 150
$@SNKLSR SNKWRA.RPT
$150:
$INQUIRE LAS "TO PRINT REPORT ON LASER 732 ENTER YES OR NO (Y/N)"
$IF .NOT. LAS THEN GOTO 175
$@SNKLSR2 SNKWRA.RPT
$175:
$SAY
     ********************************************************

      IN ORDER FOR TOTALS FROM THIS RUN TO BE CARRIED TO THE
      NEXT RUN, THEY MUST BE PLACED IN THE ALLOCATIONS FILE
      TO DO THIS, ANSWER YES TO THE FOLLOWING QUESTION.

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

$INQUIRE ALC "TO PUT PREVIOUS RUN'S TOTALS IN ALLOCATIONS, ENTER YES OR NO"
$IF .NOT. ALC THEN GOTO 400
$@SNKALCUP
$400:
$INQUIRE SHT "TO CREATE AN ABBREVIATED REPORT ENTER YES OR NO (Y/N)"
$IF .NOT. SHT THEN GOTO 500
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKSHTRPT
$PU/KEEP=2 SNKSHTRPT.OUT
$SAY
         ***********************************************

                IF YOU WOULD LIKE A PRINT OUT OF THE
                ABBREVIATED WEEKLY REPORT, THERE ARE
                TWO OPTIONS FOR THE PRINT LOCATION:
                          1.  YOUR SCREEN
                          2.  LASER PRINTER

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

$INQUIRE SCR "TO PRINT THE REPORT TO YOUR SCREEN ENTER YES OR NO (Y/N)"
$IF .NOT. SCR THEN GOTO 125
```

```
$S132
$TY SNKSHTRPT.OUT
$S80
$125:
 QUIRE LAS "TO PRINT THE REPORT TO YOUR PRINTER ENTER YES OR NO (Y/N)"
IF .NOT. LAS THEN GOTO 500
@LASERJETLNDF SNKSHTRPT.OUT
$500:
```

SNKDENT.COM

```
$50:
$INQUIRE SDF "TO CREATE NEW HISTORY TRANSACTIONS FILE ANSWER YES OR NO (Y/N). "
$IF .NOT. SDF THEN GOTO 75
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKDENT
$GOTO 80
$75:
$INQUIRE CHG "TO CHANGE HYDROMET FILE TO MATCH HISTORY FILE ENTER YES OR NO (Y/N). "
$IF .NOT. CHG THEN GOTO 80
$@SNKCHGREC
$REN SNKDENT.OUT SNKDENT.HYD
$80:
$SAY

          THERE ARE FOUR DATA ENTRY (TRANSACTIONS) FILES THAT CAN
          BE USED TO UPDATE THE HISTORY FILE, THESE ARE:

          1.  SNKDENT.OUT   -    CREATED FROM DATA ENTRY PROGRAM
          2.  SNKDENT.HYD   -    CREATED FROM HYDROMET DATA
          3.  SNKDENT.FRE   -    CREATED FROM FREMONT-MADISON ID
          4.  SNKDENT.PMP   -    CREATED FROM PUMP DATA INPUT
          5.  SNKDENT.EXC   -
          YOU MUST NOW CHOOSE ONE OF THESE FILE TYPES BY ENTERING
          THE LAST THREE LETTERS (OUT, HYD, FRE, OR PMP) OF THE FILE
          NAME YOU WISH TO CHOOSE.

$INQUIRE TYP "       ENTER FILE TYPE "
$SAY

       THE FOLLOWING DATA ENTRY FILES OF THE TYPE YOU SELECTED
       ARE NOW IN THE DIRECTORY.

$DIR/DAT/SIZ SNKDENT.'TYP'
$SAY

       ARE THESE THE CORRECT FILE TYPES?

$INQUIRE CTYP "       ENTER YES OR NO (Y/N). "
$IF .NOT. CTYP THEN GOTO 80
$INQUIRE SRT1 "TO SORT DATA ENTRY (TRANSACTIONS) FILE ENTER YES OR NO (Y/N). "
$IF .NOT. SRT1 THEN GOTO 200
$SAY

      ************************************************************
                DATA ENTRY FILE IS BEING SORTED
      ************************************************************

$SORT SNKDENT.'TYP' SNKDENT.'TYP-
/KEY=(POSITION:1,SIZE:8)/KEY=(POSITION:10,SIZE:7)/STABLE
$200:
$INQUIRE SRT2 "TO SORT CURRENT HISTORY FILE ENTER YES OR NO (Y/N). "
$IF .NOT. SRT2 THEN GOTO 300
$SAY

      ************************************************************
                OLD (CURRENT) HISTORY FILE IS BEING SORTED
      ************************************************************

$SORT SNKWRA.HST SNKWRA.HST-
/KEY=(POSITION:1,SIZE:8)/KEY=(POSITION:10,SIZE:7)
$300:
$SAY

       BEFORE UPDATING HISTORY FILE YOU MAY WANT TO CREATE A
       BACKUP FILE.

$INQUIRE BKUP "TO CREATE A NEW BACKUP FILE ENTER YES OR NO (Y/N). "
$IF .NOT. BKUP THEN GOTO 310
$COPY SNKWRA.HST SNKHST.BKU
$SAY

       BACKUP FILE CREATED

       THE FOLLOWING BACKUP FILES ARE NOW IN YOUR DIRECTORY.  DELETE
       AS MANY AS POSSIBLE BY ENTERING THE NUMBER TO BE KEPT.

$DIR/DAT/SIZ SNKHST.BKU
$INQUIRE KF  "       HOW MANY DO YOU WANT TO KEEP?  "
$PU/KEEP='KF' SNKHST.BKU
$WRITE SYS$OUTPUT " "
$WRITE SYS$OUTPUT "      ****************************************************"
$WRITE SYS$OUTPUT "              ",KF," BACKUP HISTORY FILES RETAINED"
$WRITE SYS$OUTPUT "      ****************************************************"
```

```
$WRITE SYS$OUTPUT " "
$310:
$INQUIRE UPD "TO PUT NEW DATA IN HISTORY FILE ENTER YES OR NO (Y/N). "
$IF .NOT. UPD THEN GOTO 400
$ASSIGN SNKWRA.HST OLDHIST
$ASSIGN SNKDENT.'TYP' ENTRY
$ASSIGN SNKWRANEW.HST NEWHIST
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKHSTUP
$REN SNKWRANEW.HST SNKWRA.HST
$SAY

       THE FOLLOWING HISTORY FILES ARE NOW IN YOUR DIRECTORY.  DELETE
       AS MANY AS POSSIBLE BY ENTERING THE NUMBER TO BE KEPT.

$DIR/DAT/SIZ SNKWRA.HST
$325:
$INQUIRE KH "       HOW MANY DO YOU WANT TO KEEP?  "
$IF 'KH'.GE.2 THEN GOTO 350
$SAY

       YOU SHOULD PROBABLY KEEP AT LEAST TWO HISTORY FILES.

$GOTO 325
$350:
$PU/KEEP='KH' SNKWRA.HST
$WRITE SYS$OUTPUT " "
$WRITE SYS$OUTPUT "      ******************************************************"
$WRITE SYS$OUTPUT "                  ",KH," HISTORY FILES RETAINED"
$WRITE SYS$OUTPUT "      ******************************************************"
$WRITE SYS$OUTPUT " "
$GOTO 450
$400:
$SAY

      ************************************************************
                HISTORY FILE NOT UPDATED WITH NEW DATA
      ************************************************************

$450:
$SAY

       THE FOLLOWING DATA ENTRY FILES OF THE TYPE YOU SELECTED
       ARE NOW IN THE DIRECTORY.  DELETE AS MANY AS POSSIBLE BY
       ENTERING THE NUMBER TO BE KEPT.

$DIR/DAT/SIZ SNKDENT.'TYP'
$INQUIRE KF  "       HOW MANY DO YOU WANT TO KEEP?  "
$PU/KEEP='KF' SNKDENT.'TYP'
$INQUIRE PRNT "TO LIST DATA, ENTER YES OR NO (Y/N). "
$IF .NOT. PRNT THEN GOTO 500
$@SNKLST
$500:
$INQUIRE CONT "TO RETURN TO ENTER ADDITIONAL DATA, ENTER YES OR NO (Y/N). "
$IF CONT THEN GOTO 50
$SAY

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

           DATA ENTRY AND HISTORY FILE UPDATE ROUTINES COMPLETED

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

SNKALCUP.COM

```
$100:
$SAY

      ************************************************************
             NEW ALLOCATIONS DATA INPUT FILE IS BEING SORTED
      ************************************************************

$SORT SNKWRA.NAL SNKWRA.NAL-
/KEY=(POSITION:1,SIZE:8)/KEY=(POSITION:10,SIZE:7)
$SAY

      IF NEW ALLOCATIONS ARE TO REPLACE ALL DATA IN OLD ALLOCATIONS
      FILE, OR IF THIS IS THE FIRST RUN OF A NEW YEAR, THERE IS NO
      NEED TO UPDATE THE OLD FILE.  THE OLD FILE CAN BE DISCARDED.

      CAUTION!!!   YOU NORMALLY ANSWER NO THE FOLLOWING QUESTION
                   UNLESS THE RUN BEGINS ON NOVEMBER 1ST.

$INQUIRE NFILE "TO DISCARD OLD ALLOCATIONS FILE ENTER YES OR NO (Y/N). "
$IF NFILE THEN GOTO 350
$SAY

      ************************************************************
               OLD ALLOCATIONS FILE IS BEING SORTED
      ************************************************************

$SORT SNKWRA.ALC SNKWRA.ALC-
/KEY=(POSITION:1,SIZE:8)/KEY=(POSITION:10,SIZE:7)
$SAY

       BEFORE UPDATING ALLOCATIONS FILE YOU MAY WANT TO CREATE A
       BACKUP FILE.

$INQUIRE BKUP "TO CREATE A NEW BACKUP FILE ENTER YES OR NO (Y/N). "
$IF .NOT. BKUP THEN GOTO 310
$COPY SNKWRA.ALC SNKALC.BKU
$SAY

       BACKUP FILE CREATED

       THE FOLLOWING BACKUP FILES ARE NOW IN YOUR DIRECTORY.  DELETE
       AS MANY AS POSSIBLE BY ENTERING THE NUMBER TO BE KEPT.

$DIR/DAT/SIZ SNKALC.BKU
$INQUIRE KF  "       HOW MANY DO YOU WANT TO KEEP?  "
$PU/KEEP='KF' SNKALC.BKU
$WRITE SYS$OUTPUT " "
$WRITE SYS$OUTPUT "      ****************************************************"
$WRITE SYS$OUTPUT "            ",KF," BACKUP ALLOCATIONS FILES RETAINED"
$WRITE SYS$OUTPUT "      ****************************************************"
$WRITE SYS$OUTPUT " "
$GO TO 310
$350:
$COPY SNKEMPTY.DAT SNKWRA.ALC
$310:
$INQUIRE UPD "TO PUT NEW DATA IN ALLOCATIONS FILE ENTER YES OR NO (Y/N). "
$IF .NOT. UPD THEN GOTO 400
$ASSIGN SNKWRA.ALC OLDALC
$ASSIGN SNKWRA.NAL INPUT
$ASSIGN SNKWRANEW.ALC NEWALC
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKALCUP
$REN SNKWRANEW.ALC SNKWRA.ALC
$PU/KEEP=3 SNKWRA.NAL
$SAY

       THE FOLLOWING ALLOCATIONS FILES ARE NOW IN YOUR DIRECTORY.  DELETE
       AS MANY AS POSSIBLE BY ENTERING THE NUMBER TO BE KEPT.

$DIR/DAT/SIZ SNKWRA.ALC
$380:
$INQUIRE KH "       HOW MANY DO YOU WANT TO KEEP?  "
$IF 'KH'.GE.2 THEN GOTO 385
$SAY

       YOU SHOULD PROBABLY KEEP AT LEAST TWO ALLOCATIONS FILES
```

```
$GOTO 380
$385:
$PU/KEEP='KH' SNKWRA.ALC
$WRITE SYS$OUTPUT " "
$WRITE SYS$OUTPUT "      ******************************************************"
$WRITE SYS$OUTPUT "                ",KH," ALLOCATIONS FILES RETAINED"
$WRITE SYS$OUTPUT "      ******************************************************"
$WRITE SYS$OUTPUT " "
$GOTO 450
$400:
$SAY

      ************************************************************
                ALLOCATIONS FILE NOT UPDATED WITH NEW DATA
      ************************************************************

$450:
$SAY

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

                ALLOCATIONS FILE UPDATE ROUTINE COMPLETED

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

SNKLST.COM

```
$25:
$SAY
      ************************************************************

               THIS ROUTINE LISTS DATA FROM HISTORY FILE.

         TO MAKE ADDITIONAL COPIES OF A DATA PREVIOUSLY LISTED,
           ANSWER NO TO THE FOLLOWING QUESTION, OTHERWISE NEW
          LISTINGS WILL BE MADE ACCORDING TO YOUR INSTRUCTIONS.

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

$INQUIRE PRE "TO MAKE NEW LISTINGS OF DATA ENTER YES OR NO (Y/N)"
$IF .NOT. PRE THEN GOTO 50
$IF P1.EQS. "" THEN GOTO 30
$ASSIGN 'P1' INPUTDATA
$GOTO 35
$30:
$ASSIGN SNKWRA.HST INPUTDATA
$35:
$SAY
      ************************************************************

           YOU HAVE THE OPTION TO LIST DATA IN IRRIGATION YEAR
           OR WATER YEAR.  ANSWER YES TO THE FOLLOWING QUESTION
           FOR WATER YEAR LISTINGS OTHERWISE LISTINGS WILL BE
           MADE FOR THE IRRIGATION YEAR (NOVEMBER THRU OCTOBER).

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

$INQUIRE WYR "      TO MAKE WATER YEAR LISTINGS ENTER YES OR NO (Y/N)"
$IF WYR THEN GOTO 40
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKHSTLST
$GOTO 50
$40:
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKHSTLSTWY
$50:
$SAY

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

               THERE ARE THREE OPTIONS FOR PRINT LOCATIONS:

                          1.  YOUR SCREEN
                          2.  LINE PRINTER
                          3.  IDWR LASER

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

$INQUIRE PRNT "TO PRINT DATA ON YOUR SCREEN ENTER YES OR NO (Y/N)"
$IF .NOT. PRNT THEN GOTO 100
$S132
$TY SNKHSTLST.OUT
$INQUIRE RDY "WHEN READY TO CONTINUE, PRESS RETURN "
$S80
$100:
$INQUIRE VAX "TO PRINT DATA ON LINE PRINTER ENTER YES OR NO (Y/N)"
$IF .NOT. VAX THEN GOTO 200
$PA SNKHSTLST.OUT
$200:
$INQUIRE LAS "TO PRINT DATA ON IDWR LASER ENTER YES OR NO (Y/N)"
$IF .NOT. LAS THEN GOTO 300
$@SNKLSR SNKHSTLST.OUT
$300:
$PU/KEEP=3 SNKHSTLST.OUT
$INQUIRE END "TO LIST ADDITIONAL STATIONS ENTER YES OR NO (Y/N)"
$IF END THEN GOTO 25
$SAY
      ************************************************************
               LISTING ROUTINE COMPLETED
      ************************************************************
```

SNKCHGS COM

```
$SET NOON
$!
$!      ************************************************************
$!
$!        THIS PROCEDURE EXECUTES PROGRAM TO CHANGE RESERVOIR STORAGE
$!        VALUES AND SYSTEM ACCUMULATED TOTALS ON DATA SET SNKSYS.IND
$!        FOR INPUT TO SNAKE RIVER ACCOUNTING PROGRAM.  RJS JUN 1987.
$!
$!      ************************************************************
$!
$100:
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKCHGS
$IF $STATUS THEN GOTO 200
$SAY

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

$INQUIRE STP "ERROR, ALL NEW DATA LOST. DO YOU WISH TO TRY AGAIN? (Y/N)"
$IF STP THEN GOTO 100
$GO TO 300
$200:
$PU SNKSYS.TMP
$REN SNKSYS.TMP SNKSYS.IND
$PU/KEEP=3 SNKSYS.IND
$SAY

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

$INQUIRE RPT "DO YOU WISH TO CHECK/REENTER SYSTEM/RESERVOIR VALUES? (Y/N)"
$IF RPT THEN GOTO 100
$SAY

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

       SYSTEM/RESERVOIR VALUES UPDATED IN LATEST VERSION OF SNKSYS.IND

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

$300:
```

SNKSTO.COM

```
$SAY
      ***************************************************************

        THIS PROCEDURE SUMMARIZES SNAKE RIVER STORAGE ACCOUNTS

      ***************************************************************
$INQUIRE IY "ENTER TWO DIGIT IRRIGATION YEAR - EXAMPLE - 98 "
$KY=IY+1
$JY=IY-1
$100:
$INQUIRE CHG "TO CHANGE RESERVOIR SPACE OR FILL ENTER YES OR NO (Y/N)"
$IF .NOT. CHG THEN GOTO 150
$ASSIGN SNKSTO'IY'.IND RESIN
$ASSIGN SNKSTO'JY'.IND OLDRES
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKCHGSI
$REN SNKSTO.TMP SNKSTO'IY'.IND
$PU/KEEP=2 SNKSTO'IY'.IND
$150:
$INQUIRE CHG "TO CHANGE CANAL SPACE ALLOCATIONS ENTER YES OR NO (Y/N)"
$IF .NOT. CHG THEN GOTO 200
$ASSIGN SNKSTO'IY'.SPA SPACEIN
$ASSIGN SNKSTO'JY'.SPA OLDSPACE
$ ASSIGN/USER TT: SYS$INPUT
$RUN SNKCHGSS
$REN SNKSTO.TMP SNKSTO'IY'.SPA
$PU/KEEP=2 SNKSTO'IY'.SPA
$200:
$INQUIRE CHG "TO ENTER OR CHANGE CARRYOVER STORAGE ENTER YES OR NO (Y/N)"
$IF .NOT. CHG THEN GOTO 225
$ASSIGN SNKSTO'IY'.CRY CARRYIN
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKCHGSC
$REN SNKSTO.TMP SNKSTO'IY'.CRY
$PU/KEEP=2 SNKSTO'IY'.CRY
$225:
$INQUIRE GET "TO GET STORAGE USE FROM LATEST ACCOUNTING ENTER YES OR NO (Y/N)"
$IF .NOT. GET THEN GOTO 260
$ASSIGN SNKSTO'IY'.USE USEIN
$ASSIGN SNKSTO'IY'.SPA SPACEIN
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKGETSU
$260:
$INQUIRE CHG "TO ENTER OR CHANGE STORAGE USE ENTER YES OR NO (Y/N)"
$IF .NOT. CHG THEN GOTO 275
$ASSIGN SNKSTO'IY'.USE USEIN
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKCHGSU
$REN SNKSTO.TMP SNKSTO'IY'.USE
$PU/KEEP=2 SNKSTO'IY'.USE
$275:
$INQUIRE CHG "TO ENTER OR CHANGE STORAGE TRANSFERS ENTER YES OR NO (Y/N)"
$IF .NOT. CHG THEN GOTO 250
$ASSIGN SNKSTO'IY'.USE USEIN
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKCHGST
$REN SNKSTO.TMP SNKSTO'IY'.USE
$PU/KEEP=2 SNKSTO'IY'.USE
$250:
$INQUIRE CHG "TO ENTER OR CHANGE WTR BANK REQUEST/SUPPLY ENTER YES OR NO (Y/N)"
$IF .NOT. CHG THEN GOTO 255
$ASSIGN SNKSTO'IY'.USE USEIN
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKCHGWB
$REN SNKSTO.TMP SNKSTO'IY'.USE
$PU/KEEP=2 SNKSTO'IY'.USE
$255:
$INQUIRE CHG "TO ENTER OR CHANGE WTR BANK UNUSED RETURN ENTER YES OR NO (Y/N)"
$IF .NOT. CHG THEN GOTO 258
$ASSIGN SNKSTO'IY'.USE USEIN
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKCHGBR
$REN SNKSTO.TMP SNKSTO'IY'.USE
$PU/KEEP=2 SNKSTO'IY'.USE
$258:
$INQUIRE CHG "TO ENTER OR CHANGE USE ADJUSTMENTS ENTER YES OR NO (Y/N)"
$IF .NOT. CHG THEN GOTO 285
```

```
$ASSIGN SNKSTO'IY'.USE USEIN
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKCHGSA
$REN SNKSTO.TMP SNKSTO'IY'.USE
$PU/KEEP=2 SNKSTO'IY'.USE
$285:
$INQUIRE STO "TO COMPUTE SNAKE STORAGE ACCOUNTS ENTER YES OR NO (Y/N)"
$IF .NOT. STO THEN GOTO 300
$ASSIGN SNKSTO'IY'.CRY CARRYIN
$ASSIGN SNKSTO'IY'.SPA SPACEIN
$ASSIGN SNKSTO'KY'.CRY CARRYOUT
$ASSIGN SNKSTO'IY'.IND INDIN
$ASSIGN SNKSTO'IY'.RPT REPORTOUT
$ASSIGN SNKSTO'IY'.USE USEIN
$ ASSIGN/USER TT: SYS$INPUT
$RUN SNKSTO
$GOTO 350
$300:
$SAY
      ***************************************************************

          SNAKE RIVER RESERVOIR STORAGE ACCOUNT PROGRAM NOT RUN.

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

$GOTO 400
$350:
$SAY
      ***************************************************************

           SNAKE RIVER RESERVOIR STORAGE ACCOUNT PROGRAM COMPLETED,
           - OUTPUT IN SNKSTO'YR'.RPT

      ***************************************************************
$400:
$SAY
      ***************************************************************

                IF YOU WANT A PRINTOUT OF THE STORAGE ACCOUNTS,
                THERE ARE THREE OPTIONS FOR PRINT LOCATION:

                           1.  YOUR PRINTER
                           2.  IDWR VAX
                           3.  IDWR LASER

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

$INQUIRE PRNT "TO PRINT REPORT ON YOUR PRINTER ENTER YES OR NO (Y/N)"
$IF .NOT. PRNT THEN GOTO 450
$SAY
      ***************************************************************

               SET YOUR TERMINAL FOR PRINTER OUTPUT.

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

$INQUIRE RDY "WHEN PRINTER IS READY ENTER YES OR NO (Y/N)"
$IF .NOT. RDY THEN GOTO 450
$S132
$TY SNKSTO'IY'.RPT
$TY DUMMY.DAT
$S80
$450:
$INQUIRE VAX "TO PRINT REPORT ON IDWR VAX ENTER YES OR NO (Y/N)"
$IF .NOT. VAX THEN GOTO 500
$PA SNKSTO'IY'.RPT
$500:
$INQUIRE LAS "TO PRINT REPORT ON IDWR LASER ENTER YES OR NO (Y/N)"
$IF .NOT. LAS THEN GOTO 550
$@LASERLNDRF SNKSTO'IY'.RPT
$550:
$SAY
      ***************************************************************

              STORAGE ACCOUNT PROCEDURE IS FINISHED
```

SNKGETDATA.COM

```
$   SET NOON
$   !
$   !           GET REQUESTED DATA FROM HYDROMET AND PLACE IN A FILE
$   !           TO SEND TO IDWR VAX
$   !
$ IF P1 .EQS. "" THEN INQUIRE P1 "HOW MANY DAYS DATA DO YOU WANT?"
$ IF P2 .EQS. "" THEN INQUIRE P2 "LAST DAY?   EXAMPLE: MAY1"
$ IF P3 .EQS. "" THEN INQUIRE P3 "WATER YEAR?   EXAMPLE: 1995"
$ IF P4 .EQS. "" THEN INQUIRE P4 "LONG FILE?   EXAMPLE: SUM"
$   !
$   !           COPY INPUT FILE TO LONG.ACP
$   !
$   IF P2 .NES. "" THEN COPY LONG.'P4' LONG.ACP
$   PU LONG.ACP
$   !
$   !           SET UP THE NDAYS FILE
$   !
$   OPEN/WRITE TEMP NDAYS.ACP
$   WRITE TEMP "NDAYS="'P1'
$   CLOSE TEMP
$   SET PROT NDAYS.ACP
$   !
$   IF P2 .EQS. "" THEN GOTO ONE
$   !
$   !           SET DAY COMMAND FILE FOR EARLIER DAY
$   !
$   OPEN/WRITE TEMP DAY.ACP
$   IF P3.NES."" THEN  WRITE TEMP "WATER_YEAR="'P3'
$   WRITE TEMP "DAY="'P2'
$   CLOSE TEMP
$   SET PROT DAY.ACP
$   !
$   !           POLL ARCHIVE FILE ALSO GET DIVERSIONS FOR EARLIER
$   !           DAYS IF P1 AND/OR P2 ARE GIVEN
$   !
$ONE:
$   ARCHIVE
OPEN 76
FORMAT=2
FILE=DAY
FILE=NDAYS
FILE=LONG
EX
$   ASSIGN/USER NL: SYS$ERROR
$   ASSIGN/USER NL: SYS$OUTPUT
$   ASSIGN/USER NL: SYS$COMMAND
$   DELE SHORT.ACP;*,NDAYS.ACP;*,DAY.ACP;*
$   !
$   !           POLL DAYFILE
$   !
$   !           IF P2 IS SPECIFIED SKIP DAYFILE POLL
$   !
$   IF P2 .NES. "" THEN GOTO SKIPS
$   DAYFILE
OPEN 76
FORMAT=2
FILE=SHORT
EX
$SKIPS:
$   !
$   !           SORT INTO ORDER BY USGS # AND DATE
$   !
$   ASS/USER NL: SYS$OUTPUT
$   SORT/KEY=(POS:1,SIZE:17) FOR076 FOR077
$   DELETE FOR076.DAT;*
$   !
$ RENAME FOR077.DAT SNKHYDMET.OUT
$ DELETE FOR077.DAT;*
$ TYPE SYS$INPUT
THE  SNAKE RIVER DATA IS NOW IN FILE SNKHYDMET.OUT
$ INQUIRE WD1 "DO YOU WANT TO SEND FILE TO WATER DISTRICT 1 ENTER (Y/N). "
$ IF .NOT. WD1 THEN GOTO END
$ @TOWD1
$END:
$ EXIT
```

```
$   SET NOON
$   !
$   !           GET REQUESTED DATA FROM HYDROMET AND PLACE IN A FILE
$   !           TO SEND TO IDWR VAX
$   !
$ IF P1 .EQS. "" THEN INQUIRE P1 "HOW MANY DAYS DATA DO YOU WANT?"
$ IF P2 .EQS. "" THEN INQUIRE P2 "LAST DAY?   EXAMPLE: MAY1"
$ IF P3 .EQS. "" THEN INQUIRE P3 "WATER YEAR?   EXAMPLE: 1995"
$ IF P4 .EQS. "" THEN INQUIRE P4 "LONG FILE?   EXAMPLE: SUM"
$   !
$   !           COPY INPUT FILE TO LONG.ACP
$   !
$   IF P2 .NES. "" THEN COPY LONG.'P4' LONG.ACP
$   PU LONG.ACP
$   !
$   !           SET UP THE NDAYS FILE
$   !
$   OPEN/WRITE TEMP NDAYS.ACP
$   WRITE TEMP "NDAYS="'P1'
$   CLOSE TEMP
$   SET PROT NDAYS.ACP
$   !
$   IF P2 .EQS. "" THEN GOTO ONE
$   !
$   !           SET DAY COMMAND FILE FOR EARLIER DAY
$   !
$   OPEN/WRITE TEMP DAY.ACP
$   IF P3.NES."" THEN  WRITE TEMP "WATER_YEAR="'P3'
$   WRITE TEMP "DAY="'P2'
$   CLOSE TEMP
$   SET PROT DAY.ACP
$   !
$   !           POLL ARCHIVE FILE ALSO GET DIVERSIONS FOR EARLIER
$   !           DAYS IF P1 AND/OR P2 ARE GIVEN
$   !
$ONE:
$   ARCHIVE
OPEN 76
FORMAT=2
FILE=DAY
FILE=NDAYS
FILE=LONG
EX
$   ASSIGN/USER NL: SYS$ERROR
$   ASSIGN/USER NL: SYS$OUTPUT
$   ASSIGN/USER NL: SYS$COMMAND
$   DELE SHORT.ACP;*,NDAYS.ACP;*,DAY.ACP;*
$   !
$   !           POLL DAYFILE
$   !
$   !           IF P2 IS SPECIFIED SKIP DAYFILE POLL
$   !
$   IF P2 .NES. "" THEN GOTO SKIPS
$   DAYFILE
OPEN 76
FORMAT=2
FILE=SHORT
EX
$SKIPS:
$   !
$   !           SORT INTO ORDER BY USGS # AND DATE
$   !
$   ASS/USER NL: SYS$OUTPUT
$   SORT/KEY=(POS:1,SIZE:17) FOR076 FOR077
$   DELETE FOR076.DAT;*
$   !
$ RENAME FOR077.DAT SNKHYDMET.OUT
$ DELETE FOR077.DAT;*
$ TYPE SYS$INPUT
THE  SNAKE RIVER DATA IS NOW IN FILE SNKHYDMET.OUT
$ INQUIRE WD1 "DO YOU WANT TO SEND FILE TO WATER DISTRICT 1 ENTER (Y/N). "
$ IF .NOT. WD1 THEN GOTO END
$ @TOWD1
$END:
$ EXIT
```

```
atdt6w93341354
$SAY
      ************************************************************

        THIS PROCEDURE SELECTS DATA FROM HISTORY FILE TO CREATE
        AN ARCHIVE FILE OF LAST YEAR'S DATA AND A NEW FILE FOR
        NEXT YEAR WITH ALL DATA BEFORE OCTOBER 1 PURGED.

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

$INQUIRE CRT "TO CREATE THESE HISTORY FILES ENTER YES OR NO (Y/N)"
$IF .NOT. CRT THEN GOTO 100
$INQUIRE YR "ENTER THE IRRIGATION YEAR TO BE ARCHIVED, EXAMPLE: 88 "
$ ASSIGN SNKWRA.HST HISTORY
$ ASSIGN SNKA'YR'.HST OLDHIST
$ ASSIGN SNKWRA.HSN NEWHIST
$ ASSIGN/USER TT: SYS$INPUT
$ RUN SNKHSTPUR
$SAY
      ************************************************************

        ARCHIVE FILE OF HISTORY DATA IS IN FILE SNKA??.HST WHERE
        ?? IS THE YEAR.  NEW HISTORY FILE IS NAMED SNKWRA.HSN.
        THIS FILE SHOULD BE RENAMED TO SNKWRA.HST AS SOON AS IT
        IS DETERMINED THAT THIS PROCEDURE WORKED OK.

                          >>>>>>CAUTION<<<<<<

        BE SURE TO CHECK ARCHIVED FILE IMMEDIATELY FOR CORRECTNESS,
        OTHERWISE THIS DATA MAY BE LOST WHEN THE OLD SNKWRA.HST IS
        AUTOMATICALLY DELETED BY THE DATA ENTRY PROGRAM!!!!!!!!!!!

      ************************************************************
$100:
```

SNKACHGS.com

```
$!
$!      ************************************************************
$!
$!        THIS PROCEDURE EXECUTES PROGRAM TO CHANGE SELECTED RESERVOIR
$!        STORAGE VALUES AND SYSTEM ACCUMULATED TOTALS FROM ALLOCATIONS
$!        FILE PRIOR TO INPUT TO ACCOUNTING PROGRAM.   RJS MAY 1988.
$!
$!      ************************************************************
$!
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKACHGS
$REN SNKALM.TMP SNKWRA.ALM
$PU SNKWRA.ALM
  /KEEP=2
```

SNKCHGC.COM

```
$!
$!      ************************************************************
$!
$!        THIS PROCEDURE EXECUTES PROGRAM TO CHANGE CANAL STORAGE
$!        VALUES ON DATA SET SNKCAN.IND FOR INPUT TO SNAKE RIVER
$!        ACCOUNTING PROGRAM.  RJS MAY 1988.
$!
$!      ************************************************************
$!
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKCHGC
$REN SNKCAN.TMP SNKCAN.IND
$PU/KEEP=3 SNKCAN.IND
```

WWW.UPHDARS.COM

```
$!
$!      ************************************************************
$!
$!        THIS PROCEDURE EXECUTES PROGRAM TO CHANGE SELECTED CANAL
$!        STORAGE VALUES FROM ALLOCATIONS FILE PRIOR TO INPUT TO
$!        SNAKE RIVER ACCOUNTING PROGRAM.  RJS JUL 1988.
$!
$!      ************************************************************
$!
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKACHGC
$REN SNKALD.TMP SNKWRA.ALD
$PU SNKWRA.ALD
```

SNKLSR.COM

```
$ IF P1 .EQS. "" THEN INQUIRE P1 "FILENAME TO PRINT ON LASER"
$ COPY SNAKELSR.PRE *.*
$ APP 'P1' SNAKELSR.PRE
$ REN SNAKELSR.PRE PRINT.DAT
$ PRINT/QUE=LTA206$PRINT/NOFEED/NOTIFY PRINT.DAT
$ DEL PRINT.DAT;*
```

SNKCHGREC.COM

SNKHSTGM.COM

```
$   SET NOON
$SAY

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

       THIS PROCEDURE REFORMATS HYDROMET DATA TO A FILE THAT CAN
       UPDATE THE HISTORY FILE ON THE IDWR VAX.  MISSING DATA ARE
       REPLACED WITH BLANKS (INSTEAD OF 998877).  DATES ARE CHANGED
       FROM MONTH AND DAY TO DAY OF THE YEAR.  BLANK OR ZERO
       DIVERSION DATA RECORDS IN NON-IRRIGATION SEASON ARE DROPPED.

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

$SORT SNKHYDMET.OUT SNKHYDMET.OUT-
/KEY=(POSITION:1,SIZE:8)/KEY=(POSITION:10,SIZE:7)/STABLE
$ASSIGN/USER TT: SYS$INPUT
$ASSIGN SNKHYDMET.OUT INFILE
$ASSIGN SNKDENT.TMP OUTFILE
$RUN SNKFORMAT
$IF $STATUS THEN GOTO CONT
$SAY

     AN ERROR HAS OCCURED WHILE CREATING THE FILE TO TRANSFER
     THE DATA TO THE IDWR. PLEASE CORRECT ERROR AND RESTART THE JOB.

$EXIT
$CONT:
$ASSIGN SNKDENT.TMP INFILE
$ASSIGN SNKDENT.OUT OUTFILE
$RUN SNKCHGDATE
$REN SNKDENT.OUT SNKDENT.TMP
$ASSIGN SNKDENT.TMP INFILE
$ASSIGN SNKDENT.OUT OUTFILE
$RUN SNKHSTZERO
$DEL SNKDENT.TMP;*
$PU/KEEP=3 SNKDENT.OUT
$PU/KEEP=3 SNKHYDMET.OUT
$EXIT
```

```
$25:
$SAY
      ************************************************************

          THIS ROUTINE LISTS AND SUMS DATA FROM HISTORY FILE.

        TO MAKE ADDITIONAL COPIES OF A DATA PREVIOUSLY SUMMED,
          ANSWER NO TO THE FOLLOWING QUESTION, OTHERWISE NEW
         LISTINGS WILL BE MADE ACCORDING TO YOUR INSTRUCTIONS.

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

$INQUIRE PRE "TO MAKE NEW LISTINGS OF SUMMED DATA ENTER YES OR NO (Y/N)"
$IF .NOT. PRE THEN GOTO 50
$IF P1.EQS. "" THEN GOTO 30
$SAY

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

        FILE IS BEING SORTED IN PROPER SEQUENCE FOR SUMMING PROGRAM..

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

$SORT 'P1' SNKDAT.TMP/KEY=(POSITION:1,SIZE:8)/KEY=(POSITION:10,SIZE:7)/STABLE
$ASSIGN SNKDAT.TMP INPUTDATA
$GOTO 35
$30:
$ASSIGN SNKWRA.HST INPUTDATA
$35:
$INQUIRE WYR "FOR WATER YR LISTINGS INSTEAD OF IRRIGATION YR ENTER YES OR NO (Y/N)"
$IF .NOT. WYR THEN GOTO 40
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKHSTSUMW
$GOTO 45
$40:
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKHSTSUM
$45:
$IF P1.EQS. "" THEN GO TO 50
$DEL SNKDAT.TMP;*
$50:
$SAY

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

                THERE ARE THREE OPTIONS FOR PRINT LOCATIONS:

                          1.  YOUR PRINTER
                          2.  IDWR VAX
                          3.  IDWR LASER

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

$INQUIRE PRNT "TO PRINT DATA ON YOUR PRINTER ENTER YES OR NO (Y/N)"
$IF .NOT. PRNT THEN GOTO 100
$S132
$TY SNKHSTSUM.OUT
$S80
$100:
$INQUIRE VAX "TO PRINT DATA ON IDWR VAX ENTER YES OR NO (Y/N)"
$IF .NOT. VAX THEN GOTO 200
$PA SNKHSTSUM.OUT
$200:
$INQUIRE LAS "TO PRINT DATA ON IDWR LASER ENTER YES OR NO (Y/N)"
$IF .NOT. LAS THEN GOTO 300
$@LASERLNDRF SNKHSTSUM.OUT
$300:
$PU/KEEP=3 SNKHSTSUM.OUT
$INQUIRE END "TO SUM ADDITIONAL STATIONS ENTER YES OR NO (Y/N)"
$IF END THEN GOTO 25
$SAY

      ************************************************************
               LISTING ROUTINE COMPLETED
      ************************************************************
```

SNYRCH.GN.COM

```
$SAY
      ************************************************************

        THIS PROCEDURE SELECTS NECESSARY DATA FROM HISTORY
        FILE, THEN COMPUTES DAILY SNAKE RIVER REACH GAINS FOR
        EITHER THE WATER YEAR OR IRRIGATION YEAR.

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

$INQUIRE SEL "TO SELECT DATA FOR REACH GAINS ENTER YES OR NO (Y/N)"
$IF .NOT. SEL THEN GOTO 300
$ ASSIGN SNKWRA.HST HISTORY
$ ASSIGN SNKWRA.HSD HISTDIV
$ ASSIGN SNKWRA.HSF HISTFLO
$ ASSIGN SNKWRA.HSR HISTRVR
$ ASSIGN SNKWRA.HSE HISTEXC
$ ASSIGN/USER TT: SYS$INPUT
$ RUN SNKSEL
$SAY
      ************************************************************

        FILES ARE NOW BEING SORTED FOR PROPER SEQUENCE AS INPUT TO
        REACH GAIN PROGRAM.

      ************************************************************
$SORT SNKWRA.HSD SNKWRA.HSD-
/KEY=(POSITION:10,SIZE:7)/KEY=(POSITION:1,SIZE:8)
$SORT SNKWRA.HSF SNKWRA.HSF-
/KEY=(POSITION:10,SIZE:7)/KEY=(POSITION:1,SIZE:8)
$SORT SNKWRA.HSR SNKWRA.HSR-
/KEY=(POSITION:10,SIZE:7)/KEY=(POSITION:1,SIZE:8)
$SORT SNKWRA.HSE SNKWRA.HSE-
/KEY=(POSITION:10,SIZE:7)/KEY=(POSITION:1,SIZE:8)
$SAY

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

        FILES ARE SORTED AND OLD FILES WILL NOW BE DELETED.

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

$ PU SNKWRA.HSD
$ PU SNKWRA.HSF
$ PU SNKWRA.HSR
$ PU SNKWRA.HSE
$300:
$INQUIRE RGN "TO RUN SNAKE RIVER REACH GAINS ENTER YES OR NO (Y/N)"
$IF .NOT. RGN THEN GOTO 100
$SAY

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

                  REACH GAINS PROGRAM BEGINNING

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

$ ASSIGN/USER TT: SYS$INPUT
$RUN SNKRCHGN
$GOTO 200
$100:
$SAY

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

                  REACH GAINS PROGRAM NOT RUN.

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

$GOTO 350
$200:
$SORT SNKRCHGN.OUT SNKRCHGN.OUT-
/KEY=(POSITION:1,SIZE:8)/KEY=(POSITION:10,SIZE:7)/STABLE
$INQUIRE DIV "DID YOU CREATE A FILE OF DIVERSIONS ENTER YES OR NO (Y/N)"
$IF .NOT. DIV THEN GOTO 250
$SORT SNKRCHGN.DIV SNKRCHGN.DIV-
/KEY=(POSITION:1,SIZE:8)/KEY=(POSITION:10,SIZE:7)/STABLE
$250:
$SAY
      ************************************************************

         REACH GAINS PROGRAM COMPLETED.  OUTPUT IN SNKRCHGN.OUT

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

```
$350:
$INQUIRE LST "TO LIST SNAKE RIVER REACH GAINS ENTER YES OR NO (Y/N)"
$IF .NOT. LST THEN GOTO 500
$@SNKRCHGNLST
$PU/KEEP=3 SNKRCHGNLST.OUT
$PU/KEEP=3 SNKRCHGN.OUT
$PU/KEEP=3 SNKRCHGN.DAT
$500:
```

WORD_LISTING/GRAMS

```
$25:
$SAY
      ***************************************************************

             THIS ROUTINE LISTS DATA FROM REACH GAINS FILE.

        TO MAKE ADDITIONAL COPIES OF A DATA PREVIOUSLY LISTED,
          ANSWER NO TO THE FOLLOWING QUESTION, OTHERWISE NEW
         LISTINGS WILL BE MADE ACCORDING TO YOUR INSTRUCTIONS.

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

$INQUIRE PRE "TO MAKE NEW LISTINGS OF DATA ENTER YES OR NO (Y/N)"
$IF .NOT. PRE THEN GOTO 50
$IF P1.EQS. "" THEN GOTO 30
$ASSIGN 'P1' INPUTDATA
$GOTO 35
$30:
$ASSIGN SNKRCHGN.OUT INPUTDATA
$35:
$SAY
      ***************************************************************

           YOU HAVE THE OPTION TO LIST DATA IN IRRIGATION YEAR
           OR WATER YEAR.  ANSWER YES TO THE FOLLOWING QUESTION
           FOR WATER YEAR LISTINGS OTHERWISE LISTINGS WILL BE
           MADE FOR THE IRRIGATION YEAR (NOVEMBER THRU OCTOBER).

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

$INQUIRE WYR "      TO MAKE WATER YEAR LISTINGS ENTER YES OR NO (Y/N)"
$IF WYR THEN GOTO 40
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKHSTLST
$GOTO 45
$40:
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKHSTLSTWY
$45:
$REN SNKHSTLST.OUT SNKRCHGNLST.OUT
$50:
$SAY
      ***************************************************************

                THERE ARE THREE OPTIONS FOR PRINT LOCATIONS:

                           1.  YOUR SCREEN
                           2.  LINE PRINTER
                           3.  IDWR LASER

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

$INQUIRE PRNT "TO PRINT DATA ON YOUR SCREEN ENTER YES OR NO (Y/N)"
$IF .NOT. PRNT THEN GOTO 100
$S132
$TY SNKRCHGNLST.OUT
$INQUIRE RDY "WHEN READY TO CONTINUE, PRESS RETURN "
$S80
$GOTO 300
$100:
$INQUIRE VAX "TO PRINT DATA ON LINE PRINTER ENTER YES OR NO (Y/N)"
$IF .NOT. VAX THEN GOTO 200
$PA SNKRCHGNLST.OUT
$GOTO 300
$200:
$INQUIRE LAS "TO PRINT DATA ON IDWR LASER ENTER YES OR NO (Y/N)"
$IF .NOT. LAS THEN GOTO 300
$@SNKLSR SNKRCHGNLST.OUT
$300:
$PU/KEEP=3 SNKRCHGNLST.OUT
$INQUIRE END "TO LIST ADDITIONAL STATIONS ENTER YES OR NO (Y/N)"
$IF END THEN GOTO 25
$SAY
      ***************************************************************
               LISTING ROUTINE COMPLETED
      ***************************************************************
```

SNKALCLST.COM

```
$25:
$SAY
      ************************************************************

              THIS ROUTINE LISTS DATA FROM ALLOCATIONS FILE.

        TO MAKE ADDITIONAL COPIES OF A DATA PREVIOUSLY LISTED,
          ANSWER NO TO THE FOLLOWING QUESTION, OTHERWISE NEW
         LISTINGS WILL BE MADE ACCORDING TO YOUR INSTRUCTIONS.

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

$INQUIRE PRE "TO MAKE NEW LISTINGS OF DATA ENTER YES OR NO (Y/N)"
$IF .NOT. PRE THEN GOTO 50
$ASSIGN/USER TT: SYS$INPUT
$IF P1.EQS. "" THEN GOTO 30
$ASSIGN 'P1' INPUTDATA
$GOTO 35
$30:
$ASSIGN SNKWRA.ALC INPUTDATA
$35:
$RUN SNKALCLST
$50:
$SAY

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

              THERE ARE THREE OPTIONS FOR PRINT LOCATIONS:

                        1.  YOUR SCREEN
                        2.  IDWR VAX
                        3.  IDWR LASER

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

$INQUIRE PRNT "TO PRINT DATA ON YOUR SCREEN ENTER YES OR NO (Y/N)"
$IF .NOT. PRNT THEN GOTO 100
$S132
$TY SNKALCLST.OUT
$INQUIRE RDY "WHEN READY TO PROCEED, HIT ENTER"
$S80
$100:
$INQUIRE VAX "TO PRINT DATA ON IDWR VAX ENTER YES OR NO (Y/N)"
$IF .NOT. VAX THEN GOTO 200
$PA SNKALCLST.OUT
$200:
$INQUIRE LAS "TO PRINT DATA ON IDWR LASER ENTER YES OR NO (Y/N)"
$IF .NOT. LAS THEN GOTO 300
$@LASERJETLNDF SNKALCLST.OUT
$300:
$PU/KEEP=3 SNKALCLST.OUT
$INQUIRE END "TO LIST ADDITIONAL STATIONS ENTER YES OR NO (Y/N)"
$IF END THEN GOTO 25
$SAY
      ************************************************************
              LISTING ROUTINE COMPLETED
      ************************************************************
```

SNKREPORT.COM

```
$25:
$SAY
      ************************************************************

         THIS ROUTINE LISTS AND SUMS DATA FROM HISTORY FILE FOR
       THE DISTRCT 01 WATERMASTER REPORT.  ALL PUMP DIVERSIONS WITH
       LESS THAN 500 AC-FT ANNUAL DIVERSION ARE INCLUDED TOGETHER
                UNDER "MISCELLANEOUS" DIVERSIONS.

        TO MAKE ADDITIONAL COPIES OF A DATA PREVIOUSLY SUMMED,
          ANSWER NO TO THE FOLLOWING QUESTION, OTHERWISE NEW
         LISTINGS WILL BE MADE ACCORDING TO YOUR INSTRUCTIONS.

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

$INQUIRE PRE "TO MAKE NEW LISTINGS OF SUMMED DATA ENTER YES OR NO (Y/N)"
$IF .NOT. PRE THEN GOTO 50
$IF P1.EQS. "" THEN GOTO 30
$SAY

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

        FILE IS BEING SORTED IN PROPER SEQUENCE FOR SUMMING PROGRAM.

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

$SORT 'P1' SNKDAT.TMP/KEY=(POSITION:1,SIZE:8)/KEY=(POSITION:10,SIZE:7)/STABLE
$ASSIGN SNKDAT.TMP INPUTDATA
$GOTO 35
$30:
$ASSIGN SNKWRA.HST INPUTDATA
$35:
$ASSIGN/USER TT: SYS$INPUT
$RUN SNKREPORT
$45:
$IF P1.EQS. "" THEN GO TO 50
$DEL SNKDAT.TMP;*
$50:
$@LASERJETPORF SNKERRSUM.OUT
$PUR SNKERRSUM.OUT
$SAY

      ************************************************************
           A LIST OF MISSING TITLES AND/OR STATION TITLES WITH
           NO DATA IS IN FILE SNKERRSUM.OUT.  BE SURE TO CHECK
           THESE AND MAKE SURE ALL IS OK.
      ************************************************************



$SAY

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

                THERE ARE THREE OPTIONS FOR PRINT LOCATIONS:

                           1.  YOUR PRINTER
                           2.  IDWR VAX
                           3.  IDWR LASER

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

$INQUIRE PRNT "TO PRINT DATA ON YOUR PRINTER ENTER YES OR NO (Y/N)"
$IF .NOT. PRNT THEN GOTO 100
$S132
$TY SNKREPORT.OUT
$S80
$100:
$INQUIRE VAX "TO PRINT DATA ON IDWR VAX ENTER YES OR NO (Y/N)"
$IF .NOT. VAX THEN GOTO 200
$PA SNKREPORT.OUT
$200:
$INQUIRE LAS "TO PRINT DATA ON IDWR LASER ENTER YES OR NO (Y/N)"
$IF .NOT. LAS THEN GOTO 300
$@LASERLNDRF SNKREPORT.OUT
$300:
$INQUIRE END "TO SUM ADDITIONAL STATIONS ENTER YES OR NO (Y/N)"
$IF END THEN GOTO 25
$SAY
```

```
************************************************************
        LISTING ROUTINE COMPLETED
************************************************************
```

SNKWRA.LIS

```
C
C----SECTION 1-1
C****THIS PROGRAM WRITTEN BY IDAHO DEPARTMENT OF WATER RESOURCES IN
C****SEPTEMBER 1977 FOR THE PURPOSE OF DISTRIBUTING WATER RIGHTS BY
C****PRIORITY DATE ON RIVER SYSTEMS OF ANY REASONABLE CONFIGURATION
C
C****INPUT DATA AVAILABLE MUST INCLUDE RIVER DISCHARGES AT ALL SECTIONS
C****WHERE GAINS OR LOSSES TO THE RIVER ARE SIGNIFICANT, MEASUREMENTS
C****OF EACH DIVERSION FROM THE RIVER, AND A LIST OF ALL RIGHTS WITH
C****BOTH DATE AND AMOUNT.  TIME ELEMENT IS ONE DAY.
C
C****IF RIVER SYSTEM CONTAINS RESERVOIRS, AMOUNT OF DIVERSION IN
C****EXCESS OF NATURAL FLOW RIGHTS IS CONSIDERED USE OF STORED WATER.
C****USE OF STORED WATER IS DEDUCTED FROM BEGINNING OF SEASON STORED
C****WATER ALLOCATION TO KEEP A DAILY ACCOUNT OF REMAINING STORAGE.
C
C****FOR FURTHER INFORMATION CONTACT HYDROLOGY SECTION IDWR 327-7990.
C
C****THIS VERSION (WRD097D) OF THE WATER RIGHT ACCOUNTING PROGRAM
C****IS ADAPTED TO WATER DISTRICT 1, UPPER SNAKE RIVER, IDAHO
C****FROM JACKSON LAKE TO MILNER DAM INCLUDING HENRYS FORK, FALLS
C****RIVER, TETON RIVER, AND WILLOW CREEK.
C
C----SECTION  1-1, PART 1
C****DECLARE ALL CHARACTER DATA
C
C
      CHARACTER RUNDATE*9
      CHARACTER*49 DVNAME,DVNAM,RESNAME,RESNAM,FLONAME,FLONAM
      CHARACTER*49 UNDEF
C
C----SECTION  1-2, PART 1
C****DECLARE SPACE FOR ALL DIVERSION VARIABLES
C
      DIMENSION DIVNM(400,5),IRCH(400),RD(400),DM(400),DIV(400)
      DIMENSION AD(400),IDN(400),STOR(400),DVV(400,366),SRM(400)
      DIMENSION JC(400),II(5,400),TDIV(400),DNAM(400,5),DVNAM(400)
C
C----SECTION  1-2, PART 2
C****DECLARE SPACE FOR ALL REACH VARIABLES
C
      DIMENSION RF(80),F(80),IDS(80),TD(80),G(80,15),CTR(80),TRM(80)
      DIMENSION PCT(80),IORD(80),RCHNM(80,6),LAG(80),LGD(80)
      DIMENSION SF(80),AF(80),TR(80),TRD(80),RIN(80),IRS(80),ICF(80)
      DIMENSION IRT(80),IDA(80),GAIN(80),KNRC(80),JRN(45),MGA(50)
      DIMENSION AG(80),PF(80),TRE(80),DS(80),GAV(80,4),A(80,360)
      DIMENSION FLONAM(80)
C
C----SECTION  1-2, PART 3
C****DECLARE SPACE FOR ALL RESERVOIR VARIABLES
C
      DIMENSION RES(10,2),RESNM(10,4),SAC(10),DRA(10),LGG(10)
      DIMENSION ARINT(10),EVAP(10),SA(11,10),EV(10),IRESN(9)
      DIMENSION CEV(10),EVP(10,366),RSS(10,366),PPT(10,366),PP(10)
      DIMENSION RESNAM(10)
C
C----SECTION  1-2, PART 4
```

```
C****DECLARE SPACE FOR ALL WATER RIGHT VARIABLES
C
      DIMENSION P(800),ICNL(800),IDATE(800),T(800),JR(800),IV(800)
      DIMENSION SVL(800),IVO(800),ICN(800),KEN(800),KBG(800)
      DIMENSION JDATE(800),JCNL(800),JJ(800),VRD(40),IY(800)
      DIMENSION IM(800),ID(800),KBDY(800),KEDY(800),KBMN(800)
      DIMENSION KEMN(800)
C
C----SECTION  1-2, PART 5
C****DECLARE SPACE FOR ALL RESERVOIR RIGHT VARIABLES
C
      DIMENSION RST(16),BRST(16),MR(16)
C
C----SECTION  1-2, PART 6
C****DECLARE SPACE FOR ALL EXCHANGE WELL VARIABLES
C
      DIMENSION IEN(30),IER(30),EXCNM(30,4),TSE(30),EXC(30,366),ECH(30)
C
C----SECTION  1-2, PART 7
C****DECLARE SPACE FOR ALL TIME AND OTHER MISC VARIABLES
C
      DIMENSION OM(12),JD(12),JDT(366),JYE(366),JDY(366)
      DIMENSION FI(20),KOUT(4),GT(10),ISPEC(92),TT(20),JPM(40)
C
C----SECTION  2-1, PART 1
C****ASSIGN CHARACTERS FOR IDENTIFICATION OF ESTIMATED FLOWS,
C****AND UNDEFINED TITLES FOR DECTALK FILE.
C
      DATA BLANK/' '/,AST/'*'/
      DATA UNDEF/'UNDEFINED                                        '/
C
C----SECTION  2-1, PART 2
C****ISPEC = IDENTIFICATION NUMBERS OF CANALS FOR WHICH SPECIAL
C****COMPUTATIONS MUST BE MADE TO DETERMINE DIVERSION RATES TO BE
C****USED FOR WATER RIGHT ALLOCATION.
C
      DATA ISPEC/13080000,13080500,13085800,13087000,13086520,13086530,
     113086510,13087500,13049561,13049560,13037505,13037975,13038204,
     213038205,13057135,13057250,13048560,13049725,13050530,13058510,
     313058530,13058515,13057025,13057021,13057014,13057015,13057018,
     413061525,13061522,13061705,13055040,13038025,13038386,13038179,
     513038180,13061520,13061685,13058090,13058519,13038225,13038340,
     613047475,13047615,13047616,13038050,13038065,13038360,13038362,
     713038084,13038372,13038110,13057144,13059525,13060055,13057115,
     813057117,13057121,13038373,13054772,13061521,13055042,13057012,
     913061677,13037855,13037860,13037880,13048556,13084590,13084598,
     X13084610,13084720,13085390,13047480,13086512,13048045,13055193,
     113048255,13045805,13045829,13045860,13046086,13047570,13048480,
     213048551,13061625,13086000,13059505,13059510,13059515,13059520,
     313060500,13060501/
C
C----SECTION  2-1, PART 3
C****EXTEND PRECISION OF VARIABLES WITH LARGE VALUES
C
      REAL*8 RST,BRST,RES,TT,SAC,RSS,P,T,CTR,TR,TRM,GT
C
C----SECTION  2-1, PART 4
```

```
C
C----SECTION  2-3, PART 4
C****INITIALIZE INPUT-OUTPUT UNITS.
C
      INTEGER OUT
      INTEGER OUT2
C
C----SECTION  2-3, PART 5
C****INITIALIZE INPUT-OUTPUT UNITS.
C
      CALL ASSIGN (1,'SNKWRA.IND')
      CALL ASSIGN (2,'SNKWRA.RPT')
      CALL ASSIGN (3,'SNKRRT.IND')
      CALL ASSIGN (4,'SNKWRA.EPL')
      CALL ASSIGN (5,'SNKWRA.DPL')
      CALL ASSIGN (6,'SNKSYS.IND')
      CALL ASSIGN (7,'SNKCAN.IND')
      CALL ASSIGN (8,'SNKWRA.RTS')
      CALL ASSIGN (9,'SNKWRA.HSE')
      CALL ASSIGN (10,'SNKWRA.HSF')
      CALL ASSIGN (11,'SNKWRA.HSD')
      CALL ASSIGN (12,'SNKWRA.HSR')
      CALL ASSIGN (13,'SNKWRA.ALD')
      CALL ASSIGN (14,'SNKWRA.ALR')
      CALL ASSIGN (15,'SNKWRA.ALM')
      OPEN (UNIT=16,NAME='SNKWRA.NAL',TYPE='NEW',
     1CARRIAGECONTROL='LIST')
C
C----SECTION  3-1
C**** ND  = NUMBER OF INDIVIDUAL DIVERSION MEASUREMENTS
C**** NR  = NUMBER OF REACHES IN RIVER SYSTEM
C**** NLL = NUMBER OF WATER RIGHTS
C**** IFR = FINAL REACH NUMBER IN SYSTEM
C**** NCR = GREATEST NUMBER OF CONTINUOUS REACHES (BACK-TO-BACK)
C**** IDB = DEBUG PRINTOUT IF GREATER THAN ZERO
C**** NP  = NUMBER OF RESERVOIRS
C**** ILS = WATER RIGHT PRINTOUT BY PRIORITY AND REGULAR ACCOUNTING IF
C****       EQUAL 1.  IF ILS > 1, REGULAR ACCOUNTING NOT DONE.
C**** NEP = NUMBER OF EXCHANGE PUMPS IN SYSTEM
C**** JDP = INTERVAL IN DAYS BETWEEN PRINTOUT OF DIVERSION DATA.
C**** NSR = TOTAL NUMBER OF RESERVOIR STORAGE RIGHTS IN ENTIRE SYSTEM.
C**** LBC = WATER RIGHT PRINTOUT BY CANAL IF > 0.
C**** KOD = WILL PRINT OUT DIVERSION DATA IN FLOATING POINT IN GREATER
C****       DETAIL IF > 0, MAINLY USED FOR DEBUGGING.
C**** NSP = NUMBER OF CANALS FOR WHICH SPECIAL COMPUTATIONS ARE MADE.
C**** NRC = NUMBER OF REACHES WITH DATA ON HISTORY.
C**** IBG = NOT USED
C**** LRA = NUMBER OF LINES TO BE PRINTED OF DATA GENERATED FOR
C****       ADDITION TO ALLOCATIONS FILE.
C**** NDF = NUMBER OF DAYS FOR WHICH ALLOCATIONS ARE TO BE PROJECTED
C****       BEYOND FINAL DAY AT MILNER.
C**** KED = THE FINAL KED DAYS WILL BE PRINTED AT IDAHO FALLS & BURLEY
C
      READ(1,7,END=45) ND,NR,NLL,IFR,NCR,IDB,NP,ILS,NEP,JDP,NSR,LBC,KOD
     1,NSP,NRC,IBG,LRA,NDF,KED
C
C----SECTION  3-1, PART 2
```

```
C****SET VALUES OF IBGS AND IBGD BY INQUIRY.  IF THESE VALUES = 1 THEN
C****SYSTEM RESERVOIR AND DIVERSIONS ACCUMULATIONS (RESPECTIVELY) WILL
C****BE READ IN FROM DATA FILES (SNKSYS.IND AND/OR  SNKCAN.IND),
C****RATHER THAN FROM ALLOCATIONS FILES (SNKWRA.ALM AND SNKWRA.ALD).
C
      IBGS=0
      IBGD=0
      IBGV=0
      IBGE=0
      TYPE *, '  '
      TYPE *, '    IF THIS IS THE FIRST RUN OF THE YEAR, OR IF YOU'
      TYPE *, '    ARE RESETTING ALL SYSTEM/RESERVOIR, AND/OR ALL '
      TYPE *, '    DIVERSION STORAGE ACCUMULATED TOTALS, AND/OR   '
      TYPE *, '    WATER RIGHT VOLUME LIMIT TOTALS, AND/OR ALL    '
      TYPE *, '    EXCHANGE WELL ACCUMULATED TOTALS, THEN YOU     '
      TYPE *, '    MUST READ THESE VALUES FROM THE CHANGE FILES   '
      TYPE *, '    SNKSYS.IND AND SNKCAN.IND, RESPECTIVELY, AND   '
      TYPE *, '    RESET THE RIGHT VOLUMES AND EXCHANGE PUMPING TO'
      TYPE *, '    ZERO. OTHERWISE THIS DATA WILL BE READ FROM THE'
      TYPE *, '    LAST ALLOCATIONS FILE.                         '
      TYPE *, '  '
      PRINT 498
  498 FORMAT('    TO READ ANY OF THESE NEW VALUES ENTER Y/N: '$)
      ACCEPT 500,INI
  500 FORMAT(A1)
      IF(INI.NE.'Y') GO TO 499
      PRINT 496
  496 FORMAT(/'    DO YOU WISH TO READ NEW RESERVOIR SYSTEM TOTALS? Y/N
     1'$)
      ACCEPT 500,INI
      IF(INI.EQ.'Y') IBGS=1
      PRINT 497
  497 FORMAT(/'    DO YOU WISH TO READ NEW DIVERSION STORAGE TOTALS? Y/N
     1 '$)
      ACCEPT 500,INI
      IF(INI.EQ.'Y') IBGD=1
      PRINT 490
  490 FORMAT(/'    DO YOU WISH TO HAVE ZERO DIVERSION STORAGE TOTALS? Y/N
     1 '$)
      ACCEPT 500,INI
      IF(INI.EQ.'Y') IBGD=2
      TYPE *, '  '
      TYPE *, '    IF THIS IS THE FIRST RUN OF THE YEAR, VALUES   '
      TYPE *, '    FOR SEASONAL VOLUME LIMITS ON SOME WATER RIGHTS'
      TYPE *, '    AND ACCUMULATED TOTALS FOR EXCHANGE WELL PUMPS '
```

```
      RERC=RD(L)*(-1.0)
      RD(L)=0.0
      IF(L.EQ.I21) GO TO 321
      L=I21
      GO TO 322
  320 DM(L)=DM(L)-RERC
      RERC=0.0
  321 IF(RERC.GT.1.0) WRITE(OUT,323) RERC
  323 FORMAT(1H1,13H  WARNING! - ,F10.1,' CFS FROM EAGLE ROCK CANAL ',
     1'WAS NOT USED FOR WILLOW CREEK DIVERSIONS & IS UNACCOUNTED FOR')
C
C----SECTION 38-1, PART 1
C****COMPUTE REMAINING DIVERSION OF CROSSCUT CANAL TO TETON AS LOSS
C****BETWEEN HEADWORKS AND TETON RIVER.  IF THE CANAL GAINS (RD < 0),
C****SET RD=0.
C
      RD(I10)=DIV(I10)-CCWT
      IF(RD(I10).LT.0.0) RD(I10)=0.0
C
C----SECTION 38-1, PART 2
C****THE DIVERSION MADE FROM NATURAL FLOW (DM) IS EQUAL TO THE TOTAL
C****DIVERSION LESS THE REMAINING DIVERSION (RD) IF JC IS NOT NEGATIVE.
C****IF JC IS NEGATIVE, THEN RIGHT IS FOR POWER AND DM IS NOT USED
C****SINCE DIV HAS NOT BEEN DEFINED. IF RIGHT IS EITHER A POWER OR
C****RESERVOIR RIGHT (JC NOT = 0) SET REMAINING DIVERSION EQUAL TO ZERO
C****SINCE IT DOES NOT APPLY.  EACH REMAINING DIVERSION (RD) IS CON-
C****VERTED TO ACRE-FEET (AD).  THE REMAINING DIVERSION IS SUBTRACTED
C****FROM EACH DIVERSION'S RESERVOIR STORAGE ACCOUNT (SRM), AND ADDED
C****TO ITS SEASONAL USE (STOR).
C
      DO 5 L=1,ND
      DM(L)=0.0
      IF(JC(L).GE.0)  DM(L)=DM(L)+DIV(L)-RD(L)
      IF(JC(L).NE.0)  RD(L)=0.0
      AD(L)=RD(L)*1.9835
      SRM(L)=SRM(L)-AD(L)
      STOR(L)=STOR(L)+AD(L)
      TDIV(L)=TDIV(L)+(DIV(L)*1.9835)
    5 CONTINUE
C
C----SECTION 38-1, PART 3
C****ZERO THE DIVERSION MADE FROM NATURAL FLOW BY CROSSCUT TO TETON
C****SINCE IT HAS NO NATURAL FLOW RIGHT AND WATER IS SIMPLY BEING
C****TRANSFERRED TO TETON RIVER.
C
      DM(I10)=0.0
C
C----SECTION 39-1, PART 1
C****THE PORTION OF THE FLOW LEAVING EACH REACH THAT IS STORED WATER
C****(SF) IS EQUAL TO THE TOTAL FLOW LESS THE REMAINING NATURAL FLOW
C****(RF, THE NATURAL FLOW NOT DIVERTED BY UPSTREAM RIGHTS), AND THE
C****FLOW RESERVED FOR POWER RIGHTS (PF).
C
      DO 13 L=1,NR
   13 SF(L)=AF(L)-RF(L)-PF(L)
C
C----SECTION 39-1, PART 2
```

```
C****THE IRT ARRAY IS CORRECTED SUCH THAT NO UPSTREAM VALUE IS GREATER
C****THAN A DOWNSTREAM VALUE.  SINCE IRT IS THE NUMBER OF THE LAST
C****RIGHT FILLED IN A REACH FOR WHICH THE REMAINING NATURAL FLOW WAS
C****COMPLETELY USED, EACH REACH UPSTREAM IS SUBJECT TO EITHER THAT
C****RIGHT OR A RIGHT OF EARLIER PRIORITY.  IT CANNOT BE SUBJECT TO A
C****LATER RIGHT REGARDLESS OF WATER SUPPLY.  USE ORIGINAL DATE (IRTP)
C****FOR MINIDOKA TO MILNER REACH (BEFORE DATE WAS REDEFINED FOR EXCESS
C****MINIDOKA TO MILNER GAIN).  OTHERWISE INCORRECT VALUES ABOVE THAT
C****REACH MAY RESULT.  RESET TO REDEFINED DATE (JPM(IRTP2)) AT END.
C
C     IF(MIL.LE.0.OR.FMIL.LE.0.0) GO TO 148
C     IRTP2=IRT(9)
C     IRT(9)=IRTP
C 148 CONTINUE
      DO 83 L=1,NCR
      DO 57 J=1,NR
      IR=IORD(J)
      IF(IR.LE.0.OR.ICF(IR).EQ.2) GO TO 57
      IO=IDS(IR)
      IF(IO.EQ.0) GO TO 57
      IF(IRT(IO).LT.IRT(IR)) IRT(IR)=IRT(IO)
   57 CONTINUE
   83 CONTINUE
C     IF(MIL.LE.0.OR.FMIL.LE.0.0) GO TO 149
C     IRT(9)=JPM(IRTP2)
C 149 CONTINUE
C
C----SECTION 40-1
C****SUM REACH AND DIVERSION DATA FOR SYSTEM TOTALS
C
      DO 63 L=1,20
   63 TT(L)=0.0
      DO 64 L=1,NR
      IF(ICF(L).EQ.2) GO TO 64
      TT(1)=TT(1)+TD(L)
      TT(2)=TT(2)+TRD(L)
      TT(3)=TT(3)+AG(L)
      TT(18)=TT(18)+TRE(L)
   64 CONTINUE
      DO 90 L=1,NP
   90 SAC(L)=0.0
      DO 93 L=1,NSR
      J=MR(L)
   93 SAC(J)=SAC(J)+BRST(L)
      DO 91 L=1,NP
      TT(15)=TT(15)+DRA(L)
      TT(10)=TT(10)+SAC(L)
      TT(11)=TT(11)+RES(L,1)
      TT(12)=TT(12)+RES(L,2)
      CEV(L)=CEV(L)+(EVAP(L)*1.9835)
      TT(17)=TT(17)+CEV(L)
   91 TT(4)=TT(4)+DS(L)
      DO 65 L=1,ND
      TT(5)=TT(5)+DIV(L)
      TT(6)=TT(6)+DM(L)
      TT(7)=TT(7)+RD(L)
      TT(8)=TT(8)+AD(L)
```

```
      TT(16)=TT(16)+SRM(L)
      TT(19)=TT(19)+TDIV(L)
   65 TT(9)=TT(9)+STOR(L)
      DO 96 L=1,NSR
      TT(13)=TT(13)+RST(L)
   96 TT(14)=TT(14)+BRST(L)
      GT(1)=GT(1)+(TT(4)*1.9835)
      IF(SF(9).GT.0.0) GT(2)=GT(2)+(SF(9)*1.9835)
      GT(3)=GT(3)+(TT(15)*1.9835)
      IF(SF(9).LT.0.0) GT(4)=GT(4)+(SF(9)*(-1.9835))
C     GT(5)=GT(5)+(AMIL*1.9835)
      GT(6)=GT(6)+(RIRL*1.9835)
      GT(7)=GT(7)+(WCSL*1.9835)
      GT(8)=GT(8)+(ERC*1.9835)
      GT(9)=CAFGD*1.9835
C
C----SECTION 40-2
C****ON AUGUST 15, RESET RESERVOIR FILL TO ZERO TO ALLOW NEW FILL
C
      IF(JDY(KD).NE.258) GO TO 333
      DO 334 L=1,NSR
      BRST(L)=0.0
      J=MR(L)
  334 SAC(J)=0.0
      TT(14)=0.0
      TT(10)=0.0
  333 CONTINUE
C
C----SECTION 41-1, PART 1
C****ADD EXCHANGE PUMPING TO PREVIOUS TOTAL TO MAINTAIN SEASONAL TOTAL.
C
      DO 176 L=1,NEP
  176 TSE(L)=TSE(L)+(ECH(L)*1.9835)
C
C----SECTION 41-1, PART 2
C****FIND MONTH AND DAY OF MONTH FROM ABSOLUTE DAY OF YEAR.
C
      JD(2)=28
      IF(FEB.LT.0.001) JD(2)=29
      LDY=JDY(KD)
      MON=0
   81 MON=MON+1
      IF(MON.GT.12) GO TO 82
      LDY=LDY-JD(MON)
      IF(LDY.GT.0) GO TO 81
      LDY=LDY+JD(MON)
   82 CONTINUE
C
C----SECTION 41-1, PART 3
C****BEGIN REPORT PRINTOUT - OUTPUT CAN BE MADE AT 3 DIFFERENT PLACES
C****AS KO VARIES THE OUTPUT UNIT (KOUT).  FOR OUTPUT UNITS 3 OR 4,
C****ONLY THE FINAL KED DAYS WILL BE PRINTED OUT.
C
      DO 271 KO=1,4
      OUT=KOUT(KO)
      IF(OUT.LE.0) GO TO 271
      JED=NED-KED
```

```
      IF(OUT.EQ.3.AND.KD.LE.JED) GO TO 271
      IF(OUT.EQ.4.AND.KD.LE.JED) GO TO 271
      IF(OUT.EQ.7.AND.KD.LE.JED) GO TO 271
C
C----SECTION 41-2
C****PRINT OUT REACH DATA.  FIND ACTUAL DATE (UNLAGGED) FOR WHICH DATA
C****WAS MEASURED AT EACH REACH (OM AND LDAY).
C
      CALL DATE(RUNDATE)
      IF(KD.GT.NED) WRITE(OUT,165) OM(MON),LDY,JYE(KD),RUNDATE
  165 FORMAT(1H1,31X,52HWATER DISTRICT 01 - SNAKE RIVER FLOW ACCOUNTING
     1 -  ,A3,I3,1H,,I5,14H   (PROJECTED),10X,A9)
      IF(KD.LE.NED) WRITE(OUT,18) OM(MON),LDY,JYE(KD),RUNDATE
   18 FORMAT(1H1,31X,'WATER DISTRICT 01 - SNAKE RIVER FLOW ACCOUNTING
     1 -  ',A3,I3,1H,,I5,24X,A9)
      WRITE(OUT,164)
  164 FORMAT(/ 6X,'REACH FLOWS IN CFS',8X,
     1 ' ACTUAL  NATURAL   ACTUAL RMAINING    POWER   STORED RESRVOIR
     2 NATURAL   TOTAL     REACH'/  34X,' DATE     FLOW     FLOW NAT
     3FLOW     FLOW     FLOW     EVAP FLOW DIV  RCH DIV     GAIN LAST R
     4IGHT'/)
      DO 58 I=1,NR
      L=IORD(I)
      IF(L.LE.0.OR.L.EQ.29.OR.ICF(L).EQ.2) GO TO 58
      IL=LAG(L)
      LYEAR=JYE(KD+IL)
      LDAY=JDY(KD+IL)
      FEB=LYEAR/4.0
      IFEB=FEB
      FEB=FEB-IFEB
      JD(2)=28
      IF(FEB.LT.0.001) JD(2)=29
      MO=0
  270 MO=MO+1
      IF(MO.GT.12) GO TO 269
      LDAY=LDAY-JD(MO)
      IF(LDAY.GT.0) GO TO 270
      LDAY=LDAY+JD(MO)
  269 CONTINUE
      ER=0.0
      J=IRS(L)
```

```
      IF(J.GT.0) ER=EVAP(J)
      M=IRT(L)
      C=BLANK
      IF(ICF(L).EQ.1) C=AST
      WRITE(OUT,19)L,(RCHNM(L,J),J=1,6),C,OM(MO),LDAY,F(L),AF(L),RF(L),P
     1F(L),SF(L),ER,TD(L),TRD(L),AG(L),IDATE(M)
   19 FORMAT(2X,I2,2X,6A4,1X,A1,1X,A3,I3,9F9.0,I11)
   58 CONTINUE
      WRITE(OUT,22) (TT(L),L=1,3)
   22 FORMAT(/26X,42H* - INDICATES FLOW ESTIMATED, NOT MEASURED,16X,
     1  9HTOTALS   ,3F9.0)
C
C----SECTION 42-1
C****PRINT OUT RESERVOIR DATA
C
      WRITE(OUT,97)
   97 FORMAT(  /6X,73HRESERVOIR     PREVIOUS AF CURRNT AF  CHNG CFS ACCR
     1D CFS  TOTAL AF EVAP AF,  3X, 50HPRIORITY  RESERVOIR         AF RI
     2GHT   AF STORED  /)
      DO 100 L=1,NP
      I=MR(L)
  100 WRITE(OUT,62) L,(RESNM(L,J),J=1,4),(RES(L,J),J=1,2),DS(L),DRA(L),
     2SAC(L),CEV(L),L,(RESNM(I,J),J=1,4),RST(L),BRST(L)
   62 FORMAT(2X,I2,1X,4A4,5F10.1,F8.1,3X,I5,3X,4A4,2F12.1)
      L=NP+1
      I=MR(L)
      WRITE(OUT,66) L,(RESNM(I,J),J=1,4),RST(L),BRST(L)
   66 FORMAT(82X,I5,3X,4A4,2F12.1)
      L=NP+2
      I=MR(L)
      WRITE(OUT,101) TT(11),TT(12),TT(4),TT(15),TT(10),TT(17),L,(RESNM(I
     1,J),J=1,4),RST(L),BRST(L)
  101 FORMAT(5X,5HTOTAL,11X,5F10.1,F8.1,3X,I5,3X,4A4,2F12.1)
      L=NP+3
      I=MR(L)
      WRITE(OUT,66) L,(RESNM(I,J),J=1,4),RST(L),BRST(L)
      L=NP+4
      I=MR(L)
      WRITE(OUT,119) L,(RESNM(I,J),J=1,4),RST(L),BRST(L)
  119 FORMAT(22X,49HCHANGE IN   STORAGE  STO PAST     TOTAL    UNACCT,
     1 10H  AM FALLS,1X,I5,3X,4A4,2F12.1)
      L=NP+5
      I=MR(L)
      WRITE(OUT,120) L,(RESNM(I,J),J=1,4),RST(L),BRST(L)
  120 FORMAT(24X,47HCONTENT  DIVERTED    MILNER    STORED    STORED,
     1 10H GAIN DIFF,1X,I5,3X,4A4,2F12.1)
      L=NP+6
      I=MR(L)
      WRITE(OUT,66) L,(RESNM(I,J),J=1,4),RST(L),BRST(L)
```

```
      L=NP+7
      I=MR(L)
      WRITE(OUT,121) GT(1),TT(9),(GT(J),J=2,4),GT(9),L,
     1  (RESNM(I,J),J=1,4),RST(L),BRST(L)
  121 FORMAT(21H   YEAR-TO-DATE AF   ,6F10.1,1X,I5,3X,4A4,2F12.1)
C
C----SECTION 43-1
C****PRINT DIVERSION DATA - IF THIS DATA IS NOT DESIRED EACH DAY, IT
C****CAN BE PRINTED EVERY JDP DAYS.  CHANGE DIVERSION DATA TO INTEGERS
C****(II) FOR PRINTOUT.  ELIMINATE RESERVOIR (JC > 0) AND UNMEASURED
C****FLOW (JC = -1) DIVERSIONS FROM PRINTOUT.
C
      KK=KK+1
      IF(KK.NE.JDP.AND.KD.NE.17.AND.KD.NE.NED) GO TO 271
      KK=0
      IF(TT(5).LE.0.1) GO TO 271
      K=0
      DO 118 L=1,ND
      IF(JC(L).NE.0.AND.JC(L).NE.-2) GO TO 118
      K=K+1
      II(1,K)=DIV(L)+0.5
      II(2,K)=RD(L)+0.5
      II(3,K)=STOR(L)+0.5
      II(4,K)=SRM(L)+0.5
      IF(SRM(L).LT.0.0) II(4,K)=SRM(L)-0.5
      DO 307 J=1,4
  307 DNAM(K,J)=DIVNM(L,J)
  118 CONTINUE
      NK=K
C
C----SECTION 43-1, PART 1B
C****DIVIDE DIVERSIONS INTO THREE EQUAL PARTS FOR COLUMNS ON REPORT
C
      AKE=NK/3.
      KE=AKE
      R=AKE-KE
      IF(R.GT.0.1) KE=KE+1
      KEE=KE*2
C
C----SECION 43-1, PART 1C
C****PRINT DIVERSION DATA
C
      IF(KOD.GT.0) GO TO 109
      WRITE(OUT,20) OM(MON),LDY,JYE(KD),RUNDATE
   20 FORMAT(1H1,45X,23HDIVERSION    DATA -    ,A3,I3,1H,,I5,41X,A9)
      WRITE(OUT,110)
  110 FORMAT(/3(23X,21HCFS  CFS   AF     AF   )/3(44H DIVERSION
     1   DIVN STOR  USED   RMNG)/)
      DO 112 L=1,KE
      LKE=L+KE
      LKEE=L+KEE
      IF(LKEE.GT.NK) GO TO 295
      WRITE(OUT,111) L,(DNAM(L,J),J=1,4),(II(K,L),K=1,4),
```

```
     1       LKE ,(DNAM(L+KE,J),J=1,4),(II(K,L+KE),K=1,4),
     2       LKEE ,(DNAM(L+KEE,J),J=1,4),(II(K,L+KEE),K=1,4)
 111 FORMAT(3(1X,I3,1X,4A4,2I5,I6,I7))
      GO TO 112
 295 WRITE(OUT,296) L,(DNAM(L,J),J=1,4),(II(K,L),K=1,4),
     1       LKE ,(DNAM(L+KE,J),J=1,4),(II(K,L+KE),K=1,4)
 296 FORMAT(2(1X,I3,1X,4A4,2I5,I6,I7))
 112 CONTINUE
C
C----SECTION 44-1, PART 1
C****PRINT FOOTNOTES FOR SPECIAL CANALS WHOSE STORAGE IS SUMMED WITH
C****ANOTHER CANAL BECAUSE OF COMMON RIGHTS.
C
      WRITE(OUT,327)
 327 FORMAT('   STORAGE USED COMBINED WITH (1)ANDERSON, (2)DILTS,
     1(3)RIGBY, (3A)W LABL & LI, (4)BUTTE & MARKET L, (5)PEOPLES, (6)NEW
     2 LAVA SIDE',/'   (7)RIVERSIDE, (8)MINIDOKA NTH S, (9)NORTHSIDE
     3TWIN F, (10)MARYSVILLE, (11)CHENEY, (12)BRAMWELL, (13)BURGESS, (14
     3)SNAKE R VY', /'   (15)TETON IRR, (16)FALL R, (17)GREAT WESTERN
     4, (18)ST ANTHONY UN, (19)NEWBY #1, (20)SQUIRREL #1, AND (21)MIL
     5IRRIG & T.F.S.S.',/'   (22)WOODVILLE CANAL'/)
C
C----SECTION 44-1, PART 2
C****PRINT MISCELLANEOUS DATA AND DAILY TOTALS
C
      WRITE(OUT,147) AF(29),ERC,GT(8),AF(37)
 147 FORMAT(1H1///1X,'EAGLE RK DUMP:',F7.0,2X,'CFS',3X,'EAGLE
     1 RK CREDIT:',F7.0,2X,'CFS',2X,'AF TOTAL:'F10.1,2X,'DRY BED:'
     2F7.0,2X,'CFS'/)
      WRITE(OUT,362) RIRL,GT(6),WCSL,GT(7)
 362 FORMAT(1X,'RIRIE LOSS:',F7.0,2X,'CFS',2X,'AF TOTAL:',F10.1,
     12X,'WILLOW CR LOSS:',F7.0,2X,'CFS',3X,'AF TOTAL:',F10.1/)
      WRITE(OUT,365) XCUT,AF(26),AF(27)
 365 FORMAT(1X,'XCUT AT HEAD:',F7.0,2X,'CFS',2X,'XCUT AT MID:',
     1F7.0,2X,'CFS',2X,'XCUT AT END:',F7.0,2X,'CFS'/)
      WRITE(OUT,329) AF(43),AF(42)
 329 FORMAT(1X,'EAST TETON CANAL:',F7.0,2X,'CFS',2X,'SOUTH BRANCH
     1FALL RIVER CANAL:',F7.0,2X,'CFS'/)
```

```
      WRITE(OUT,326) AF(45),AF(44),VRD(10),VRD(11)
  326 FORMAT(1X,'SAND CK TO RESERVATION:',F7.0,2X,'CFS',2X,
     1'RESERVATION DROP:',F7.0,2X,'CFS',3X,'TRIBAL VOLUME:',
     2 F10.1,2X,'AF',2X,'NON-TRIBAL VOLUME:',F10.1,2X,'AF'/)
      WRITE(OUT,370) AF(40),SPCKGN,VRD(12)
  370 FORMAT(1X,'SPRING CREEK:',F7.0,2X,'CFS',2X,'SPRING
     1CR GAIN:',F7.0,2X,'CFS',2X,'SWID AF TOTAL:',F10.1/)
C     WRITE(OUT,375) GMIL,AMIL,GT(5)
C 375 FORMAT(1X,'MID RETURN: CFS GAIN',F6.0,2X,'CFS CREDIT:',F5.0,
C    12X,'AF TOTAL:',F9.1/)
C
C----SECTION 44-2, PART 1
C****DIVIDE EXCHANGE PUMPS INTO THREE EQUAL PARTS FOR COLUMNS ON REPORT
C
      AKE=NEP/3.
      JE=AKE
      R=AKE-JE
      IF(R.GT.0.1) JE=JE+1
      JEE=JE*2
C
C----SECTION 44-2, PART 2
C****PRINT EXCHANGE PUMP DATA.
C
C     IF(TT(18).LE.0.1) GO TO 271
      WRITE(OUT,177) OM(MON),LDY,JYE(KD)
  177 FORMAT(////46X,24HEXCHANGE PUMP DATA -    ,A3,I3,1H,,I5)
      WRITE(OUT,178)
  178 FORMAT(/3(44H EXCHANGE PUMP      CFS PUMPED  AF YR TOTAL )/)
      DO 179 L=1,JE
      JKE=L+JE
      JKEE=L+JEE
      IF(JKEE.LE.NEP) THEN
             WRITE(OUT,181) L,(EXCNM(L,J),J=1,4),ECH(L),TSE(L),JKE,
     1       (EXCNM(JKE,J),J=1,4),ECH(JKE),TSE(JKE),JKEE,
     2       (EXCNM(JKEE,J),J=1,4),ECH(JKEE),TSE(JKEE)
  181        FORMAT(3(I3,1X,4A4,F10.0,2X,F10.1,2X))
             ENDIF
      IF(JKEE.GT.NEP) THEN
             WRITE(OUT,183) L,(EXCNM(L,J),J=1,4),ECH(L),TSE(L),JKE,
     1       (EXCNM(JKE,J),J=1,4),ECH(JKE),TSE(JKE)
  183        FORMAT(2(I3,1X,4A4,F10.0,2X,F10.1,2X))
             ENDIF
  179 CONTINUE
      GO TO 271
C
C----SECTION 44-3
C****IF KOD IS GREATER THAN ZERO, MORE DETAILED OUTPUT WILL BE MADE OF
C****DIVERSION DATA.
C
  109 CONTINUE
      WRITE(OUT,20) OM(MON),LDY,JYE(KD)
      WRITE(OUT,113)
```

```
  113 FORMAT(//48X,'CFS',4X,'CFS NATURAL',2X,'CFS STORAGE',3(1X,11H AF
     1 STORAGE),6X,'AF' / 10X,'DIVERSION',16X,'REACH',7X,'DIVRTD ',
     23(3X,'DIVERSION'),2X,'USED TO DATE REMAINING  DIVRTD TO DATE'/)
      WRITE(OUT,21) (L,(DIVNM(L,J),J=1,4),IRCH(L),DIV(L),DM(L),RD(L),
     1AD(L),STOR(L),SRM(L),TDIV(L),L=1,ND)
   21 FORMAT(1X,I7,2X,4A4,4X,I9,7F12.1)
      WRITE(OUT,67) (TT(L),L=5,9),TT(16),TT(19)
   67 FORMAT(/10X,'TOTAL',24X,7F12.1)
  271 CONTINUE
      OUT=KOUT(1)
C
C----SECTION 45-1
C****WRITE DIVERSION, RESERVOIR, FLOW, AND MISC DATA ON TEMPORARY FILE
C****FOR ADDITION TO ALLOCATION FILE, FOR ALL NON-PROJECTED DAYS.
C
      IF(KD.GT.NED) GO TO 348
      WRITE(16,260) (IDN(L),JDT(KD),DIV(L),RD(L),STOR(L),SRM(L),
     1 TDIV(L),L=1,ND)
  260 FORMAT(I8,1HD,I7,5F10.1)
      DO 261 L=1,NP
  184 WRITE(16,262) IRESN(L),JDT(KD),CEV(L),EVAP(L),DRA(L),SAC(L),
     1 RES(L,2)
  262 FORMAT(I8,1HR,I7,5F10.1)
  261 CONTINUE
      DO 272 L=1,NR
      M=IRT(L)
      WRITE(16,263) JRN(L),JDT(KD),F(L),AF(L),SF(L),AG(L),IDATE(M)
  263 FORMAT(I8,1HF,I7,4F10.1,I10)
  272 CONTINUE
      DO 265 L=1,4
      K1=L*5-4
      K2=K1+4
      IF(L.EQ.4) K2=K2-4
  265 WRITE(16,264) L,JDT(KD),(BRST(I),I=K1,K2)
  264 FORMAT(7H9999990,I1,1HM,I7,5F10.1)
      L=5
      WRITE(16,264) L,JDT(KD),(GT(I),I=1,5)
      L=6
      WRITE(16,264) L,JDT(KD),(GT(I),I=6,9)
      DO 273 L=7,9
      K1=((L-6)*5)-4
      K2=K1+4
  273 WRITE(16,264) L,JDT(KD),(VRD(I),I=K1,K2)
      L=10
      WRITE(16,266) L,JDT(KD),(VRD(I),I=16,20)
      DO 274 L=11,15
      K1=((L-10)*5)-4
      K2=K1+4
  274 WRITE(16,266) L,JDT(KD),(TSE(I),I=K1,K2)
  266 FORMAT(6H999999,I2,1HM,I7,5F10.1)
C
C----SECTION 45-2
C****CREATE FILE FOR DECTALK
```

```
C
  348 IF(DECTALK.NE.'Y') GO TO 72
      IF(KD.LT.NED) GO TO 72
      IF(KD.EQ.NED) THEN
          OMNED=OM(MON)
          NEDDAY=LDY
          NEDYR=JYE(KD)
          END IF
      DO 345 L=1,ND
      IF(JC(L).NE.0) GO TO 345
      IR=IRCH(L)
      IF(IR.LE.0) GO TO 345
      KDPIL=KD+LGD(IR)
      IF(KDPIL.NE.NED) GO TO 345
      M=IRT(IR)
      MO=IM(M)
      DNAT=DIV(L)-RD(L)
      WRITE(17,347) IDN(L),NEDDAY,OMNED,NEDYR,DIV(L),DNAT,RD(L),
     1 STOR(L),SRM(L),ID(M),OM(MO),IY(M),DVNAM(L)
  347 FORMAT(I8,1HD,I2,1H-,A3,1H-,I4,5F10.0,I2,1H-,A3,1H-,I4,A49)
  345 CONTINUE
      DO 349 L=1,NR
      IF(ICF(L).EQ.1) GO TO 349
      KDPIL=KD+LAG(L)
      IF(KDPIL.NE.NED) GO TO 349
      M=IRT(L)
      MO=IM(M)
      WRITE(17,350) JRN(L),NEDDAY,OMNED,NEDYR,AF(L),F(L),SF(L),
     1 RF(L),PF(L),ID(M),OM(MO),IY(M),FLONAM(L)
  350 FORMAT(I8,1HF,I2,1H-,A3,1H-,I4,5F10.0,I2,1H-,A3,1H-,I4,A49)
  349 CONTINUE
      DO 351 L=1,NP
      KDPIL=KD+LGG(L)
      IF(KDPIL.NE.NED) GO TO 351
      WRITE(17,352) IRESN(L),NEDDAY,OMNED,NEDYR,RES(L,2),DS(L),
     1 DRA(L),SAC(L),CEV(L),NEDDAY,OMNED,NEDYR,RESNAM(L)
  352 FORMAT(I8,1HR,I2,1H-,A3,1H-,I4,5F10.0,I2,1H-,A3,1H-,I4,A49)
  351 CONTINUE
C
C----SECTION 46-1, PART 1
C****CONTINUE TO NEXT DAYS' CALCULATIONS
C
      PRINT *,' '
      PRINT *,' COMPUTATIONS COMPLETED FOR ANOTHER DAY '
      PRINT *,' '
   72 CONTINUE
      PRINT *,' '
      PRINT *,' ALL DAILY COMPUTATIONS COMPLETED       '
      PRINT *,' '
C
C----SECTION 46-1, PART 2
C****IF LRA > 0, A LISTING IS MADE OF THE FIRST LRA RECORDS FROM THE
C****TEMPORARY OUTPUT FILE FOR DEBUG PURPOSES.
C
      IF(LRA.LE.0) GO TO 45
      LR=0
      WRITE(OUT,153)
```

```
03012     153 FORMAT(1H1)
03013         ENDFILE 16
03014         REWIND 16
03015     152 READ(16,150,END=45) NMR,TYP,NDT,(FI(I),I=1,10)
03016     150 FORMAT(I8,A1,I7,10F10.1)
03017         WRITE(OUT,151) NMR,TYP,NDT,(FI(I),I=1,10)
03018     151 FORMAT(6X,I8,A1,I7,10F10.1)
03019         LR=LR+1
03020         IF(LR.LE.LRA) GO TO 152
03021      45 STOP
03022         END
```

PROGRAM SECTIONS

	Name	Bytes	Attributes
0	$CODE	28532	PIC CON REL LCL SHR EXE RD NOWRT QUAD
1	$PDATA	7673	PIC CON REL LCL SHR NOEXE RD NOWRT QUAD
2	$LOCAL	968376	PIC CON REL LCL NOSHR NOEXE RD WRT QUAD
	Total Space Allocated	1004581	

ENTRY POINTS

Address	Type	Name	References
0-00000000		SNKWRA$MAIN	

VARIABLES

Address	Type	Name	Attributes	References							
2-000EC16C	R*4	AFETPH		1464=	1465(2)=	1736					
**	R*4	AKE		2792=	2793	2794	2864=	2865	2866		
**	R*4	AMFG		1734=	1735	1736(2)=	1737	1739(2)=	1748		
**	R*4	AMFGC		1738=	1739	1740					
**	R*4	AMIL		1942=							
2-000EC164	R*4	AREA		1459=	1461	1462(2)=	1463	1467			
**	R*4	AREAPH		1463=	1464						
2-000EC168	R*4	AREATOT		1461=	1463						
2-000EBE54	R*4	AST		86D	2713						
2-000EBE50	R*4	BLANK		86D	2712						
**	R*4	C		2712=	2713=	2714					
2-000EC128	R*4	CAFGD		1269=	1737(2)=	1738	1739	1740(3)=	2626		
**	R*4	CCWS		1557=	1558(2)=	1559	1650=	1652(2)=	1653		
2-000EC188	R*4	CCWT		1651=	2514						
**	R*4	CHK		2189=	2190(2)						
**	R*4	CORDV		2399=	2400	2401	2402	2403	2404=	2405	2409
				2410	2411	2414					

```
     **        R*4   CORNF          2334=     2335      2336      2337      2338      2345=     2346      2347
                                    2348      2349      2356=     2357      2358      2359      2360      2367=
                                    2368      2369      2370      2371      2372      2373      2374      2381=
                                    2382      2383      2384      2385      2393=     2395      2396      2397
                                    2398(2)=  2400      2401(2)=  2405      2406      2407      2409      2411(2)=
                                    2412      2413      2417      2424=     2425      2426      2427      2428
     **        R*4   D2             1763=
     **        R*4   DBC            1632=     1633      1634
  2-000EBF14   R*4   DECTALK         462=      463       2956

     **        R*4   DNAT           2971=     2972
  2-000EC184   R*4   DSTOR          1617=     1618      1621=     1623
  2-000EC0D8   R*4   DTEMP           922=      933       949=      980       987
  2-000EBD8B   CHAR  DVNAME           29       471=      476
     **        R*4   ER             2708=     2710=     2714

  2-000EC198   R*4   ERC            1682=     1684(2)=  1685      1686      2485      2625      2837
  2-000EC17C   R*4   ERL            1543      1677=     1681
  2-000EC0F8   R*4   ETEMP          1095=     1127      1134
     **        R*4   EVNET          1451=     1452(2)=  1453      1464      1467
     **        R*4   EVPR           1506=     1509=     1550      1619=     1622=     1623

  2-000EC0E8   R*4   EXTEMP         1034=     1045      1057=     1080
     **        R*4   FB             1959=     1960      1961(2)=  1962
     **        R*4   FEB             881=      882       883(2)=   884       907=      908       909(2)=   910
                                    1019=     1020      1021(2)=  1022      1290=     1291      1292(2)=  1389
                                    2650      2696=     2697      2698(2)=  2700
  2-000EBDED   CHAR  FLONAME          29       490=      493       498
     **        R*4   FRCF           1331=     1332(2)

  2-000EC0BC   R*4   FTEMP           826=      861       868
  2-000EC140   R*4   HEADRES         1343=     1348(2)   1349
     **        I*4   I               355(3)=   602=      603       609       635       636       646       663=
                                     666(2)=   672       685       823=      824       832       919=      929
                                     930       933       946=      947(4)    954       955       957       958
                                     970(2)    981(2)    982       983       987       1031=     1041      1042
                                    1045      1055=     1061      1062      1063      1064      1071(2)   1080
                                    1093=     1100      1101      1102      1103      1110(2)   1111(2)   1120(2)
                                    1121      1122      1126      1127      1128(2)   1129      1130      1134
                                    1135      1136      1137      1138      1142      1155=     1156(2)   1157
                                    1158(2)   1159=     1160(2)   1184=     1195      1196      1197      1198
                                    1201      1202      1203      1213=     1214      1237=     1247=     2690=
                                    2691      2730=     2731      2735=     2736      2739=     2740      2744=
                                    2745      2747=     2748      2752=     2753      2757=     2758      2760=
                                    2761      2935(2)=  2938(2)=  2940(2)=  2944(2)=  2946(2)=  2950(2)=  3015(2)=
                                    3017(2)=
  2-000EBF48   I*4   I1              718=      1815(2)   1817      1818(2)   1820(3)   1901      2424      2438
                                    2439      2470(2)
  2-000EBF6C   I*4   I10             727=      1330      1334      1335(2)   1558(2)   1652(2)   2514(2)   2515(2)
                                    2543

  2-000EBF70   I*4   I11             728=      1836(2)
  2-000EBF74   I*4   I12             729=      1836      1837
  2-000EBF78   I*4   I13             730=      1838      1839
  2-000EBF7C   I*4   I14             731=      1838(2)
  2-000EBF80   I*4   I15             732=      1840(2)   2356
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  2-000EBF84  I*4  I16          733=    1840      1841      2356
  2-000EBF88  I*4  I17          734=    1842(2)   2334
  2-000EBF8C  I*4  I18          735=    1844(2)   2345
  2-000EBF90  I*4  I19          736=    1844      1845      2345
  2-000EBF4C  I*4  I2           719=    1815      1823

  2-000EBF94  I*4  I20          737=     996(2)    997       998       999      2487      2494
  2-000EBF98  I*4  I21          738=    2487      2500      2501
  2-000EBF9C  I*4  I22          739=     996       998(2)   1683      2200      2487
  2-000EBFA0  I*4  I23          740=    1846(2)
  2-000EBFA4  I*4  I24          741=    1846      1850

  2-000EBFA8  I*4  I25          742=    1846      1847
  2-000EBFAC  I*4  I26          743=    1846      1848
  2-000EBFB0  I*4  I27          744=    1846      1849
  2-000EBFB4  I*4  I28          745=    1852(2)
  2-000EBFB8  I*4  I29          746=    1852      1853

  2-000EBF50  I*4  I3           720=    1824      1825
  2-000EBFBC  I*4  I30          747=    1855(2)
  2-000EBFC0  I*4  I31          748=    1857(2)
  2-000EBFC4  I*4  I32          749=    1316
  2-000EBFC8  I*4  I33          750=    1316

  2-000EBFCC  I*4  I34          751=    1859      1860
  2-000EBFD0  I*4  I35          752=    1859(2)
  2-000EBFD4  I*4  I36          753=    1861(2)
  2-000EBFD8  I*4  I37          754=    1861      1862
  2-000EBFDC  I*4  I38          755=    2486

  2-000EBFE0  I*4  I39          756=    2486
  2-000EBF54  I*4  I4           721=    1824(2)
  2-000EBFE4  I*4  I40          757=    1863(2)
  2-000EBFE8  I*4  I41          758=    1863      1864
  2-000EBFEC  I*4  I42          759=    1867(2)   2393

  2-000EBFF0  I*4  I43          760=    1867      1869      2393      2399
  2-000EBFF4  I*4  I44          761=    1867      1870      2393      2399
      **      I*4  I45          762=
  2-000EBFF8  I*4  I46          763=    1880(2)
  2-000EBFFC  I*4  I47          764=    1882(2)

  2-000EC000  I*4  I48          765=    1882      1883
  2-000EC004  I*4  I49          766=    1880      1881
  2-000EBF58  I*4  I5           722=    1323(2)   1824      1826
  2-000EC008  I*4  I50          767=    1863      1865
  2-000EC00C  I*4  I51          768=    1884(2)   2367

  2-000EC010  I*4  I52          769=    1884      1885      2367
  2-000EC014  I*4  I53          770=    1889(2)   2381
  2-000EC018  I*4  I54          771=    1889      1890      2381
  2-000EC01C  I*4  I55          772=    1884      1886      2367
  2-000EC020  I*4  I56          773=    1884      1887      2367

  2-000EC024  I*4  I57          774=    1884      1888      2367
  2-000EC028  I*4  I58          775=    1863      1866
      **      I*4  I59          776=
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  2-000EBF5C  I*4  I6                    723=     1324(2)
  2-000EC02C  I*4  I60                   777=     1852      1854

  2-000EC030  I*4  I61                   778=     1857      1858
  2-000EC034  I*4  I62                   779=     1846      1851
  2-000EC038  I*4  I63                   780=     1855      1856
  2-000EC03C  I*4  I64                   781=     1891(2)
  2-000EC040  I*4  I65                   782=     1891      1892

  2-000EC044  I*4  I66                   783=     1891      1893
  2-000EC048  I*4  I67                   784=     1867      1871      2393      2399
  2-000EC04C  I*4  I68                   785=     2424
  2-000EC050  I*4  I69                   786=     2424
  2-000EBF60  I*4  I7                    724=     1824      1827

  2-000EC054  I*4  I70                   787=     2424
  2-000EC058  I*4  I71                   788=     2424
  2-000EC05C  I*4  I72                   789=     2424
  2-000EC060  I*4  I73                   790=     1867      1872
  2-000EC064  I*4  I74                   791=     1824      1828

  2-000EC068  I*4  I75                   792=     1898(2)
     **       I*4  I76                   793=
  2-000EC06C  I*4  I77                   794=     1898      1899
  2-000EC070  I*4  I78                   795=     1867      1873      2393
  2-000EC074  I*4  I79                   796=     1867      1874      2393

  2-000EBF64  I*4  I8                    725=     1830      1831(2)   1833(3)   1904      2438      2450      2471(2)
  2-000EC078  I*4  I80                   797=     1867      1875      2393
  2-000EC07C  I*4  I81                   798=     1867      1876      2393      2404
  2-000EC080  I*4  I82                   799=     1867      1877      2393      2399
  2-000EC084  I*4  I83                   800=     1867      1878      2393      2399

  2-000EC088  I*4  I84                   801=     1867      1879      2393      2399
  2-000EC08C  I*4  I85                   802=     1902(2)   1905(2)   2470      2471      2474
     **       I*4  I86                   803=
  2-000EC090  I*4  I87                   804=     1894(2)
  2-000EC094  I*4  I88                   805=     1894      1895

  2-000EC098  I*4  I89                   806=     1894      1896
  2-000EBF68  I*4  I9                    726=      947      1330      1332(2)   1333(2)   1335      1842      1843
                                        2334
  2-000EC09C  I*4  I90                   807=     1894      1897
  2-000EC0A0  I*4  I91                   808=     1343      1347      1348(2)   1349
  2-000EC0A4  I*4  I92                   809=      947      1349      2324

     **       I*4  IA                    586=      587       588       589       591       592       600
  2-000EBEFC  I*4  IANS                  407=      408       484=      485       502=      503       518=      519
                                        1210=     1211
  2-000EBF2C  I*4  IB                    584=      586       591       592=
  2-000EBEA0  I*4  IBG                   225=
  2-000EBEB4  I*4  IBGD                  235=      264=      269=      398       1182

  2-000EBEBC  I*4  IBGE                  237=      288=      1250
  2-000EBEB0  I*4  IBGS                  234=      259=      392       1206      1223
  2-000EBEB8  I*4  IBGV                  236=      283=      1240
     **       I*4  IC                   1787=     1788(2)   1789(3)   1790      1792      2084=     2085      2086
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                                    2088      2162=     2163      2164      2168(2)   2189      2200      2215(2)
                                    2217
  2-000EBE78  I*4  IDB               225=      2217      2237=     2242=

  2-000EBEF8  I*4  IDC               400=      402       403
      **      I*4  IFB              1960=      1961
      **      I*4  IFEB              882=      883       908=      909       1020=     1021      1291=     1292
                                    2697=      2698
  2-000EBE70  I*4  IFR               225=      2226
      **      I*4  IG               2169=      2171(2)   2173(2)=  2174      2176(2)   2205=     2207(2)   2208(3)
                                    2209(2)=   2210      2212(2)   2213(3)

      **      I*4  IJ               1524=      1525(2)   1534=     1535
      **      I*4  IL               1303=      1304      1360=     1361      1380=     1381      1494=     1495
                                    1703=      1704      1956=     1957      2693=     2694      2695
  2-000EBE80  I*4  ILS               225=      445=      570       594       634
      **      I*4  IMN               536=      594       636       676=      679
  2-000EBF10  I*4  INA               452=      698

  2-000EBEC0  I*4  INI               252=      254       258=      259       263=      264       268=      269
                                     282=      283       287=      288
      **      I*4  IO               1597=      1598      1599(2)   1790=     1791      1792(2)   2119=     2120
                                    2121(2)    2122(2)   2134=     2135      2136(2)   2573=     2574      2575(2)
      **      I*4  IR               1301=      1302      1303      1358=     1359      1360      1425=     1426
                                    1427(2)    1434=     1435      1436(2)   1613=     1614      1615      1616
                                    1623(5)    1955=     1956      1971      2086=     2088      2092(2)   2108=
                                    2109(2)    2110(3)   2111(3)   2112(2)   2113      2114(3)   2115(2)   2116(2)
                                    2118       2119      2121      2122      2132=     2133(2)   2134      2136(2)
                                    2164=      2165      2166      2169      2189      2191(2)   2200      2205
                                    2216(2)    2217(2)   2571=     2572(2)   2573      2575(2)   2965=     2966
                                    2967       2969
      **      I*4  IS               1507=      1508      1509      1616=     1617(2)   1618      1619
      **      I*4  ISKIP             469=      471       473=      487=      505=      507       508=      520=

  2-000EBF30  I*4  IT                585=      586       588       589=
  2-000EC0CC  I*4  ITD               880=      884=      887
  2-000EBF1C  I*4  ITN               471=      474       475       490=      492       497(2)    498       507=
                                     509       510
      **      I*4  IVV              1977=      1978      1979(2)   1980      1981      1984      1988      1992
                                    1996       1997      1998      1999      2000      2001(2)
      **      I*4  IW               1456=      1457      1458(2)=  1459(3)

      **      I*4  J                 346(2)=   348(2)=   378(2)=   421(2)=   480(2)=   514(2)=   636(4)=   664=
                                     665       676       677       678       679(5)    683       705=      706
                                     707       710       824=      836       837       838       851(2)    860
                                     862(2)    863       864       868       1162=     1163(2)   1481=     1482(2)
                                    1491=      1492      1700=     1701(2)   1954=     1955      2087=     2088
                                    2570=      2571      2597=     2598(2)   2634=     2635      2709=     2710(2)
                                    2714(2)=   2731(6)=   2736(2)=   2740(2)=   2745(2)=   2748(2)=   2753(2)=   2758(2)=
                                    2761(4)=   2784=      2785(2)   2811(6)=   2816(4)=   2882(6)=   2888(4)=   2905(2)=
  2-000EC1F4  I*4  JCOUNT           2057=      2235(2)=  2236      2238
      **      I*4  JDI               903=      921       928=      931=      1015=     1033      1040=     1043=
                                    1183=      1185      1194=     1199=
  2-000EBE88  I*4  JDP               225=      2772
      **      I*4  JE               2865=      2866      2867(2)=  2868      2878      2879

      **      I*4  JED              2668=      2669      2670      2671
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      **        I*4  JEE          2868=     2880
      **        I*4  JFI           818=      825       829=      853=
      **        I*4  JKE          2879=     2882(4)   2888(4)
      **        I*4  JKEE         2880=     2881      2882(4)   2887

      **        I*4  JRI          1091=     1094      1098=     1112=
      **        I*4  JTI           902=      920       924=      926=      948       952=      972=      1014=
                                  1032      1036=     1038=     1056      1060=     1072=
      **        I*4  K             433=      571(2)=   572       576=      679(4)=   2130=     2251=     2253=
                                  2254      2775=     2778(2)=  2779      2780      2781      2782      2783
                                  2785      2787      2811(6)=  2816(4)=
      **        I*4  K1           2932=     2933      2935      2942=     2943      2944      2948=     2949
                                  2950
      **        I*4  K2           2933=     2934(2)=  2935      2943=     2944      2949=     2950

      **        I*4  KA           1477=     1478(2)=  1479      1481
      **        I*4  KBM           550=      551(2)=   552       553       555       564       594       636
                                   677=      679
      **        I*4  KD           1285=     1290      1304      1325      1361      1381      1388      1495
                                  1704      1722      1957      2631      2651      2669      2670      2671
                                  2678(2)   2681(2)   2694      2695      2772(2)   2802      2874      2900
                                  2917      2918      2922      2928      2935      2938      2940      2944
                                  2946      2950      2957      2958      2961      2967      2978      2987
      **        I*4  KDPIL        1304=     1305      1308      1361=     1362      1365      1381=     1382
                                  1394      1396(3)   1398      1399      1400      1401      1403      1404
                                  1405      1406(2)=  1407      1495=     1496      1505      1516      1578
                                  1591      1704=     1705      1957=     1958      1959      2967=     2968
                                  2978=     2979      2987=     2988
      **        I*4  KE           2793=     2794      2795(2)=  2796      2807      2808      2811(2)   2816(2)

  2-000EBEAC    I*4  KED           225=     2668
      **        I*4  KEE          2796=     2809      2811(2)
      **        I*4  KEM           557=      558(2)=   559       560       562       565       594       636
                                   678=      679
      **        I*4  KK           1270=     2771(2)=  2772      2773=
  2-000EC24C    I*4  KO           2665=     2666

  2-000EBE94    I*4  KOD           225=     2801
      **        I*4  KT           1479=     1480      1708=     1709(2)=  1710(2)=  1711      1712
      **        I*4  L             308(2)=   322(2)=   323(2)=   324(2)=   325(2)=   326(2)=   333(2)=   339(2)=
                                   340(2)=   341(2)=   346(2)=   348(2)=   364=      365       366       367
                                   378(5)=   393(2)=   395(2)=   396(2)=   399=      400(2)    402       412=
                                   413       414=      415       421(4)=   470=      474       475       476
                                   479(2)    480(2)    486       491=      492       493       506=      509
                                   510       511       514(2)    532=      533(10)   536       541(4)    547(2)
                                   548(2)    549(2)    553(2)    554       555(2)    556(2)    560(2)    561
                                   562(2)    564       565       583       587       594(6)    598       600
                                   602       611       622       623       628       636(6)    646       661=
                                   665       671       679(2)    704=      706       707       710       820=
                                   833       834       835       841       851(2)    855       856       857
                                   861       862(2)    868       885=      891       892       893       904=
                                   907       910       913(2)    925       933       956       961       970(2)
                                   974       975(2)    976(2)    980       981(2)    987       996(3)    997
                                   998(3)    999       1007      1016=     1019      1022      1025(2)   1037
                                  1045      1067      1071(2)   1074      1075      1076      1080      1092=
                                  1106      1110(2)   1111(2)   1114      1115      1116      1119      1120(2)
                                  1126      1127      1128(2)   1134      1135      1136      1142      1154=
```

			1156	1157	1158	1160	1161	1163	1224(2)=	1231(2)=
			1232(2)=	1233(2)=	1234(2)=	1235(2)=	1241(2)=	1243(2)=	1244(2)=	1245(2)=
			1251(2)=	1253(2)=	1254(2)=	1255(2)=	1256(2)=	1266=	1268	1300=
			1301	1306	1308(2)	1316=	1317	1325=	1326	1327(2)
			1328(2)	1329(2)	1330	1331(2)	1357=	1358	1363	1365(2)
			1379=	1380	1383	1384	1385	1386	1391	1392
			1394(2)	1395(4)	1399(2)	1400(2)	1401(2)	1403(3)	1404(2)	1405(2)
			1407(2)	1415=	1416	1417	1418	1419	1424=	1425
			1427	1433=	1434	1436	1449=	1450	1451(2)	1453
			1454(2)	1459(3)	1460	1467	1468(2)	1476=	1477	1482(2)
			1492=	1493	1494	1497	1507	1523	1525(2)	1526(2)
			1535	1536	1542	1543	1550(5)	1556	1568	1571
			1578(2)	1588	1589(4)	1590(3)	1591(2)	1597	1599	1612=
			1613	1698=	1701(2)	1702	1703	1706(2)	1708	1712(3)
			1746=	1747(2)	1748(2)	1758=	1759	1760	1761	1786=
			1787	1800=	1801	1802(2)	1927=	1928	1929	1930
			1931(2)	1932=	1933	1953=	1954	1963(2)	1971(2)	1972(2)
			1973(2)	1974(3)	1976(3)	1977	1980	1981	1985(2)	1986(2)
			1989(2)	1990(2)	1993	1994	1996(2)	1997	1998	1999
			2000	2001	2009=	2010(2)	2011(2)	2012(2)	2026=	2027
			2028(2)	2029	2033	2050=	2051	2070=	2071	2072
			2073	2083=	2084	2087	2088	2089	2090	2091(2)
			2092	2107=	2108	2131=	2132	2194=	2195	2197
			2199(2)	2252=	2253(2)	2486=	2487(3)	2488(2)	2489	2490(3)
			2491	2492	2494=	2495(2)	2496	2497(3)	2498	2499
			2500	2501=	2503(2)	2528=	2529	2530(5)	2531(2)	2532(2)
			2533(3)	2534(3)	2535(3)	2551=	2552(4)	2569=	2585=	2586
			2587=	2588	2589	2590	2591	2592	2594=	2595
			2596=	2597	2598	2599=	2600	2601	2602	2603
			2604(3)	2605	2606	2607=	2608	2609	2610	2611
			2612	2613	2614	2615=	2616	2617	2632=	2633
			2634	2643=	2644(3)	2691=	2692(3)	2693	2709	2711
			2713	2714(10)	2718(2)=	2729=	2730	2731(10)	2734=	2735
			2736(3)	2738=	2739	2740(3)	2743=	2744	2745(3)	2746=
			2747	2748(3)	2751=	2752	2753(3)	2756=	2757	2758(3)
			2759=	2760	2761(3)	2776=	2777(2)	2779	2780	2781
			2782	2783(2)	2785	2807=	2808	2809	2811(7)	2816(5)
			2878=	2879	2880	2882(4)	2888(4)	2905(11)=		2908(2)=
			2918(7)=	2921=	2922(6)	2926=	2927	2928(5)	2931=	2932
			2934	2935	2937=	2938	2939=	2940	2941=	2942
			2944	2945=	2946	2947=	2948	2950	2963=	2964
			2965	2971(2)	2972(6)	2976=	2977	2978	2980	2982(7)
			2986=	2987	2989(7)					
2-000EC1DC	I*4	L1	2024=	2026	2034	2083	2161	2259=	2265	
2-000EC1E8	I*4	L2	2033=	2034	2083	2161	2239(2)	2259		
2-000EBE90	I*4	LBC	225=	448=	656					
2-000EBF0C	I*4	LCR	441=	442						
**	I*4	LD	1388=	1389(3)=	1390(2)	1958=	1962(3)=	1974(2)	1976(2)	1980
			1981	1983	1985(2)	1986	1989(2)	1990	1993(2)	1994
**	I*4	LDAY	2695=	2704(2)=	2705	2706(2)=	2714			
**	I*4	LDY	2651=	2655(2)=	2656	2657(2)=	2678	2681	2802	2874
			2900	2960						
**	I*4	LI	660=	667(2)=	668	670=	673(2)=	686(2)=	689	691=
**	I*4	LKE	2808=	2811	2816					
**	I*4	LKEE	2809=	2810	2811					

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     **       I*4  LL                2090=    2091     2161=    2162     2166     2168     2170     2179
                                     2180     2182     2193     2194     2195     2202     2206     2208
                                     2213     2214(2)  2216     2217(2)
  2-000EC1EC  I*4  LN                2034=    2043     2165     2234

  2-000EC210  I*4  LR                2186=    2187(2)  3010=    3019(2)= 3020
  2-000EBEA4  I*4  LRA                225=    3009     3020
     **       I*4  LRRT              2180=    2181(2)  2185(2)  2186
     **       I*4  LYEAR             2694=    2696
     **       I*4  M                  635=     636      671=     679      2711=    2714     2927=    2928
                                     2969=    2970     2972(2)  2980=    2981     2982(2)

  2-000EBE58  I*4  MD1                171D     905      1017
  2-000EBE5C  I*4  MD2                171D     906      1018
     **       I*4  MDD1               905=     911(2)=  913      1017=    1023(2)= 1025
     **       I*4  MDD2               906=     912(2)=  913      1018=    1024(2)= 1025
     **       I*4  MIL               1941=

     **       I*4  MO                2701=    2702(2)= 2703     2704     2706     2714     2970=    2972
                                     2981=    2982
     **       I*4  MON               2652=    2653(2)= 2654     2655     2657     2678     2681     2802
                                     2874     2900     2959
     **       I*4  N                 1267=    1268     1480=    1481     1699=    1700     1711=    1712
  2-000EBE74  I*4  NCR                225=    2130     2569
  2-000EBE64  I*4  ND                 225=     364      378      399      470      585      661      705
                                      707     919      946     1162     1184     1300     1424     1800
                                     2528     2607     2776     2905     2918     2963

  2-000EBEA8  I*4  NDF                225=     296=     298      299      877      878      879     1153
  2-000EC0C0  I*4  NDT                831=     833      837      838      855      863      864      890=
                                      891     922=     925      949=     957      958      974      975
                                      976     982      983     1034=    1037     1057=    1063     1064
                                     1074     1075     1076     1095=    1102     1103     1114     1121
                                     1122     1129     1130     1137     1138     1186=    1188     1214=
                                     1216     1224=    1225     1231=    1232=    1233=    1234=    1235=
                                     1238=    1239     1241=    1242     1243=    1244=    1245=    1248=
                                     1249     1251=    1252     1253=    1254=    1255=    1256=    3015=
                                     3017
  2-000EC0B8  I*4  NDY                826=     831      835      886(2)=  887      888=     890      893
     **       I*4  NED                819=     821(2)=  876      877      878      956      1156     1158
                                     1160     1327(2)  1328(2)  1329(2)  1505     1591     1705     2668
                                     2678     2681     2772     2917     2957     2958     2968     2979
                                     2988
  2-000EC0C4  I*4  NED1               876=     877=     885      1154     1516

  2-000EC0E0  I*4  NEDD              1007=    1161     1163
  2-000EC284  I*4  NEDDAY            2960=    2972     2982     2989(2)
  2-000EC0C8  I*4  NEDF               878=     885      1154     1285
  2-000EC288  I*4  NEDYR             2961=    2972     2982     2989(2)
  2-000EBE84  I*4  NEP                225=     421      1031     1055     1159     1357     1433     2643
                                     2864     2881     2887

  2-000EC25C  I*4  NK                2787=    2792     2810
  2-000EC1E0  I*4  NLK               2025=    2026     2027     2208     2213     2265
  2-000EBE6C  I*4  NLL                225=     532      664     1930     1953     2009     2025
  2-000EBF04  I*4  NM                 432=     610(2)=  611
     **       I*4  NMD                822=     846      852(2)=  945=     965      971(2)=
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2-000EC0AC	I*4	NMR	826=	830	836	837	838	856	857	860
			922=	929	930	949=	953	954	955	957
			958	975	976	1034=	1041	1042	1057=	1061
			1062	1063	1064	1075	1076	1095=	1099	1100
			1101	1102	1103	1115	1116	1186=	1189	1190
			1195	1214=	1217	1218	1224=	1226	1227	1231=
			1232=	1233=	1234=	1235=	1238=	1241=	1243=	1244=
			1245=	1248=	1251=	1253=	1254=	1255=	1256=	3015=
			3017							
2-000EBE7C	I*4	NP	225=	341	348	393	506	1093	1155	1213
			1379	1449	1932	2594	2599	2729	2734	2738
			2743	2746	2751	2756	2759	2921	2986	
2-000EBE68	I*4	NR	225=	322	323	324	325	326	339	340
			346	491	1266	1415	1476	1491	1612	1698
			1746	1758	1786	1927	2050	2070	2107	2131
			2252	2551	2570	2587	2690	2926	2976	
2-000EBE9C	I*4	NRC	225=	333	823					
2-000EBE98	I*4	NSP	225=	704						
2-000EBE8C	I*4	NSR	225=	355	396	2596	2615	2632		
2-000EBF08	I*4	NSVL	434=	624(2)=	625	628				
2-000EC0B4	I*4	NYE	826=	831	834	881	889(2)=	890	892	
2-000EC280	R*4	OMNED	2959=	2972	2982	2989(2)				
**	I*4	OUT	176	309=	573	594	636	657	669	674
			679	687	690	707	837	842	847	856
			863	957	962	966	975	982	1063	1068
			1075	1102	1107	1115	1121	1129	1137	1189
			1217	1226	2029	2217	2239	2505	2666=	2667
			2669	2670	2671	2678	2681	2684	2714	2718
			2725	2731	2736	2740	2745	2748	2753	2758
			2761	2802	2804	2811	2816	2825	2837	2841
			2844	2847	2850	2854	2874	2876	2882	2888
			2900	2901	2905	2908	2911=	3011	3017	
2-000EBE60	I*4	OUT2	177	310=	838(2)	843(2)	848(2)	857(2)	864(2)	958(2)
			963(2)	967(2)	976(2)	983(2)	1064(2)	1069(2)	1076(2)	1103(2)
			1108(2)	1116(2)	1122(2)	1130(2)	1138(2)	1190(2)	1218(2)	1227(2)
2-000EBEC4	R*4	PRO	292=	293						
2-000EC0FC	R*4	PTEMP	1095=	1135	1142					
**	R*4	R	1457=	1459	2166=	2167	2168(2)=	2171(2)=	2172	2176(2)=
			2177	2183(2)=	2184	2185	2187	2190(2)=	2191	2196(2)=
			2198	2199	2201(2)=	2202	2203	2204	2207	2212
			2214	2215	2216	2217	2794=	2795	2866=	2867
**	R*4	RERC	2485=	2488	2490	2491=	2495	2497	2498=	2503
			2504=	2505(2)						
2-000EBDBC	CHAR	RESNAME	29	507=	511					
2-000EC160	R*4	RI	1454=	1455(2)=	1456	1457				
2-000EC1A4	R*4	RIRL	1688=	2623	2841					
**	R*4	RR	2195=	2196(2)						
**	R*4	RS	2181=	2182	2183(2)					
2-000EC144	R*4	RT	1344=	1345(2)=	1346(2)=	1347				
2-000EC0F4	R*4	RTEMP	1095=	1119	1126					
2-000EBD82	CHAR	RUNDATE	28	2677A	2678	2681	2802			
2-000EC1A0	R*4	RWCEX	1687=	2201(2)	2204(2)=					

2-000EC134	R*4	SDB	1315=	1317(2)=	1569	1572	1590	1632	
2-000EC1B0	R*4	SPCKGN	1735=	2854					
2-000EC114	R*4	STEMP1	1186=	1201					
2-000EC118	R*4	STEMP2	1186=	1202					
2-000EC11C	R*4	STEMP3	1186=	1203					
**	R*4	SUM	1510=	1525(2)=	1526	1535(2)=	1536		
2-000EC1B8	R*4	T1	1756=	1760(2)=	1763				
2-000EC1BC	R*4	T2	1757=	1761(2)=	1763				
2-000EBF38	R*4	TCL	662=	683(2)=	685	687			
**	R*4	TRF	2112=	2113	2116				
2-000EC19C	R*4	TWCD	1683=	1684(2)	1686				
**	R*4	TWCF	1676=	1677	1678	1679			
2-000EC0B0	R*4	TYP	826=	922=	949=	1034=	1057=	1095=	1186= 1214=
			1224=	1231=	1232=	1233=	1234=	1235=	1238= 1241=
			1243=	1244=	1245=	1248=	1251=	1253=	1254= 1255=
			1256=	3015=	3017				
2-000EBE1E	CHAR	UNDEF	30	87D	486				
**	R*4	VOLDROP	2324=	2325					
**	R*4	WCEX	1686=	1687					
2-000EC190	R*4	WCNF	1671=	1674=	1676	1678			
**	R*4	WCNL	1678=	1680					
2-000EC194	R*4	WCSF	1672=	1675=	1676	1679			
2-000EC18C	R*4	WCSL	1669=	1679=	2624	2841			
2-000EC13C	R*4	XCUT	1334=	2844					

ARRAYS

Address	Type	Name	Attributes	Bytes	Dimensions	References				
2-000A76BC	R*4	A		115200	(80, 360)	46	851(2)=	862(2)=	868=	1327(2)=
						1328(2)=	1329(2)=	1330	1331(2)	1578
2-0000E700	R*4	AD		1600	(400)	36	2532=	2533	2534	2611
						2905				
2-000A6000	R*4	AF		320	(80)	44	1497=	1542	1550=	1557
						1559(2)=	1569(3)=	1572(3)=	1578=	1589=
						1590(3)=	1591(2)=	1599	1623	1632
						1641	1642	1650	1651	1671
						1672(2)	1673(2)	1674	1676	1677
						1734	2189	2324	2552	2714
						2837(2)	2844(2)	2847(2)	2850(2)	2854
						2928	2982			
2-000A6CBC	R*4	AG		320	(80)	46	1747=	1748=	1761	1789
						2591	2714	2928		
2-000C39AC	R*4	ARINT		40	(10)	53	138D	1453	1454	
2-0000AD50	R*8	BRST		128	(16)	69	112	396=	1224=	1231=
						1232=	1233=	2181	2185(2)=	2598
						2617	2633=	2731	2736	2740
						2745	2748	2753	2758	2761
						2935				
2-000C3C00	R*4	CEV		40	(10)	54	393=	1214=	2604(2)=	2605

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                                                                  2731      2922      2989
  2-00000000  R*8   CTR                  640  (80)                42        112       2072=     2110(2)=  2113
                                                                  2114      2121(3)=
  2-0000E0C0  R*4   DIV                 1600  (400)               35        1306=     1308=     1317      1323(2)=
                                                                  1324(2)=  1330(2)=  1332(2)=  1333(2)=  1334
                                                                  1335(3)=  1343      1347=     1348(2)=  1349(2)=
                                                                  1427      1558(2)   1652(2)   1683      1802
                                                                  1815      1817      1820      1824(4)   1830
                                                                  1833      1836      1838      1840      1842
                                                                  1844      1846(5)   1852(2)   1855      1857
                                                                  1859      1861      1863(3)   1867(11)  1880
                                                                  1882      1884(4)   1889      1891(2)   1894(3)
                                                                  1898      1901      1904      2324      2334
                                                                  2345      2356      2367(4)   2381      2393(10)
                                                                  2399(6)   2404      2424(5)   2438(2)   2439
                                                                  2450      2514      2530      2535      2608
                                                                  2779      2905      2918      2971      2972
  2-0000AEC0  R*4   DIVNM               8000  (400, 5)            35        378=      480       636       679
                                                                  2785      2905

  2-0000DA80  R*4   DM                  1600  (400)               35        1801=     2490(2)=  2497(2)=  2503(2)=
                                                                  2529=     2530(2)=  2543=     2609      2905
  2-000A1B40  R*4   DNAM                8000  (400, 5)            37        2785=     2811(3)   2816(2)
  2-000C395C  R*4   DRA                   40  (10)                52        1933=     2187(2)=  2600      2731
                                                                  2922      2989
  2-000A707C  R*4   DS                   320  (80)                46        1618=     2606      2731      2989
  2-000E5FB8  CHAR  DVNAM              19600  (400)               29        37        476=      486=      2972

  2-0000F9C0  R*4   DVV               585600  (400, 366)          36        125D      933=      970(2)=   981(2)=
                                                                  987=      996(3)=   997       998(3)=   999=
                                                                  1163(2)=  1308
  2-000E4BE8  R*4   ECH                  120  (30)                74        1363=     1365=     1436      2644
                                                                  2882(3)   2888(2)
  2-000C3BB4  R*4   EV                    40  (10)                53        1383=     1391=     1394=     1395=
                                                                  1399=     1400=     1401=     1403=     1451
  2-000C39D4  R*4   EVAP                  40  (10)                53        1450=     1467=     1468(2)=  1509
                                                                  1619      2604      2710      2922
  2-000C3C28  R*4   EVP                14640  (10, 366)           54        1111(2)=  1128(2)=  1134=     1156(2)=
                                                                  1394      1396(3)=  1398      1399      1400
                                                                  1401      1403

  2-000DA058  R*4   EXC                43920  (30, 366)           74        126D      1045=     1071(2)=  1080=
                                                                  1160(2)=  1365
  2-000D9E00  R*4   EXCNM                480  (30, 4)             74        421=      2882(3)   2888(2)
  2-000A3BC0  R*4   F                    320  (80)                42        1419=     1789(2)=  1792(3)=  1931
                                                                  2714      2928      2982
  2-000E5DE8  R*4   FI                    80  (20)                80        3015=     3017
  2-000EAE32  CHAR  FLONAM              3920  (80)                29        47        493=      2982

  2-000A3F80  R*4   G                   4800  (80, 15)            42        1482(2)=  1623=     1633(2)=  1634(2)=
                                                                  1641(2)=  1642(2)=  1653(2)=  1670      1677
                                                                  1678      1679      1680=     1681(2)=  1682
                                                                  1685(2)=  1688      1689=     1706      1712
  2-000A68C0  R*4   GAIN                 320  (80)                45        1526=     1536=     1542=     1543(2)=
                                                                  1550
  2-000A71BC  R*4   GAV                 1280  (80, 4)             46        1268=     1525(2)   1526      1535
                                                                  1701(2)=  1702=     1706=     1712(2)=  1737
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                                                                  1747
  2-0000ADD0  R*8  GT                    80  (10)                  80      112       395=      1234=     1235=
                                                                  1269    2618(2)=  2619(2)=  2620(2)=  2621(2)=
                                                                  2623(2)=2624(2)=  2625(2)=  2626=     2761(3)
                                                                  2837    2841(2)   2938      2940
  2-000A6500  I*4  ICF                  320  (80)                  44      326=      1588      1759      1788
                                                                  2109    2133      2572      2588      2692
                                                                  2713    2977

  2-000CF9B0  I*4  ICN                 3200  (800)                 61      533=      583       587
  2-000CAEB0  I*4  ICNL                3200  (800)                 60      598=      600=      602       665
                                                                  1954    2011
  2-000D5E50  I*4  ID                  3200  (800)                 63      533=      541       594       636
                                                                   679    2972      2982
  2-000A6780  I*4  IDA                  320  (80)                  45      325=      1477      1708
  2-000CBB30  I*4  IDATE               3200  (800)                 60      541=      2010      2714      2928

  2-0000ED40  I*4  IDN                 1600  (400)                 36      378=      402       474       475
                                                                   479     480       514       587       679
                                                                   706     929       930       954       955
                                                                   957     958       982       983       1195
                                                                  2918    2972
  2-000A3D00  I*4  IDS                  320  (80)                  42      322=      1597      1790      2119
                                                                  2134    2173      2209      2573
  2-000D9D10  I*4  IEN                  120  (30)                  74      421=      1041      1042      1061
                                                                  1062    1063      1064
  2-000D9D88  I*4  IER                  120  (30)                  74      421=      1358      1434
  2-0009F5C0  I*4  II                  8000  (5, 400)             37      2779=     2780=     2781=     2782=
                                                                  2783=   2811(3)   2816(2)

  2-000D51D0  I*4  IM                  3200  (800)                 63      533=      536       541       676
                                                                  2970    2981
  2-000A5380  I*4  IORD                 320  (80)                  43      323=      1492      1613      1787
                                                                  2108    2132      2571      2691
  2-0000CE00  I*4  IRCH                1600  (400)                 35      378=      609       635       671
                                                                  1301    1425      1955      2086      2164
                                                                  2905    2965
  2-000C3BDC  I*4  IRESN                 36  (9)                   53      131D      509       510       1100
                                                                  1101    1102      1103      1121      1122
                                                                  1129    1130      1137      1138      2922
                                                                  2989
  2-000A63C0  I*4  IRS                  320  (80)                  44      324=      1507      1615      1616
                                                                  2709

  2-000A6640  I*4  IRT                  320  (80)                  45      1930=     2208(2)=  2213(2)=  2575(4)=
                                                                  2711    2927      2969      2980
  2-000E5E48  I*4  ISPEC                368  (92)                  80      94D       706       707       710=
                                                                   718     719       720       721       722
                                                                   723     724       725       726       727
                                                                   728     729       730       731       732
                                                                   733     734       735       736       737
                                                                   738     739       740       741       742
                                                                   743     744       745       746       747
                                                                   748     749       750       751       752
                                                                   753     754       755       756       757
                                                                   758     759       760       761       762
                                                                   763     764       765       766       767
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                                                                  768       769       770       771       772
                                                                  773       774       775       776       777
                                                                  778       779       780       781       782
                                                                  783       784       785       786       787
                                                                  788       789       790       791       792
                                                                  793       794       795       796       797
                                                                  798       799       800       801       802
                                                                  803       804       805       806       807
                                                                  808       809
  2-000CD430  I*4  IV                    3200  (800)              60       533=      1977
  2-000CED30  I*4  IVO                   3200  (800)              61       622=       628=     2089      2090
                                                                 2193      2194
  2-000D4550  I*4  IY                    3200  (800)              62       533=       541       594       636
                                                                  679      2972      2982

  2-0009EF80  I*4  JC                    1600  (400)              37       378=       479       646=      947(2)
                                                                 2530      2531      2777(2)   2964
  2-000D2BB0  I*4  JCNL                  3200  (800)              62      2011=      2084      2162
  2-000E4C90  I*4  JD                      48  (12)               79       119D       553       555       560
                                                                  562      2649=     2650=     2655      2657
                                                                 2699=     2700=     2704      2706
  2-000D1F30  I*4  JDATE                 3200  (800)              62      2010=      2028(2)   2029      2239
  2-000E4CC0  I*4  JDT                   1464  (366)              79       833=       855       856       857
                                                                  891=      925       974       975       976
                                                                 1037      1074      1075      1076      1114
                                                                 1115      1116      1188      1216      1225
                                                                 1239      1242      1249      1252      2918
                                                                 2922      2928      2935      2938      2940
                                                                 2944      2946      2950

  2-000E5830  I*4  JDY                   1464  (366)              79       835=       893=      910       913(2)
                                                                 1022      1025(2)   1388      1958      2631
                                                                 2651      2695
  2-000D3830  I*4  JJ                    3200  (800)              62      2012=      2087      2168      2170
                                                                 2179      2180      2206      2216
     **       I*4  JPM                     160  (40)               80       611=
  2-000CC7B0  I*4  JR                    3200  (800)              60       533=       646      1971      2012
  2-000A6B40  I*4  JRN                    180  (45)               45       153D       492       836       837
                                                                  838       860       863       864      2928
                                                                 2982

  2-000E5278  I*4  JYE                   1464  (366)              79       834=       892=      907      1019
                                                                 1290      1959      2678      2681      2694
                                                                 2802      2874      2900      2961
  2-000D6AD0  I*4  KBDY                  3200  (800)              63       549=       553(2)=   554       555(2)=
                                                                  594       636       679
  2-000D12B0  I*4  KBG                   3200  (800)              61       533=       547(2)=   549      1972
                                                                 1973      1974      1976
  2-000D83D0  I*4  KBMN                  3200  (800)              63       564=       677
  2-000D7750  I*4  KEDY                  3200  (800)              63       556=       560(2)=   561       562(2)=
                                                                  594       636       679

  2-000D9050  I*4  KEMN                  3200  (800)              64       565=       678
  2-000D0630  I*4  KEN                   3200  (800)              61       533=       548(2)=   556      1972
                                                                 1973      1974      1976
  2-000A6A00  I*4  KNRC                   320  (80)               45       333=       824
  2-000E5E38  I*4  KOUT                    16  (4)                80       308=       309       310      2666
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                                                                  2911
  2-000A5C40  I*4  LAG                  320  (80)                  43      339=     1325     1494     1703
                                                                  2693     2978

  2-000A5D80  I*4  LGD                  320  (80)                  43      340=     1303     1360     1956
                                                                  2967
  2-000C3984  I*4  LGG                   40  (10)                  52      341=     1380     2987
  2-000A6BF4  I*4  MGA                  200  (50)                  45      164D     1523
  2-000D9CD0  I*4  MR                    64  (16)                  69      355=     2186     2597     2634
                                                                  2730     2735     2739     2744     2747
                                                                  2752     2757     2760
  2-000E4C60  R*4  OM                    48  (12)                  79      117D     594(3)   636(3)   679(3)
                                                                  2678     2681     2714     2802     2874
                                                                  2900     2959     2972     2982

  2-00007AD0  R*8  P                   6400  (800)                 60      112      533=     594      636
                                                                   679      683     1963
  2-000A5240  R*4  PCT                  320  (80)                  43     2051=     2088     2114=    2115=
                                                                  2118=    2136(4)=  2165=    2166     2217
                                                                  2253(2)
  2-000A6DFC  R*4  PF                   320  (80)                  46     1929=     2191(2)=  2552     2714
                                                                  2982
  2-000CAE88  R*4  PP                    40  (10)                  54     1384=     1392=     1404=    1451
  2-000C7558  R*4  PPT                14640  (10, 366)            54     1136=     1142=     1157=    1404

  2-000A54C0  R*4  RCHNM               1920  (80, 6)               43      346=      636      679     2714
  2-0000D440  R*4  RD                  1600  (400)                 35     1802=     1815(2)=  1818(2)=  1820(2)=
                                                                  1823=    1824(2)=  1825=    1826=    1827=
                                                                  1828=    1831(2)=  1833(2)=  1836(2)=  1837=
                                                                  1838(2)=  1839=    1840(2)=  1841=    1842(2)=
                                                                  1843=    1844(2)=  1845=    1846(2)=  1847=
                                                                  1848=    1849=     1850=    1851=    1852(2)=
                                                                  1853=    1854=     1855(2)=  1856=    1857(2)=
                                                                  1858=    1859(2)=  1860=    1861(2)=  1862=
                                                                  1863(2)=  1864=    1865=    1866=    1867(2)=
                                                                  1869=    1870=     1871=    1872=    1873=
                                                                  1874=    1875=     1876=    1877=    1878=
                                                                  1879=    1880(2)=  1881=    1882(2)=  1883=
                                                                  1884(2)=  1885=    1886=    1887=    1888=
                                                                  1889(2)=  1890=    1891(2)=  1892=    1893=
                                                                  1894(2)=  1895=    1896=    1897=    1898(2)=
                                                                  1899=    1902(2)=  1905(2)=  2088     2168(2)
                                                                  2189     2215(2)=  2217     2334     2345
                                                                  2356     2367      2381     2393     2424
                                                                  2470(3)=  2471(3)=  2474=    2488(2)=  2489
                                                                  2490     2491      2492=    2495(2)=  2496
                                                                  2497     2498      2499=    2514=    2515(2)=
                                                                  2530     2531=     2532     2610     2780
                                                                  2905     2918      2971     2972
  2-00000780  R*8  RES                   160  (10, 2)               52      112      1385=     1386=    1405=
                                                                  1407=    1454      1617(2)  2602     2603
                                                                  2731     2922      2989
  2-000EAC48  CHAR RESNAM                490  (10)                  29       55      511=      2989
  2-000C38BC  R*4  RESNM                 160  (10, 4)               52      348=      514      2731(2)  2736
                                                                  2740     2745      2748     2753     2758
                                                                  2761
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2-000A3A80	R*4	RF	320	(80)	42	1931=	2112	2114	2115
					2171(2)	2176(2)	2207(2)=	2208	2212(2)=
					2213	2217	2226	2337(2)=	2348(2)=
					2359(2)=	2370(2)=	2371(2)=	2372(2)=	2373(2)=
					2384(2)=	2397(2)=	2403(2)=	2407(2)=	2413(2)=
					2414(2)=	2427(2)=	2442(2)=	2443(2)=	2444(2)=
					2445(2)=	2446(2)=	2447(2)=	2453(2)=	2454(2)=
					2455(2)=	2456(2)=	2457(2)=	2458(2)=	2552
					2714	2982			
2-000A6280	R*4	RIN	320	(80)	44	1416=	1550	1589	1599(2)=
					1623				
2-00000870	R*8	RSS	29280	(10, 366)	54	112	1110(2)=	1120(2)=	1126=
					1158(2)=	1405	1407		
2-0000ACD0	R*8	RST	128	(16)	69	112	355=	2181	2616
					2731	2736	2740	2745	2748
					2753	2758	2761		
2-000C39FC	R*4	SA	440	(11, 10)	53	145D	1459(3)		
2-00000820	R*8	SAC	80	(10)	52	112	2595=	2598(2)=	2601
					2635=	2731	2922	2989	
2-000A5EC0	R*4	SF	320	(80)	44	2552=	2619(2)	2621(2)	2714
					2928	2982			
2-0009E940	R*4	SRM	1600	(400)	36	367=	400=	1197=	1202=
					2533(2)=	2612	2782	2783(2)	2905
					2918	2972			
2-0000F380	R*4	STOR	1600	(400)	36	365=	400=	1196=	1201=
					2534(2)=	2614	2781	2905	2918
					2972				
2-000CE0B0	R*4	SVL	3200	(800)	61	533=	623	1344	2091
					2195				
2-000093D0	R*8	T	6400	(800)	60	112	1963=	1971=	1974=
					1976=	1980=	1981=	1985(2)=	1986(2)=
					1989(2)=	1990(2)=	1993=	1994=	1996(2)=
					1997=	1998=	1999=	2000=	2001=
					2088=	2091=	2092	2166	2182=
					2202=	2214(2)=	2217		
2-000A3E40	R*4	TD	320	(80)	42	1928=	2216(2)=	2336(2)=	2338(2)=
					2347(2)=	2349(2)=	2358(2)=	2360(2)=	2369(2)=
					2374(2)=	2383(2)=	2385(2)=	2396(2)=	2402(2)=
					2406(2)=	2410(2)=	2412(2)=	2417(2)=	2426(2)=
					2428(2)=	2440(2)=	2441(2)=	2451(2)=	2452(2)=
					2589	2714			
2-000A1500	R*4	TDIV	1600	(400)	37	366=	1198=	1203=	2535(2)=
					2613	2905	2918		
2-00000500	R*8	TR	640	(80)	44	112	2073=	2092(2)=	2110
					2111				
2-000A6140	R*4	TRD	320	(80)	44	1417=	1427(2)=	1550	1589
					1623	1683	1760	2590	2714
2-000A6F3C	R*4	TRE	320	(80)	46	1418=	1436(2)=	1550	1589
					1623	2592			
2-00000280	R*8	TRM	640	(80)	42	112	2071=	2111(2)=	2112
					2116(2)=	2122(3)=			
2-000D9FE0	R*4	TSE	120	(30)	74	415=	1251=	1253=	1254=
					1255=	1256=	2644(2)=	2882(3)	2888(2)
					2950				

2-0000AE20	R*8	TT	160	(20)	80	112	2586=	2589(2)=	2590(2)=
					2591(2)=	2592(2)=	2600(2)=	2601(2)=	2602(2)=
					2603(2)=	2605(2)=	2606(2)=	2608(2)=	2609(2)=
					2610(2)=	2611(2)=	2612(2)=	2613(2)=	2614(2)=
					2616(2)=	2617(2)=	2618	2620	2636=
					2637=	2718	2740(6)	2761	2774
					2908(3)				
2-000D44B0	R*4	VRD	160	(40)	62	413=	1241=	1243=	1244=
					1245=	1344	1816	1829	1900
					2091	2195	2199(2)=	2323	2325(2)=
					2327(2)=	2437	2850(2)	2854	2944
					2946				

LABELS

Address	Label	References							
**	1	1800	1802#						
**	2	1927	1931#						
0-000048C8	3	2171#	2174						
0-00004AFD	4	2161	2163	2220#					
**	5	2528	2536#						
0-00004DDC	6	2226	2265	2267#					
1-000001CE	7'	225	308	322	323	324	325	326	327#
		333	339	340	341				
1-000004FF	8'	533	535#						
1-000001D3	9'	346	347#						
**	10	1932	1933#						
0-00004A14	11	2207#	2210						
0-000029DE	12	1153	1165#						
**	13	2551	2552#						
0-00004A0B	14	2188	2192	2200	2205#				
0-00003E8F	15	1786	1788	1791	1793#				
**	16	1415	1419#						
1-000001DA	17'	348	349#						
1-00000E6A	18'	2681	2682#						
1-00000F8E	19'	2714	2716#						
1-00001193	20'	2802	2803#	2900					
1-00001745	21'	2905	2907#						
1-00000FAA	22'	2718	2719#						
0-0000480C	23	2026	2028	2032#					
0-000047B4	24	2026#	2266						
**	25	2028	2029#						
0-00004DC4	26	2234	2243	2259#					
0-00004810	27	2027	2028	2033#					
1-00000D17	28'	2029	2030#						
0-0000484C	29	2043	2161#						
0-00004C93	30	2083	2085	2093#					
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  0-00004D38  33                    2117     2119#
  0-00004DB9  34                    2131     2133     2135     2137#
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  0-00004BB2  37                    2070#    2254
      **      39                    2070     2073#
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  0-00003BCA  41                    1612     1614     1624#

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  0-00006F6D  45                     225      408     485      503      519      698     3009     3015
                                    3021#
  0-000016A8  46                     656      693#

  0-00004776  47                    1953     1978     1982     1983     1987     1991     1995     2002#
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  0-0000471C  75                    1992     1996#
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  1-00000831  80'                    922      949     950#
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      **      93                    2596      2598#
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      **      96                    2615      2617#
  1-00000FEC  97'                   2725      2726#

      **      98                    2178      2189#
      **      99                    1699      1701#
      **      100                   2729      2731#
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  1-00000202  102'                   403       404#

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  1-00000625  104'                   657       658#      669       690
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  1-0000067A  107'                   679       681#

  1-000006A8  108'                   687       688#
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  1-000011BF  110'                  2804      2805#
  1-00001214  111'                  2811      2814#
  0-000061B0  112                   2807      2815      2819#

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  1-0000028F  114'                   421       422#
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  0-0000152E  117                    668       671#
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  1-00000676  123'                   674       675#

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  0-0000124C  125                    586#      590       593
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  0-00001284  127                    587       600#
  0-00001274  128                    587       591#
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      **      133                    704      711#

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  0-00001333  137                    609      612#
      **      138                   2317#

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  1-00001832  150'                  3015     3016#
  1-0000183E  151'                  3017     3018#
  0-00006EB4  152                   3015#    3020
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  0-00004A76  163                   2211     2214#
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      **      176                   2643     2644#
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  1-0000163E  178'                  2876     2877#
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  1-0000074E  194'       842     843     844#    962     963    1068    1069    1107
                        1108

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  0-000021AB  197        927     935     995#
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  1-000000F2  399'                           279       280#
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  0-00003FE2  410                           1829      1835#

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FUNCTIONS AND SUBROUTINES REFERENCED

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  Type  Name                               References

   R*4  ABS                                 1738
        ASSIGN                               182       183       184       185       186       187       188       189
                                             190       191       192       193       194       195       196       466
                                             467       468
        DATE                                2677
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  +-----------------------------------------------+
  |            KEY TO REFERENCE FLAGS             |
  |    =    - Value Modified                      |
  |    #    - Defining Reference                  |
  |    A    - Actual Argument, possibly modified  |
  |    D    - Data Initialization                 |
  |   (n)   - Number of occurrences on line       |
  +-----------------------------------------------+
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COMMAND QUALIFIERS

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  /DEBUG=(PARAMETERS=USED,NOSYMBOLS,TRACEBACK)
  /DESIGN=(NOCOMMENTS,NOPLACEHOLDERS)
  /DIRECTIVES=(DEPENDENCE)
  /MATH_LIBRARY=(ACCURATE,NOV5)
  /PARALLEL=(NOAUTOMATIC,NOMANUAL)
  /SHOW=(NODATA_DEPENDENCES,NODICTIONARY,NOINCLUDE,NOLOOPS,MAP,NOPREPROCESSOR,SINGLE)
  /STANDARD=(NOMIA,NOSEMANTIC,NOSOURCE_FORM,NOSYNTAX)
  /WARNINGS=(NOALIGNMENT,NOAlpha_AXP,NODECLARATIONS,GENERAL,INFORMATIONAL,NOINLINE,NOTRUNCATED_SOURCE,
             NOULTRIX,UNCALLED,UNINITIALIZED,UNUSED,USAGE,NOVAXELN)
  /CONVERT=NATIVE  /CROSS_REFERENCE  /NOD_LINES  /ERROR_LIMIT=30  /NOEXTEND_SOURCE
  /F77  /NOG_FLOATING  /I4  /NOMACHINE_CODE  /OPTIMIZE=LEVEL=3
  /NORECURSIVE  /NOSYNCHRONOUS_EXCEPTIONS  /TERMINAL=NOSTATISTICS  /NOVECTOR
  /NOANALYSIS_DATA
  /NODIAGNOSTICS
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  /OBJECT=HYDRO:[BSUTTER.SNAKE]SNKWRA.OBJ;1


COMPILER:  DEC Fortran V6.3-141

COMPILATION STATISTICS

  Run Time:           8.61 seconds
  Elapsed Time:       10.24 seconds
  Page Faults:        29142
  Dynamic Memory:     7696 pages
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SNKRMHGN 1.1.S

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C
C****THIS PROGRAM WRITTEN BY IDAHO DEPARTMENT OF WATER RESOURCES IN
C****MARCH 1980 FOR THE PURPOSE OF COMPUTING REACH GAINS USING THE
C****FLOW AND DIVERSION DATA ENTERED BY WATER DISTRICT 1.
C
C****THIS PROGRAM IS A MODIFICATION OF THE ACCOUNTING PROGRAM WRD097.
C****THE REACH GAIN PORTION WAS RETAINED AND THE ACCOUNTING PORTION
C****DELETED.
C
C****MODIFIED FOR IDWR VAX JULY 1989 - BOB SUTTER
C
      DIMENSION IRCH(400),DIV(400)
      DIMENSION IDS(80),G(80,15)
      DIMENSION IORD(80),DIVNM(400,5)
      DIMENSION AF(80),TRD(80),RIN(80),IRS(80),DSTOR(80),EVPR(80)
      DIMENSION RES(10,2),OM(12),IDN(400),IDA(80),TRE(80)
      DIMENSION JD(12),LAG(50),LGG(10),DVV(400,400),A(50,400)
      DIMENSION RSS(10,400),LGD(50)
      DIMENSION JC(400),ARINT(10),EVAP(10),SA(11,10),EV(10),PP(10)
      DIMENSION ICF(80),ISPEC(31)
      DIMENSION JDT(400),EVP(10,400),KNRC(80),JRN(41),JYE(400),JDY(400)
      DIMENSION IEN(30),IER(30),EXCNM(30,4),EXC(30,400),ECH(30)
      DIMENSION FI(20),GAV(80,4),IRESN(9),PPT(10,400)
C
C****ISPEC = IDENTIFICATION NUMBERS OF CANALS FOR WHICH SPECIAL
C****COMPUTATIONS MUST BE MADE TO DETERMINE DIVERSION RATES TO BE
C****USED FOR WATER RIGHT ALLOCATION
C
      DATA ISPEC/13080000,13080500,13085800,13087000,13086520,13086530,
     113086510,13080000,13049561,13049560,13037505,13037975,
     213038085,13057135,13057250,13048560,13049725,13050530,13058510,
     313058530,13058515,13057025,13057013,13057014,13057015,13057018,
     413061525,13061522,13061705,13038025,13038386/
C
C****EXTEND PRECISION OF VARIABLES WITH LARGE VALUES
C
      REAL*8 RES,RSS
C
C****INITIALIZE DIVERSION MEASUREMENTS (DVV) TO ZERO.
C
      DATA DVV/160000*0.0/
C
C**** SET IDENTIFICATION NUMBERS FOR ALL RESERVOIRS IN DOWNSTREAM ORDER.
C
      DATA IRESN/13010500,13032450,13039000,13042000,13046500,13057950,
     113076500,13081000,13087900/
C
C**** ARINT = INTERVAL BETWEEN VALUES IN CONTENT-SURFACE AREA CURVES,
C**** UNITS ARE 1000 ACRE-FEET.
C
      DATA ARINT/0.0,200.0,0.0,20.0,0.0,10.0,200.0,20.0,0.0,0.0/
C
C**** SA = SURFACE AREA IN 1000 ACRES OF EACH RESERVOIR AT ARINT
C**** INTERVALS.  THERE ARE ELEVEN VALUES FOR EACH RESERVOIR
C**** BEGINNING WITH FIRST RESERVOIR.
C
      DATA SA/11*0.0,3.8,6.1,8.0,9.6,11.4,13.6,15.2,4*18.2,11*0.0,
```

```
      1 0.0,1.2,2.9,4.4,5.6,6.5,7.4,4*8.1,11*0.0,0.4,0.6,0.8,0.9,1.1,1.2,
      2  1.3,1.4,1.5,1.6,1.7,0.0,20.0,26.6,32.6,38.9,44.2,49.5,53.3,56.9,
      3   59.7,62.2,6.9,7.7,8.3,8.7,9.0,9.5,5*10.5,22*0.0/
C
C**** USE THESE VALUES OF SURFACE AREA INSTEAD OF ABOVE VALUES TO
C**** EVAPORATE WATER FROM ENTIRE SURFACE OF AMERICAN FALLS, PALISADES,
C**** MINIDOKA, AND ISLAND PARK RESERVOIRS. ABOVE VALUES HAVE ORIGINAL
C**** WATER SURFACE SUBTRACTED.
C
C      DATA SA/11*0.0,4.9,7.2,9.1,10.7,12.5,14.7,16.3,19.3,19.3,19.3,19.3
C     1,11*0.0,0.1,1.5,3.2,4.7,5.9,6.8,7.7,4*8.4,11*0.0,0.4,0.6,0.8,0.9,1
C     2.1,1.2,1.3,1.4,1.5,1.6,1.7,0.5,20.0,26.7,32.6,39.0,44.3,49.6,53.4,
C     357.0,59.7,59.7,9.2,10.0,10.6,11.0,11.3,11.8,5*12.8,22*0.0/
C
C****SET IDENTIFICATION NUMBERS FOR ALL REACHES
C
       DATA JRN/13011000,13032500,13037500,13038389,13057155,13062500,
      113077000,13081500,13088000,13050590,13039500,13042500,13046023,
      213046510,13046995,13049500,13050500,13055000,13055351,13056500,
      313057026,13063600,13057940,13058000,13058520,13050016,13050018,
      413058550,13037977,13046450,13060000,13038500,13022500,13027500,
      513023000,13057260,13038000,13069500,13075500,13075983,13057132/
C
C****USE THESE ID NUMBERS PRIOR TO 1989
C
C      DATA JRN/13011000,13032500,13037500,13038389,13057160,13062500,
C     113077000,13081500,13088000,13050590,13039500,13042500,13046023,
C     213046510,13047500,13049500,13050500,13055000,13055351,13056500,
C     313057026,13069500,13057940,13058000,13058520,13050016,13050018,
C     413058550,13037977,13046450,13060000,13038500,13022500,13027500,
C     513023000,13057260,13038000/
C
C****USE THESE ID NUMBERS PRIOR TO 1982 FOR CORRECT AHSTON NUMBER.
C
C      DATA JRN/13011000,13032500,13037500,13038389,13057150,13062500,
C     113077000,13081500,13088000,13050590,13039500,13042500,13046000,
C     213046510,13047500,13049500,13050500,13055000,13055351,13056500,
C     313057026,13069500,13057940,13058000,13058520,13050016,13050018,
C     413058550,13037977,13046450,13060000,13038500,13022500,13027500,
C     513023000,13057260,13038000/
C
C****SET DAYS PER MONTH
C
       DATA JD/31,28,31,30,31,30,31,31,30,31,30,31/
C
C****MD1 AND MD2 ARE THE BEGINNING AND ENDING DAY OF THE YEAR DURING
C****WHICH DATA MUST EXIST FOR ALL MEASURED DIVERSIONS.
C
       DATA MD1/121/,MD2/304/
C
C****INITIALIZE INPUT-OUTPUT UNITS.
C
       INTEGER OUT
       CALL ASSIGN (1,'SNKRCHGN.IND')
       CALL ASSIGN (4,'SNKWRA.EPL')
       CALL ASSIGN (5,'SNKWRA.DPL')
       CALL ASSIGN (9,'SNKWRA.HSE')
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      CALL ASSIGN (10,'SNKWRA.HSF')
      CALL ASSIGN (11,'SNKWRA.HSD')
      CALL ASSIGN (12,'SNKWRA.HSR')
      OPEN (UNIT=16,NAME='SNKRCHGN.OUT',TYPE='NEW',
     1CARRIAGECONTROL='LIST')
C
C**** ND  = NUMBER OF INDIVIDUAL DIVERSION MEASUREMENTS
C**** NR  = NUMBER OF REACHES IN RIVER SYSTEM
C**** NP  = NUMBER OF RESERVOIRS
C**** NEP = NUMBER OF EXCHANGE PUMPS IN SYSTEM
C**** NSP = NUMBER OF CANALS FOR WHICH SPECIAL COMPUTATIONS ARE MADE.
C**** NRC = NUMBER OF REACHES WITH DATA ON HISTORY.
C**** LRA = NUMBER OF LINES TO BE PRINTED OF DATA GENERATED FOR
C****       ADDITION TO ALLOCATIONS FILE.
C
      READ(1,7,END=45) ND,NR,NP,NEP,NSP,NRC,LRA
C
C**** IDS  = REACH NUMBER DIRECTLY DOWNSTREAM FROM NRTH REACH
C**** IORD = REACH NUMBERS IN ORDER OF OPERATION
C**** IRS  = RESERVOIR NUMBER IN NRTH REACH
C**** IDA  = NUMBER OF DAYS FOR WHICH GAINS ARE AVERAGED FOR NRTH REACH
C**** ICF = 1 IF REACH OUTFLOW IS NOT A MEASURED VALUE, BUT INSTEAD
C**** COMPUTED BY INFLOW MINUS DIVERSIONS.  IF ICF = 2 THE REACH IS AN
C**** OFFSTREAM CHANNEL, SUCH AS CROSSCUT CANAL.  VALUES ARE IN ORDER
C**** OF REACHES.
C
      READ(1,7)(IDS(L),L=1,NR)
      READ(1,7)(IORD(L),L=1,NR)
      READ(1,7)(IRS(L),L=1,NR)
      READ(1,7)(IDA(L),L=1,NR)
      READ(1,7)(ICF(L),L=1,NR)
    7 FORMAT(16I5)
C
C**** KNRC = THE ORDER IN WHICH REACH VALUES ARE READ FROM THE HISTORY
C****        FILE
C
      READ(1,7) (KNRC(L),L=1,NRC)
C
C****READ TIME LAGS (IN DAYS FROM REFERENCE REACH) FOR ALL REACHES,
C****DIVERSIONS AND RESERVOIRS.
C
      READ(1,7) (LAG(L),L=1,NR)
      READ(1,7) (LGD(L),L=1,NR)
      READ(1,7) (LGG(L),L=1,NP)
C
C****READ INITIAL VALUES OF RESERVOIR STORAGE IF FIRST DAY OF GAIN
C****COMPUTATION IS OCT 1 (IOCT=Y).
C
      PRINT 320
  320 FORMAT('    TO COMPUTE WATER YEAR REACH GAINS ENTER Y/N: '$)
      ACCEPT 321,IOCT
  321 FORMAT(A1)
      IF(IOCT.NE.'Y') GO TO 17
      READ(1,9) (RES(L,1),L=1,NP)
    9 FORMAT(5F10.1)
   17 CONTINUE
C
```

```
C****INQUIRE FOR VARIOUS OPTIONS OF OUTPUTING DATA AND RESULTS
C
      PRINT 330
  330 FORMAT('  TO PUT RIVER FLOWS IN OUTPUT FILE ENTER Y/N: '$)
      ACCEPT 321,IAF
      PRINT 331
  331 FORMAT('  TO OUTPUT ALL OTHER GAIN COMPONENTS ENTER Y/N: '$)
      ACCEPT 321,IAA
      PRINT 332
  332 FORMAT('  TO MAKE SEPARATE FILE OF DIVERSIONS ENTER Y/N: '$)
      ACCEPT 321,ISD
      IF(ISD.EQ.'Y') OPEN (UNIT=17,NAME='SNKRCHGN.DIV',TYPE='NEW',
     1CARRIAGECONTROL='LIST')
      PRINT 333
  333 FORMAT('  TO MAKE ARCHIVE FILE OF REACH GAINS ENTER Y/N: '$)
      ACCEPT 321,IST
      IF(IST.EQ.'Y') OPEN (UNIT=15,NAME='SNKRCHGN.DAT',TYPE='NEW',
     1CARRIAGECONTROL='LIST')
C
C****READ IDENTIFICATION NUMBERS, REACH NUMBERS, & NAMES OF DIVERSIONS
C
      READ(5,89) (IDN(L),IRCH(L),JC(L),(DIVNM(L,J),J=1,4),L=1,ND)
   89 FORMAT(2I10,I3,2X,4A4)
C
C****READ IDENTIFICATION NUMBERS, REACH NUMBERS, & NAMES OF EXCHANGE
C****PUMPS
C
      READ(4,89) (IEN(L),IER(L),IDUMMY,(EXCNM(L,J),J=1,4),L=1,NEP)
C
C****FIND DIVERSION ORDER NUMBER (ISPEC) FOR SPECIAL CANALS (CANALS FOR
C****WHICH DIVERSION MUST BE CALCULATED BY SUMMING OR OTHER MEANS).
C
      DO 133 L=1,NSP
      DO 135 J=1,ND
      IF(ISPEC(L).EQ.IDN(J)) GO TO 134
      IF(J.EQ.ND) PRINT 136, ISPEC(L)
  136 FORMAT(30H NO DIVERSION NUMBER FOUND FOR,I10)
  135 CONTINUE
  134 ISPEC(L)=J
  133 CONTINUE
C
C****TRANSFER SPECIAL CANAL DIVERSION ORDER NUMBERS TO UNDIMENSIONED
C****VARIABLES FOR LATER USE AS SUBSCRIPTS.
C
      I5 =ISPEC( 5)
      I6 =ISPEC( 6)
      I9 =ISPEC( 9)
      I10=ISPEC(10)
      I19=ISPEC(19)
      I21=ISPEC(21)
      I30=ISPEC(30)
      I31=ISPEC(31)
C
C****READ A MAXIMUM OF 400 DAYS OF FLOW MEASUREMENT DATA (A) FROM
C****SELECTED HISTORY FILE.  NRC IS THE NUMBER OF MEASUREMENT STATIONS
C****AND NED BECOMES THE ENDING DAY.  NMR IS THE STATION NUMBER, TYP IS
C**** "F" FOR FLOW STATION, NYE IS THE YEAR, AND NDY IS THE DAY.  KNRC
```

```
C****IS THE REACH NUMBER.
C
      JFI=0
      NED=-1
      DO 220 L=1,400
      NED=NED+1
      NMD=0
      DO 221 I=1,NRC
      J=KNRC(I)
      IF(JFI.EQ.1) GO TO 278
  227 READ(10,226,END=222) NMR,TYP,NYE,NDY,FTEMP
  226 FORMAT(I8,A1,I4,I3,9F7.0)
      GO TO 279
  278 JFI=0
  279 IF(NMR.GT.13088000) GO TO 227
      NDT=NDY+(NYE*1000)
      IF(I.GT.1) GO TO 225
      JDT(L)=NDT
      JYE(L)=NYE
      JDY(L)=NDY
  225 IF(NMR.LT.JRN(J)) GO TO 227
      IF(NMR.EQ.JRN(J)) GO TO 219
      PRINT 224, JRN(J),NDT,NMR
  224 FORMAT(14H REACH NUMBER ,I10,15H MISSING ON DAY,I10,5X,12HREACH NU
     1MBER,I10,43H  READ INSTEAD. PREVIOUS DAY VALUE ASSUMED.)
      IF(L.NE.1) GO TO 286
      PRINT 194
  194 FORMAT(50H ERROR OCCURRED ON FIRST DAY, EXECUTION TERMINATED)
      STOP
  286 IF(NMD.LE.10) GO TO 249
      PRINT 280
  280 FORMAT(25H MISSING FLOWS EXCEED 10 )
      STOP
  249 A(J,L)=A(J,L-1)
      NMD=NMD+1
      JFI=1
      GO TO 221
  219 IF(NDT.EQ.JDT(L)) GO TO 288
      PRINT 223, NMR,JDT(L)
  223 FORMAT(21H1 FLOW STATION NUMBER,I10,18HWRONG DATE FOR DAY,I10)
      STOP
  288 IF(FTEMP.LT.9000000.OR.L.EQ.1) GO TO 297
      A(J,L)=A(J,L-1)
      PRINT 299, JRN(J),NDT
  299 FORMAT(17H STATION NUMBER  ,I10,41H     HAS FLOW GREATER THAN 9000
     1000 ON DAY,I10,29H ,PREVIOUS DAY VALUE ASSUMED.)
      GO TO 221
  297 A(J,L)=FTEMP
  221 CONTINUE
```

```
  220 CONTINUE
  222 CONTINUE
C
C****READ DIVERSION MEASURMENTS (DVV) FOR ALL DAYS FROM SELECTED
C****HISTORY FILE.  MD1 AND MD2, THE BEGINNING AND ENDING DAY FOR WHICH
C****ALL DIVERSION DATA MUST BE PRESENT, ARE MODIFIED FOR LEAP YEARS.
C
      JTI=0
      JDI=0
      DO 201 L=1,400
      MDD1=MD1
      MDD2=MD2
      FEB=JYE(L)/4.0
      IFEB=FEB
      FEB=FEB-IFEB
      IF(FEB.GT.0.001.OR.JDY(L).LE.59) GO TO 199
      MDD1=MDD1+1
      MDD2=MDD2+1
  199 IF(JDY(L).GE.MDD1.AND.JDY(L).LE.MDD2) GO TO 198
C
C****THIS LOOP USED TO READ DIVERSION DATA FROM DEC 1 TO APR 1 WHEN
C****RECORDS NEED NOT BE PRESENT FOR EACH AND EVERY CANAL OR PUMP.
C
      DO 196 I=1,ND
      IF(JTI.EQ.1) GO TO 191
      IF(JDI.EQ.1) GO TO 192
  185 READ (11,80,END=204) NMR,TYP,NDT,DTEMP
      GO TO 190
  191 JTI=0
  190 IF(NDT.EQ.JDT(L)) GO TO 186
      JTI=1
      GO TO 197
  192 JDI=0
  186 IF(NMR.LT.IDN(I)) GO TO 185
      IF(NMR.EQ.IDN(I)) GO TO 195
      JDI=1
      GO TO 196
  195 DVV(I,L)=DTEMP
  196 CONTINUE
      GO TO 197
C
C****THIS LOOP USED TO READ DIVERSION DATA FROM APR 1 TO DEC 1 DURING
C****WHICH DATA RECORDS MUST BE PRESENT FOR ALL CANALS OR PUMPS.
C****CHECK FOR PROPER ORDER (IDN) AND DATE (JDT).  SKIP DIVERSION I9
C****(CROSSCUT CANAL) SINCE IT IS PRESENTLY NOT MEASURED.
C
  198 NMD=0
      DO 205 I=1,ND
      IF(JC(I).NE.0.OR.I.EQ.I9) GO TO 205
      IF(JTI.EQ.1) GO TO 189
   87 READ(11,80,END=204) NMR,TYP,NDT,DTEMP
   80 FORMAT(I8,A1,I7,9F7.0)
      GO TO 188
  189 JTI=0
  188 IF(NMR.GT.13088000) GO TO 87
      IF(NMR.LT.IDN(I)) GO TO 87
      IF(NMR.EQ.IDN(I)) GO TO 202
```

```
      PRINT 203, IDN(I),NDT,NMR
  203 FORMAT(18H DIVERSION NUMBER ,I10,15H MISSING ON DAY,I10,5X,16HDIVE
     1RSION NUMBER,I10,43H  READ INSTEAD. PREVIOUS DAY VALUE ASSUMED.)
      IF(L.NE.1) GO TO 287
      PRINT 194
      STOP
  287 IF(NMD.LE.25) GO TO 207
      PRINT 281
  281 FORMAT(29H MISSING DIVERSIONS EXCEED 25)
      STOP
  207 DVV(I,L)=DVV(I,L-1)
      NMD=NMD+1
      JTI=1
      GO TO 205
  202 IF(NDT.EQ.JDT(L)) GO TO 187
      PRINT 206, NMR,JDT(L)
  206 FORMAT(18H1DIVERSION NUMBER ,I10, 19H WRONG DATE FOR DAY,I10)
      STOP
  187 IF(DTEMP.LT.9000000.OR.L.EQ.1) GO TO 301
      DVV(I,L)=DVV(I,L-1)
      PRINT 302, IDN(I),NDT
  302 FORMAT(17H DIVERSION NUMBER,I10,41H     HAS FLOW GREATER THAN 9000
     1000 ON DAY,I10,29H ,PREVIOUS DAY VALUE ASSUMED.)
      GO TO 205
  301 DVV(I,L)=DTEMP
  205 CONTINUE
C
C****COMPUTE WILLOW CREEK DIVERSION TO PROGRESSIVE IRRIGATION DISTRICT
C****VIA SAND CREEK BY DEDUCTING SAND CREEK DELIVERY TO IDAHO CANAL
C****LANDS(I22).
C
  197 CONTINUE
      DVV(I19,L)=DVV(I19,L)-DVV(I21,L)
      IF(DVV(I19,L).GE.0.0) GO TO 200
      DVV(I21,L)=DVV(I21,L)+DVV(I19,L)
      DVV(I19,L)=0.0
  200 CONTINUE
  201 CONTINUE
  204 CONTINUE
C
C----SECTION 12-4, PART 1
C****READ EXCHANGE PUMP MEASURMENTS (EXC) FOR ALL DAYS FROM SELECTED
C****HISTORY FILE.  MD1 AND MD2, THE BEGINNING AND ENDING DAY FOR WHICH
C****ALL EXCHANGE DATA MUST BE PRESENT, ARE MODIFIED FOR LEAP YEARS.
C
      JTI=0
      JDI=0
      DO 157 L=1,400
      MDD1=MD1
```

```
      MDD2=MD2
      FEB=JYE(L)/4.0
      IFEB=FEB
      FEB=FEB-IFEB
      IF(FEB.GT.0.001.OR.JDY(L).LE.59) GO TO 303
      MDD1=MDD1+1
      MDD2=MDD2+1
  303 IF(JDY(L).GE.MDD1.AND.JDY(L).LE.MDD2) GO TO 304
C
C----SECTION 12-4, PART 2
C****THIS LOOP USED TO READ EXCHANGE WELL DATA FROM DEC 1 TO APR 1 WHEN
C****RECORDS NEED NOT BE PRESENT FOR EACH AND EVERY PUMP.
C
      DO 305 I=1,NEP
      IF(JTI.EQ.1) GO TO 306
      IF(JDI.EQ.1) GO TO 314
  316 READ (9,159,END=166) NMR,TYP,NDT,EXTEMP
      GO TO 315
  306 JTI=0
  315 IF(NDT.EQ.JDT(L)) GO TO 308
      JTI=1
      GO TO 157
  314 JDI=0
  308 IF(NMR.LT.IEN(I)) GO TO 316
      IF(NMR.EQ.IEN(I)) GO TO 312
      JDI=1
      GO TO 305
  312 EXC(I,L)=EXTEMP
  305 CONTINUE
      GO TO 157
C
C----SECTION 12-5
C****THIS LOOP USED TO READ EXCHANGE WELL DATA FROM APR 1 TO DEC 1
C****DURING WHICH DATA RECORDS MUST BE PRESENT FOR ALL PUMPS.
C****CHECK FOR PROPER ORDER (IEN) AND DATE (JDT).
C

  304 DO 158 I=1,NEP
      IF(JTI.EQ.1) GO TO 310
  167 READ(9,159,END=166) NMR,TYP,NDT,EXTEMP
  159 FORMAT(I8,A1,I7,F7.0)
      GO TO 309
  310 JTI=0
  309 IF(NMR.LT.IEN(I)) GO TO 167
      IF(NMR.EQ.IEN(I)) GO TO 168
      PRINT 169, IEN(I),NDT,NMR
  169 FORMAT(18H EXCHANGE WELL    ,I10,15H MISSING ON DAY,I10,5X,16HEXCH
     1ANGE WELL   ,I10,43H  READ INSTEAD. PREVIOUS DAY VALUE ASSUMED.)
      IF(L.NE.1) GO TO 311
      PRINT 194
      STOP
  311 EXC(I,L)=EXC(I,L-1)
      JTI=1
```

```
      GO TO 158
  168 IF(NDT.EQ.JDT(L)) GO TO 298
      PRINT 170, NMR,JDT(L),NDT
  170 FORMAT(18H1EXCHANGE  NUMBER ,I10, 19H WRONG DATE FOR DAY,I10,1H,,
     1 I10,13H READ INSTEAD)
      STOP
  298 EXC(I,L)=EXTEMP
  158 CONTINUE
  157 CONTINUE
  166 CONTINUE
C
C****READ RESERVOIR MEASUREMENTS FOR ALL DAYS FROM SELECTED HISTORY
C****FILE.  RSS IS RESERVOIR CONTENT AND EVP IS EVAPORATION IN INCHES.
C****CHECK FOR PROPER DATE (JDT).  NMR IS STATION NUMBER, TYP IS "R"
C****FOR RESERVOIR, AND NDT IS THE DATE.
C
      JRI=0
      DO 210 L=1,400
      DO 212 I=1,NP
      IF(JRI.EQ.1) GO TO 289
  215 READ(12,211,END=214) NMR,TYP,NDT,RTEMP,ETEMP,PTEMP
  211 FORMAT(I8,A1,I7,3F7.0)
      GO TO 282
  289 JRI=0
  282 IF(NMR.GT.13088000) GO TO 215
      IF(NMR.LT.IRESN(I)) GO TO 215
      IF(NMR.EQ.IRESN(I)) GO TO 283
      PRINT 284, IRESN(I),NDT,NMR
  284 FORMAT(17H RESERVOIR NUMBER,I10,16H  MISSING ON DAY,I10,5X,16HRESE
     1RVOIR NUMBER,I10,43H  READ INSTEAD. PREVIOUS DAY VALUE ASSUMED.)
      IF(L.NE.1) GO TO 285
      PRINT 194
      STOP
  285 RSS(I,L)=RSS(I,L-1)
      EVP(I,L)=EVP(I,L-1)
      JRI=1
      GO TO 212
  283 IF(NDT.EQ.JDT(L)) GO TO 208
      PRINT 213, NMR,JDT(L)
  213 FORMAT(17H1RESERVOIR NUMBER,I10,19H WRONG DATE FOR DAY,I10)
      STOP
  208 IF(RTEMP.LT.9000000.OR.L.EQ.1) GO TO 209
      RSS(I,L)=RSS(I,L-1)
      PRINT 290, IRESN(I),NDT
  290 FORMAT(17H RESERVOIR NUMBER,I10,41H HAS CONTENTS GREATER THAN 9000
     1000 ON DAY,I10,29H ,PREVIOUS DAY VALUE ASSUMED.)
      GO TO 291
  209 RSS(I,L)=RTEMP
  291 IF(ETEMP.LT.90000.OR.L.EQ.1.OR.I.NE.7) GO TO 193
```

```
      EVP(I,L)=EVP(I,L-1)
      PRINT 292, IRESN(I),NDT
  292 FORMAT(17H RESERVOIR NUMBER,I10,42H HAS EVAPORATION GREATER THAN 9
     10000 ON DAY,I10,29H ,PREVIOUS DAY VALUE ASSUMED.)
      GO TO 336
  193 EVP(I,L)=ETEMP
  336 IF(PTEMP.LT.90000.OR.L.EQ.1.OR.I.NE.7) GO TO 267
      PPT(I,L)=0.0
      PRINT 268, IRESN(I),NDT
  268 FORMAT(17H RESERVOIR NUMBER,I10,44H HAS PRECIPITATION GREATER THAN
     1 90000 ON DAY,I10,21H ,ZERO VALUE ASSUMED.)
      GO TO 212
  267 PPT(I,L)=PTEMP
  212 CONTINUE
  210 CONTINUE
  214 CONTINUE
C
C****INITIALIZE 4-DAY AVERAGE GAIN TO ZERO
C
      DO 85 L=1,NR
      DO 85 N=1,4
   85 GAV(L,N)=0.0
C
C****BEGIN LOOP FOR DAILY CALCULATIONS.
C
      DO 72 KD= 1,NED
C
C****CHECK FOR LEAP YEAR (FEB =0.0).
C
      FEB=JYE(KD)/4.0
      IFEB=FEB
      FEB=FEB-IFEB
C
C****ALIGN DATA FOR KDTH DAY BY TRANSFERRING DIVERSIONS TO ALTERNATE
C****ALTERNATE ARRAYS WITH PROPER LAGS.  KDPIL IS THE DAY (KD) PLUS THE
C****LAG (IL).  LGD IS THE TRAVEL TIME FROM THE POINT OF DIVERSION TO
C****MILNER.
C
      DO 71 L=1,ND
      IR=IRCH(L)
      IF(IR.LE.0) GO TO 71
      IL=LGD(IR)
      KDPIL=KD+IL
      IF(KDPIL.GT.0) GO TO 122
      DIV(L)=0.0
      GO TO 71
  122 DIV(L)=DVV(L,KDPIL)
   71 CONTINUE
C
```

```
C****FIND SUM (SDB) OF CANALS DIVERTING FROM DRY BED OF SNAKE RIVER
C****(CANALS I30 THROUGH I31).
C
      SDB=0.0
      DO 10 L=I30,I31
   10 SDB=SDB+DIV(L)
C
C****COMPUTE NORTHSIDE FROM GOODING (I5), GOODING BELOW NORTHSIDE (I6),
C****CROSSCUT TO FALL R (I9), AND CROSSCUT TO TETON (I10) DIVERSIONS.
C
      DIV(I5)=DIV(I5)/0.985
      DIV(I6)=DIV(I6)/0.985
      L=KD+LAG(26)
      IF(L.LE.0) GO TO 86
      IF(L.GT.NED) A(26,L)=A(26,NED)
      DIV(I9)=DIV(I10)-A(26,L)
      IF(DIV(I9).LT.0.0) DIV(I9)=0.0
      DIV(I10)=DIV(I10)-DIV(I9)
   86 CONTINUE
C
C****ALIGN DATA FOR KDTH DAY BY TRANSFERRING EXCHANGE PUMP DATA TO
C****ALTERNATE ARRAYS WITH PROPER LAGS.  KDPIL IS THE DAY (KD) PLUS THE
C****LAG (LGD). LGD IS THE TRAVEL TIME FROM THE POINT OF DIVERSION TO
C****MILNER, AND IS USED HERE ALSO FOR EXCHANGE PUMPS.
C
      DO 172 L=1,NEP
      IR=IER(L)
      IF(IR.LE.0) GO TO 172
      IL=LGD(IR)
      KDPIL=KD+IL
      IF(KDPIL.GT.0) GO TO 173
      ECH(L)=0.0
      GO TO 172
  173 ECH(L)=EXC(L,KDPIL)
  172 CONTINUE
C
C****ALIGN DATA FOR KDTH DAY BY TRANSFERRING RESERVOIR DATA TO
C****ALTERNATE ARRAYS WITH PROPER LAGS.  KDPIL IS THE DAY (KD) PLUS THE
C****LAG (IL).  LGG IS THE TRAVEL TIME FROM THE RESERVOIR TO MILNER.
C
      DO 74 L=1,NP
      IL=LGG(L)
      KDPIL=KD+IL
      IF(KDPIL.GT.0) GO TO 79
      EV(L)=0.0
      PP(L)=0.0
      RES(L,1)=0.0
      RES(L,2)=0.0
      GO TO 74
   79 LD=JDY(KD)
      IF(FEB.LT.0.001.AND.LD.GT.59) LD=LD-1
      IF(LD.GE.91.AND.LD.LE.304) GO TO 70
      EV(L)=0.0
      PP(L)=0.0
      GO TO 337
   70 EV(L)=EVP(L,KDPIL)
      IF(L.EQ.2.OR.L.EQ.4.OR.L.EQ.6) EV(L)=0.0
```

```
      IF(EVP(7,KDPIL).GT.0.50.OR.EVP(7,KDPIL).LT.0.0)
     1EVP(7,KDPIL)=0.25
      IF(EVP(7,KDPIL).GT.0.04) THEN
            IF(L.EQ.2) EV(L)=(1.18*EVP(7,KDPIL)*0.91)-0.03
            IF(L.EQ.4) EV(L)=(1.18*EVP(7,KDPIL)*0.67)-0.03
            IF(L.EQ.6) EV(L)=(1.18*EVP(7,KDPIL)*0.95)-0.02
            ENDIF
      IF(L.EQ.7.OR.L.EQ.8) EV(L)=1.18*EVP(7,KDPIL)
      PP(L)=PPT(L,KDPIL)
  337 RES(L,2)=RSS(L,KDPIL)
      KDPIL=KDPIL-1
      IF(KDPIL.LE.0) GO TO 74
      RES(L,1)=RSS(L,KDPIL)
   74 CONTINUE
C
C****VARIABLES USED IN THE REACH GAIN CALCULATION ARE INITIALIZED.  RIN
C****IS TOTAL REACH INFLOW, TRD IS TOTAL REACH DIVERSION, TRE IS TOTAL
C****EXCHANGE PUMPING, AND F IS TOTAL REACH NATURAL FLOW.
C
      DO 16 L=1,NR
      RIN(L)=0.0
      TRD(L)=0.0
   16 TRE(L)=0.0
C
C****DIVERSIONS ARE TOTALED BY REACH (TRD).
C
      DO 40 L=1,ND
      IR=IRCH(L)
      IF(IR.LE.0) GO TO 40
      TRD(IR)=TRD(IR)+DIV(L)
   40 CONTINUE
C
C****EXCHANGE PUMPS ARE TOTALED BY REACH (TRE).
C
      DO 174 L=1,NEP
      IR=IER(L)
      IF(IR.LE.0) GO TO 174
      TRE(IR)=TRE(IR)+ECH(L)
  174 CONTINUE
C
C****COMPUTE EVAPORATION AT RESERVOIRS FOR REACH GAIN CALCULATION. SA
C****IS THE SURFACE AREA AT ARINT INCREMENTS OF RESERVOIR STORAGE.  EV
C****IS PAN EVAPORATION IN INCHES.
C
      DO 116 L=1,NP
      EVAP(L)=0.0
      EVNET=0.7*EV(L)-PP(L)
      IF(EVNET.LT.0.0) EVNET=0.0
      IF(ARINT(L).LE.0.0.OR.EVNET.LE.0.0) GO TO 116
      RI=RES(L,1)/(ARINT(L)*1000.)
      IF(RI.LT.0.D) RI=D.D
      IW=RI
      R=RI-IW
      IF(IW.GT.9) IW=9
      AREA=SA(IW+1,L)+(R*(SA(IW+2,L)-SA(IW+1,L)))
      IF(L.EQ.7) THEN
                 AREATOT=AREA
```

```
                    IF(AREA.GT.8.0) AREA=8.0
                    AREAPH=AREATOT-AREA
                    AFETPH=AREAPH*(EVNET/0.12)
                    AFETPH=AFETPH/1.9835
                    END IF
          EVAP(L)=(AREA*EVNET/0.012)
          EVAP(L)=EVAP(L)/1.9835
      116 CONTINUE
C
C****ARRANGE PREVIOUS DAYS' GAIN VALUES FOR AVERAGING.  IDA IS THE
C****NUMBER OF DAYS OVER WHICH GAINS ARE TO BE AVERAGED.  AT LEAST FOUR
C****PREVIOUS GAINS ARE SAVED FOR LATER CALCULATIONS.
C
          DO 78 L=1,NR
          KA=IDA(L)
          IF(KA.LT.5) KA=5
          KT=KA-1
          DO 77 N=1,KT
          J=KA-N
       77 G(L,J+1)=G(L,J)
       78 CONTINUE
C
C
C****ALIGN DATA FOR KDTH DAY BY TRANSFERRING FLOW DATA (AF) TO
C****ALTERNATE ARRAYS WITH PROPER LAGS.  KDPIL IS THE DAY (KD) PLUS THE
C****LAG (IL).  LAG IS THE TRAVEL TIME FROM THE FLOW POINT TO MILNER.
C
C
          DO 73 J=1,NR
          L=IORD(J)
          IF(L.LE.0) GO TO 73
          IL=LAG(L)
          KDPIL=KD+IL
          IF(KDPIL.GT.0) GO TO 259
          AF(L)=0.0
          GO TO 73
      259 AF(L)=A(L,KDPIL)
C
C****IF A REACH HAS ICF=1, THEN THE FLOW WAS NOT MEASURED AND IS THERE-
C****FORE ESTIMATED BY REACH INFLOW LESS TOTAL REACH DIVERSIONS.
C
          IF(ICF(L).NE.1) GO TO 245
          AF(L)=RIN(L)-TRD(L)+TRE(L)
C
C****KEEP A CURRENT ACCOUNT OF REACH INFLOWS FOR ABOVE CALCULATION OF
C****UNMEASURED REACH OUTFLOWS, AND FOR GAIN CALCULATION BELOW.
C
      245 IO=IDS(L)
          IF(IO.LE.0) GO TO 73
          RIN(IO)=RIN(IO)+AF(L)
       73 CONTINUE
C
C****COMPUTE AMOUNT DRY BED FLOW IS DIFFERENT FROM INDIVIDUAL DIVERSION
C****MEASUREMENTS AND CORRECT COMPUTED FLOW BELOW DRY BED BY SAME
C****AMOUNT.  CORRECTION IS NECESSARY BECAUSE FLOW WAS COMPUTED USING
C****INDIVIDUAL CANALS.
C
```

```
      DBC=AF(37)-SDB
      AF(4)=AF(4)-DBC
      RIN(32)=RIN(32)-DBC
C
C****THE ACTUAL MEASURED RIVER FLOW (AF) AND THE TOTAL REACH DIVERSIONS
C****(TRD) ARE USED TO CALCULATE NATURAL GAINS TO EACH REACH.  IF
C****THE REACH CONTAINS A RESERVOIR THE GAIN IS CORRECTED FOR CHANGE IN
C****STORAGE (DS) AND EVAPORATION (EVAP).  RIN IS THE ACTUAL INFLOW TO
C****THE REACH. THEREFORE THE GAIN IS CALCULATED AS OUTFLOW + RESERVOIR
C****CHANGE IN STORAGE + EVAPORATION - INFLOW - EXCHANGE PUMPING
C**** + DIVERSIONS.  RETURN FLOW IS CONSIDERED A PART OF NATURAL FLOW
C****AND THUS NOT ESTIMATED.
C
      DO 41 L=1,NR
      IR=IORD(L)
      IF(IR.LE.0) GO TO 41
      IF(IRS(IR).EQ.0) GO TO 42
      IS=IRS(IR)
      DSTOR(IR)=(RES(IS,2)-RES(IS,1))/1.9835
      EVPR(IR)=EVAP(IS)
      GO TO 43
   42 DSTOR(IR)=0.0
      EVPR(IR)=0.0
   43 G(IR,1)=AF(IR)+DSTOR(IR)+EVPR(IR)-RIN(IR)+TRD(IR)-TRE(IR)
   41 CONTINUE
C
C****CORRECT GAIN IN HEISE TO BELOW DRY BED REACH AND TOTAL DIVERSIONS
C****IN SAME REACH FOR AMOUNT DRY BED FLOW EXCEEDS INDIVIDUAL DRY BED
C****CANALS (DBC).
C
      G(4,1)=G(4,1)+DBC
      TRD(4)=TRD(4)+DBC
C
C****CORRECT GAIN IN MENAN TO IDAHO FALLS REACH (5) AND IDAHO FALLS
C****TO SHELLEY (ACTUALLY ABV WILLOW CREEK TO SHELLEY (REACH 31)) FOR
C****GREAT WESTERN SPILL (AF(41)) AROUND IDAHO FALLS GAGE.
C
      G(5,1)=G(5,1)+AF(41)
      G(31,1)=G(31,1)-AF(41)
C
C****THE FLOW FROM THE CROSSCUT CANAL (AF(27) IS REMOVED FROM THE TETON
C****RIVER NR ST ANTHONY REACH GAIN SINCE IT IS NOT NATURAL TO THAT
C****REACH.
C
      G(18,1)=G(18,1)-AF(27)
C
C****REMOVE FLOW FROM END OF EAGLE ROCK CANAL TO WILLOW CREEK.
C
      G(25,1)=G(25,1)-AF(29)
C
C****ARRANGE PREVIOUS AVERAGE GAINS (GAV) FOR ADDITIONAL DAY'S
C****AVAILABLE DATA. COMPUTE CURRENT AVERAGE GAIN FOR LAST KT (NOT MORE
C****THAN 15) DAYS FOR EACH REACH FOR USE IN NATURAL FLOW COMPUTATION.
C****IF THE GAIN IS A PROJECTED VALUE (KDPIL > NED), THEN NO AVERAGING
C****IS DONE SINCE THAT VALUE IS ALREADY AN ESTIMATED VALUE.
C
      DO 235 L=1,NR
```

```
      DO 99 N=1,3
      J=4-N
   99 GAV(L,J+1)=GAV(L,J)
      GAV(L,1)=0.0
      IL=LAG(L)
      KDPIL=KD+IL
      IF(KDPIL.LE.NED) GO TO 88
      GAV(L,1)=G(L,1)
      GO TO 235
   88 KT=IDA(L)
      IF(KT.GT.15) KT=15
      IF(KT.LT.1) KT=1
      DO 236 N=1,KT
  236 GAV(L,1)=GAV(L,1)+(G(L,N)/KT)
  235 CONTINUE
C
C****INITIAL REACH GAIN CALCULATION ENDS HERE.  IF DAY OF FIRST WATER
C****RIGHT ALLOCATION HAS NOT BEEN REACHED (KD=17), THEN DO NOT WRITE
C****OUT REACH GAIN UNLESS WE ARE BEGINNING ON OCT 1(IOCT='Y').  IN THAT
C****CASE, OCTOBER 1 WILL AUTOMATICALLY BE THE FIRST DAY SINCE THE FILE
C****DOES NOT HAVE DATA BEFORE THAT DATE.
C
      IF(KD.LT.17.AND.IOCT.NE.'Y') GO TO 72
      IF(IAF.NE.'Y') GO TO 273
      DO 274 L=1,NR
  274 WRITE(16,263) JRN(L),JYE(KD),JDY(KD),JNINT(AF(L))
  263 FORMAT(I8,1HF,I4,I3,I7)
  273 DO 272 L=1,NR
      JNU=JRN(L)+1
      WRITE(16,263) JNU,JYE(KD),JDY(KD),JNINT(GAV(L,1))
  272 CONTINUE
      IF(IAA.NE.'Y') GO TO 319
      DO 275 L=1,NR
      IF(ICF(L).EQ.2) GO TO 275
      JNU=JRN(L)+2
      WRITE(16,263) JNU,JYE(KD),JDY(KD),JNINT(TRD(L))
      JNU=JRN(L)+3
      WRITE(16,263) JNU,JYE(KD),JDY(KD),JNINT(TRE(L))
      JNU=JRN(L)+4
      WRITE(16,263) JNU,JYE(KD),JDY(KD),JNINT(DSTOR(L))
      JNU=JRN(L)+5
      WRITE(16,263) JNU,JYE(KD),JDY(KD),JNINT(EVPR(L))
  275 CONTINUE
      DO 276 L=1,NP
  276 WRITE(16,277) IRESN(L),JYE(KD),JDY(KD),JIDNNT(RES(L,2))
  277 FORMAT(I8,1HR,I4,I3,I7)
  319 IF(ISD.NE.'Y') GO TO 322
      DO 318 L=1,NR
      IF(ICF(L).EQ.2) GO TO 318
      JNU=JRN(L)+2
      WRITE(17,263) JNU,JYE(KD),JDY(KD),JNINT(TRD(L))
  318 CONTINUE
  322 IF(IST.NE.'Y') GO TO 72
      DO 317 L=1,NR
      WRITE(15,313) JRN(L),JYE(KD),JDY(KD),JNINT(GAV(L,1)),
     1JNINT(AF(L)),JNINT(TRD(L)),JNINT(TRE(L)),
     2JNINT(DSTOR(L)),JNINT(EVPR(L))
```

```
  313 FORMAT(I8,1HG,I4,I3,6I10)
  317 CONTINUE
   72 CONTINUE
C
C****IF LRA > 0, A LISTING IS MADE OF THE FIRST LRA RECORDS FROM THE
C****TEMPORARY OUTPUT FILE FOR DEBUG PURPOSES.
C
      IF(LRA.LE.0) GO TO 45
      LR=0
      PRINT 153
  153 FORMAT(1H1)
      ENDFILE 16
      REWIND 16
  152 READ(16,150,END=45) NMR,TYP,NDT,(FI(I),I=1,4)
  150 FORMAT(I8,A1,I8,4F10.1)
      PRINT 151, NMR,TYP,NDT,(FI(I),I=1,4)
  151 FORMAT(6X,I8,A1,I8,4F10.1)
      LR=LR+1
      IF(LR.LE.LRA) GO TO 152
   45 STOP
      END
```

PROGRAM SECTIONS

	Name	Bytes	Attributes
0	$CODE	6874	PIC CON REL LCL SHR EXE RD NOWRT QUAD
1	$PDATA	1822	PIC CON REL LCL SHR NOEXE RD NOWRT QUAD
2	$LOCAL	864144	PIC CON REL LCL NOSHR NOEXE RD WRT QUAD
	Total Space Allocated	872840	

ENTRY POINTS

Address	Type	Name	References
0-00000000		SNKRCHGN$MAIN	

VARIABLES

Address	Type	Name	Attributes	References							
**	R*4	AFETPH		651=	652(2)=						
**	R*4	AREA		646=	648	649(2)=	650	654			
**	R*4	AREAPH		650=	651						
**	R*4	AREATOT		648=	650						
**	R*4	DBC		706=	707	708	736	737			
2-000D2DCC	R*4	DTEMP		304=	315	328=	353	359			
2-000D2DE8	R*4	ETEMP		457=	485	491					
**	R*4	EVNET		638=	639(2)=	640	651	654			
2-000D2DD8	R*4	EXTEMP		400=	411	423=	443				
**	R*4	FEB		290=	291	292(2)=	293	385=	386	387(2)=	388
				515=	516	517(2)=	585				
2-000D2DC0	R*4	FTEMP		239=	270	276					
**	I*4	I		236=	237	245	301=	311	312	315	325=
				326(2)	333	334	335	345(2)	354(2)	355	359
				397=	407	408	411	421=	427	428	429
				435(2)	443	455=	462	463	464	470(2)	471(2)
				479(2)	480	484	485	486(2)	487	491	492
				493	494	498	833(2)=	835(2)=			
**	I*4	I10		219=	550	552(2)					
**	I*4	I19		220=	367(2)	368	369	370			
**	I*4	I21		221=	367	369(2)					
**	I*4	I30		222=	539						
2-000D2DA8	I*4	I31		223=	539						
**	I*4	I5		216=	545(2)						
**	I*4	I6		217=	546(2)						
**	I*4	I9		218=	326	550	551(2)	552			
2-000D2D88	I*4	IAA		179=	794						
2-000D2D84	I*4	IAF		176=	786						
2-000D2D98	I*4	IDUMMY		199=							
**	I*4	IFEB		291=	292	386=	387	516=	517		
**	I*4	IL		527=	528	563=	564	576=	577	680=	681

			767=	768					
**	I*4	IO	696=	697	698(2)				
2-000D2D7C	I*4	IOCT	165=	167	785				
**	I*4	IR	525=	526	527	561=	562	563	619=	620
			621(2)	627=	628	629(2)	720=	721	722	723
			724	725	727	728	729(7)			
**	I*4	IS	723=	724(2)	725					
2-000D2D8C	I*4	ISD	182=	183	809					
2-000D2D90	I*4	IST	187=	188	815					
**	I*4	IW	643=	644	645(2)=	646(3)				
**	I*4	J	193(2)=	199(2)=	205=	206	207	210	237=	249
			250	251	262(2)	271(2)	272	276	667=	668(2)
			677=	678	764=	765(2)				
**	I*4	JDI	286=	303	310=	313=	381=	399	406=	409=
**	I*4	JFI	231=	238	242=	264=				
**	I*4	JNU	791=	792	797=	798	799=	800	801=	802
			803=	804	812=	813				
**	I*4	JRI	453=	456	460=	472=				
**	I*4	JTI	285=	302	306=	308=	327	331=	347=	380=
			398	402=	404=	422	426=	436=		
**	I*4	KA	663=	664(2)=	665	667				
**	I*4	KD	511=	515	528	547	564	577	584	681
			768	785	788(2)	792(2)	798(2)	800(2)	802(2)	804(2)
			807(2)	813(2)	817(2)					
**	I*4	KDPIL	528=	529	532	564=	565	568	577=	578
			590	592(3)	594	595	596	597	599	600
			601	602(2)=	603	604	681=	682	685	768=
			769							
**	I*4	KT	665=	666	772=	773(2)=	774(2)=	775	776	
**	I*4	L	141(2)=	142(2)=	143(2)=	144(2)=	145(2)=	151(2)=	156(2)=	157(2)=
			158(2)=	168(2)=	193(5)=	199(4)=	204=	206	207	210
			233=	246	247	248	254	262(2)	266	267
			270	271(2)	276	287=	290	293	296(2)	307
			315	338	345(2)	349	350	353	354(2)	359
			367(3)	368	369(3)	370	382=	385	388	391(2)
			403	411	432	435(2)	438	439	443	454=
			467	470(2)	471(2)	474	475	478	479(2)	484
			485	486(2)	491	492	493	498	505=	507
			524=	525	530	532(2)	539=	540	547=	548
			549(2)	550	560=	561	566	568(2)	575=	576
			579	580	581	582	587	588	590(2)	591(4)
			595(2)	596(2)	597(2)	599(3)	600(2)	601(2)	604(2)	611=
			612	613	614	618=	619	621	626=	627
			629	636=	637	638(2)	640	641(2)	646(3)	647
			654	655(2)	662=	663	668(2)	678=	679	680
			683	685(2)	690	691(4)	696	698	719=	720
			762=	765(2)	766	767	770(2)	772	776(3)	787=
			788(2)	790=	791	792	795=	796	797	798
			799	800	801	802	803	804	806=	807(2)
			810=	811	812	813	816=	817(7)		
**	I*4	LD	584=	585(3)=	586(2)					
**	I*4	LR	828=	837(2)=	838					

2-000D2D64	I*4	LRA	130=	827	838				
**	I*4	MD1	106D	288	383				
**	I*4	MD2	106D	289	384				
**	I*4	MDD1	288=	294(2)=	296	383=	389(2)=	391	
**	I*4	MDD2	289=	295(2)=	296	384=	390(2)=	391	
**	I*4	N	506=	507	666=	667	763=	764	775=	776
2-000D2D4C	I*4	ND	130=	193	205	207	301	325	524	618
2-000D2DC4	I*4	NDT	244=	246	251	266	272	304=	307	328=
			335	349	355	400=	403	423=	429	438
			439	457=	464	474	480	487	494	833=
			835							
2-000D2DBC	I*4	NDY	239=	244	248				
**	I*4	NED	232=	234(2)=	511	549(2)	769		
2-000D2D58	I*4	NEP	130=	199	397	421	560	626	
**	I*4	NMD	235=	258	263(2)=	324=	341	346(2)=	
2-000D2DB0	I*4	NMR	239=	243	249	250	251	267	304=	311
			312	328=	332	333	334	335	350	400=
			407	408	423=	427	428	429	439	457=
			461	462	463	464	475	833=	835	
2-000D2D54	I*4	NP	130=	158	168	455	575	636	806	
2-000D2D50	I*4	NR	130=	141	142	143	144	145	156	157
			505	611	662	677	719	762	787	790
			795	810	816					
2-000D2D60	I*4	NRC	130=	151	236				
2-000D2D5C	I*4	NSP	130=	204					
2-000D2DB8	I*4	NYE	239=	244	247				
**	I*4	OUT	110						
2-000D2DEC	R*4	PTEMP	457=	492	498				
**	R*4	R	644=	646					
**	R*4	RI	641=	642(2)=	643	644			
2-000D2DE4	R*4	RTEMP	457=	478	484				
**	R*4	SDB	538=	540(2)=	706				
2-000D2DB4	R*4	TYP	239=	304=	328=	400=	423=	457=	833=	835

ARRAYS

Address	Type	Name	Attributes	Bytes	Dimensions	References				
2-000A93D0	R*4	A		80000	(50, 400)	17	262(2)=	271(2)=	276=	549(2)=
						550	685			
2-0000BEA0	R*4	AF		320	(80)	15	683=	685=	691=	698
						706	707(2)=	729	743	744
						750	754	788	817	
2-000BD358	R*4	ARINT		40	(10)	19	51D	640	641	
2-000083E0	R*4	DIV		1600	(400)	12	530=	532=	540	545(2)=
						546(2)=	550(2)=	551(2)=	552(3)=	621
2-00009F60	R*4	DIVNM		8000	(400, 5)	14	193=			
2-0000C3A0	R*4	DSTOR		320	(80)	15	724=	727=	729	802
						817				
2-0000CFD0	R*4	DVV		640000	(400, 400)	17	41D	315=	345(2)=	354(2)=

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                                                                    359=      367(3)=   368       369(3)=   370=
                                                                    532
  2-000CE8E0  R*4  ECH                  120  (30)                    22       566=      568=      629
  2-000BD560  R*4  EV                    40  (10)                    19       579=      587=      590=      591=
                                                                    595=      596=      597=      599=      638
  2-000BD380  R*4  EVAP                  40  (10)                    19       637=      654=      655(2)=   725

  2-000BDDAC  R*4  EVP                16000  (10, 400)               21       471(2)=   486(2)=   491=      590
                                                                    592(3)=   594       595       596       597
                                                                    599
  2-0000C4E0  R*4  EVPR                 320  (80)                    15       725=      728=      729       804
                                                                    817
  2-000C2D60  R*4  EXC                48000  (30, 400)               22       411=      435(2)=   443=      568
  2-000C2B80  R*4  EXCNM                480  (30, 4)                 22       199=
  2-000CE958  R*4  FI                    80  (20)                    23       833=      835

  2-00008B60  R*4  G                   4800  (80, 15)                13       668(2)=   729=      736(2)=   743(2)=
                                                                    744(2)=   750(2)=   754(2)=   770       776
  2-000CE9A8  R*4  GAV                 1280  (80, 4)                 23       507=      765(2)=   766=      770=
                                                                    776(2)=   792       817
  2-000BD5B0  I*4  ICF                  320  (80)                    20       145=      690       796       811
  2-0000CC60  I*4  IDA                  320  (80)                    16       144=      663       772
  2-0000C620  I*4  IDN                 1600  (400)                   16       193=      206       311       312
                                                                    333       334       335       355

  2-00008A20  I*4  IDS                  320  (80)                    13       141=      696
  2-000C2A90  I*4  IEN                  120  (30)                    22       199=      407       408       427
                                                                    428       429
  2-000C2B08  I*4  IER                  120  (30)                    22       199=      561       627
  2-00009E20  I*4  IORD                 320  (80)                    14       142=      678       720
  2-00007DA0  I*4  IRCH                1600  (400)                   12       193=      525       619

  2-000CEEA8  I*4  IRESN                 36  (9)                     23        45D      462       463       464
                                                                    480       487       494       807
  2-0000C260  I*4  IRS                  320  (80)                    15       143=      722       723
  2-000BD6F0  I*4  ISPEC                124  (31)                    20        29D      206       207       210=
                                                                    216       217       218       219       220
                                                                    221       222       223
  2-000BCD18  I*4  JC                  1600  (400)                   19       193=      326
      **      I*4  JD                    48  (12)                    17       101D

  2-000BD76C  I*4  JDT                 1600  (400)                   21       246=      266       267       307
                                                                    349       350       403       438       439
                                                                    474       475
  2-000C2450  I*4  JDY                 1600  (400)                   21       248=      293       296(2)    388
                                                                    391(2)    584       788       792       798
                                                                    800       802       804       807       813
                                                                    817
  2-000C1D6C  I*4  JRN                  164  (41)                    21        74D      249       250       251
                                                                    272       788       791       797       799
                                                                    801       803       812       817
  2-000C1E10  I*4  JYE                 1600  (400)                   21       247=      290       385       515
                                                                    788       792       798       800       802
                                                                    804       807       813       817
  2-000C1C2C  I*4  KNRC                 320  (80)                    21       151=      237

  2-0000CEE0  I*4  LAG                  200  (50)                    17       156=      547       680       767
```

2-000BCC50	I*4	LGD	200	(50)	18	157=	527	563	
2-0000CFA8	I*4	LGG	40	(10)	17	158=	576		
**	R*4	OM	48	(12)	16				
2-000BD588	R*4	PP	40	(10)	19	580=	588=	600=	638
2-000CEECC	R*4	PPT	16000	(10, 400)	23	493=	498=	600	
2-00000000	R*8	RES	160	(10, 2)	16	37	168=	581=	582=
					601=	604=	641	724(2)	807
2-0000C120	R*4	RIN	320	(80)	15	612=	691	698(2)=	708(2)=
					729				
2-000000A0	R*8	RSS	32000	(10, 400)	18	37	470(2)=	479(2)=	484=
					601	604			
2-000BD3A8	R*4	SA	440	(11, 10)	19	57D	646(3)		
2-0000BFE0	R*4	TRD	320	(80)	15	613=	621(2)=	691	729
					737(2)=	798	813	817	
2-0000CDA0	R*4	TRE	320	(80)	16	614=	629(2)=	691	729
					800	817			

LABELS

Address	Label	References							
1-00000000	7'	130	141	142	143	144	145	146#	151
		156	157	158					
1-0000003D	9'	168	169#						
**	10	539	540#						
**	16	611	614#						
0-000002F5	17	167	170#						
0-00001333	40	618	620	622#					
0-0000158E	41	719	721	730#					
0-0000154C	42	722	727#						
0-0000155A	43	726	729#						
0-00001AD3	45	130	827	833	839#				
0-0000119C	70	586	590#						
0-00001044	71	524	526	531	533#				
0-000019EF	72	511	785	815	822#				
0-000014D0	73	677	679	684	697	699#			
0-000012A3	74	575	583	603	605#				
**	77	666	668#						
**	78	662	669#						
0-0000115C	79	578	584#						
1-0000029B	80'	304	328	329#					
**	85	505	506	507#					
0-000010E2	86	548	553#						
0-000008EE	87	328#	332	333					
0-00001624	88	769	772#						
1-00000115	89'	193	194#	199					
**	99	763	765#						
0-000013FC	116	636	640	656#					
0-00001030	122	529	532#						

```
     **        133                          204       211#
  0-00000522   134                          206       210#
     **        135                          205       209#

  1-00000122   136'                         207       208#
  1-0000066F   150'                         833       834#
  1-0000067B   151'                         835       836#
  0-00001A2C   152                          833#      838
  1-0000066B   153'                         829       830#

  0-00000D24   157                          382       405       413       445#
  0-00000D1D   158                          421       437       444#
  1-000003C4   159'                         400       423       424#
  0-00000D2E   166                          400       423       446#
  0-00000BF9   167                          423#      427

  0-00000CC4   168                          428       438#
  1-000003CE   169'                         429       430#
  1-0000043B   170'                         439       440#
  0-0000111E   172                          560       562       567       569#
  0-0000110C   173                          565       568#

  0-00001359   174                          626       628       630#
  0-00000831   185                          304#      311
  0-00000824   186                          307       311#
  0-00000A20   187                          349       353#
  0-000008D8   188                          330       332#

  0-000008D4   189                          327       331#
  0-00000814   190                          305       307#
  0-00000810   191                          302       306#
  0-0000080C   192                          303       310#
  0-00000F44   193                          485       491#

  1-000001B8   194'                         255       256#      339       433       468
  0-00000888   195                          312       315#
  0-0000089D   196                          301       314       316#
  0-00000A93   197                          309       317       366#
  0-000008A8   198                          296       324#

  0-000007E5   199                          293       296#
  0-00000AC5   200                          368       371#
     **        201                          287       372#
  0-000009E4   202                          334       349#
  1-000002A7   203'                         335       336#

  0-00000ACF   204                          304       328       373#
  0-00000A8D   205                          325       326       348       358       360#
  1-00000334   206'                         350       351#
  0-000009C4   207                          341       345#
  0-00000E94   208                          474       478#

  0-00000EE8   209                          478       484#
     **        210                          454       500#
  1-0000047D   211'                         457       458#
  0-00000FA0   212                          455       473       497       499#
  1-000004F6   213'                         475       476#
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  0-00000FB1  214                    457      501#
  0-00000D61  215                    457#     461      462
  0-000006E8  219                    250      266#
      **      220                    233      278#
  0-00000790  221                    236      265      275      277#

  0-000007A1  222                    239      279#
  1-00000209  223'                   267      268#
  1-00000153  224'                   251      252#
  0-000005DB  225                    245      249#
  1-00000145  226'                   239      240#

  0-000005E8  227                    239#     243      249
  0-00001662  235                    762      771      777#
      **      236                    775      776#
  0-000014B9  245                    690      696#
  0-000006CC  249                    258      262#

  0-00001480  259                    682      685#
  1-00000645  263'                   788      789#     792      798      800      802      804      813
  0-00000F98  267                    492      498#
  1-000005E8  268'                   494      495#
      **      272                    790      793#

  0-000016DB  273                    786      790#
      **      274                    787      788#
  0-0000187C  275                    795      796      805#
      **      276                    806      807#
  1-00000651  277'                   807      808#

  0-0000059C  278                    238      242#
  0-000005A0  279                    241      243#
  1-000001ED  280'                   259      260#
  1-00000314  281'                   342      343#
  0-00000D4C  282                    459      461#

  0-00000E50  283                    463      474#
  1-00000489  284'                   464      465#
  0-00000E28  285                    467      470#
  0-000006A8  286                    254      258#
  0-000009A0  287                    338      341#

  0-0000072C  288                    266      270#
  0-00000D48  289                    456      460#
  1-00000523  290'                   480      481#
  0-00000EF2  291                    483      485#
  1-00000585  292'                   487      488#

  0-00000780  297                    270      276#
  0-00000D0C  298                    438      443#
  1-00000239  299'                   272      273#
  0-00000A78  301                    353      359#
  1-00000362  302'                   355      356#

  0-00000B15  303                    388      391#
  0-00000BD4  304                    391      421#
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0-00000BC9	305	397	410	412#					
0-00000B40	306	398	402#						
0-00000B54	308	403	407#						
0-00000BEC	309	425	427#						
0-00000BE8	310	422	426#						
0-00000CA8	311	432	435#						
0-00000BB8	312	408	411#						
1-0000065D	313'	817	820#						
0-00000B3C	314	399	406#						
0-00000B44	315	401	403#						
0-00000B61	316	400#	407						
**	317	816	821#						
0-00001941	318	810	811	814#					
0-000018DB	319	794	809#						
1-00000005	320'	163	164#						
1-0000003A	321'	165	166#	176	179	182	187		
0-00001946	322	809	815#						
1-00000043	330'	174	175#						
1-00000076	331'	177	178#						
1-000000AB	332'	180	181#						
1-000000E0	333'	185	186#						
0-00000F4E	336	490	492#						
0-0000127E	337	589	601#						

FUNCTIONS AND SUBROUTINES REFERENCED

Type	Name	References							
	ASSIGN	111	112	113	114	115	116	117	
I*4	JIDNNT	807							
I*4	JNINT	788	792	798	800	802	804	813	817(6)

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00001
00002


  +-----------------------------------------------+
  |            KEY TO REFERENCE FLAGS             |
  |    =   - Value Modified                       |
  |    #   - Defining Reference                   |
  |    A   - Actual Argument, possibly modified   |
  |    D   - Data Initialization                  |
  |   (n)  - Number of occurrences on line        |
  +-----------------------------------------------+


COMMAND QUALIFIERS

  FORTRAN/LIST/CROSS_REFERENCE SNKRCHGN

  /ASSUME=(ACCURACY_SENSITIVE,NODUMMY_ALIASES,NOSOURCE_INCLUDE)
  /BLAS=(INLINE,MAPPED)
  /CHECK=(NOALIGNMENT,NOASSERTIONS,NOBOUNDS,OVERFLOW,NOUNDERFLOW)
  /DEBUG=(PARAMETERS=USED,NOSYMBOLS,TRACEBACK)
  /DESIGN=(NOCOMMENTS,NOPLACEHOLDERS)
  /DIRECTIVES=(DEPENDENCE)
  /MATH_LIBRARY=(ACCURATE,NOV5)
  /PARALLEL=(NOAUTOMATIC,NOMANUAL)
  /SHOW=(NODATA_DEPENDENCES,NODICTIONARY,NOINCLUDE,NOLOOPS,MAP,NOPREPROCESSOR,SINGLE)
  /STANDARD=(NOMIA,NOSEMANTIC,NOSOURCE_FORM,NOSYNTAX)
  /WARNINGS=(NOALIGNMENT,NOAlpha_AXP,NODECLARATIONS,GENERAL,INFORMATIONAL,NOINLINE,NOTRUNCATED_SOURCE,
             NOULTRIX,UNCALLED,UNINITIALIZED,UNUSED,USAGE,NOVAXELN)
  /CONVERT=NATIVE  /CROSS_REFERENCE  /NOD_LINES  /ERROR_LIMIT=30  /NOEXTEND_SOURCE
  /F77  /NOG_FLOATING  /I4  /NOMACHINE_CODE  /OPTIMIZE=LEVEL=3
  /NORECURSIVE  /NOSYNCHRONOUS_EXCEPTIONS  /TERMINAL=NOSTATISTICS  /NOVECTOR
  /NOANALYSIS_DATA
  /NODIAGNOSTICS
  /LIST=HYDRO:[BSUTTER.SNAKE]SNKRCHGN.LIS;6
  /OBJECT=HYDRO:[BSUTTER.SNAKE]SNKRCHGN.OBJ;1


COMPILER:  DEC Fortran V6.3-141

COMPILATION STATISTICS

  Run Time:           2.50 seconds
  Elapsed Time:       12.91 seconds
  Page Faults:        6023
  Dynamic Memory:     2560 pages
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SNIVBA 1Ol

13010500	1	1	1JACKSON LAKE
13032450	2	2	1PALISADES
13032510	3	0	P BIRD
13032520	3	0	L CUSHMAN
13032920	3	0	R ROSE
13033010	3	0	PALISADES CANAL
13033643	3	0	J FLEMING
13033646	3	0	T LOTT #1
13033650	3	0	J WEEKS
13033670	3	0	R JACOBSON
13033690	3	0	T LOTT #2 (19)
13033900	3	0	P PIATAC
13034460	3	0	L JACOBSON
13034480	3	0	W BITTON
13037305	3	0	I SPAULDING (TR)
13037475	3	0	RILEY
13037490	3	0	B FOSTER
13037505	4	0	ANDERSON
13037510	4	0	M & M CATTLE (S)
13037515	4	0	M & M CATTLE (N)
13037855	4	0	M NEWBY #1
13037860	4	0	M NEWBY #2 (20)
13037880	4	0	M NEWBY #3 (20)
13037975	4	0	EAGLE ROCK (1)
13037980	4	0	FARMERS FRIEND
13037985	4	0	ENTERPRISE
13037997	4	0	C HICKMAN
13038025	4	0	BUTLER ISLAND
13038030	4	0	ROSS AND RAND
13038050	4	0	STEELE
13038055	4	0	HARRISON
13038065	4	0	CHENEY
13038079	4	0	J BROWN
13038080	4	0	BUTLER ISL #2
13038084	4	0	G SCOTT (11)
13038085	4	0	RUDY
13038090	4	0	LOWDER SLOUGH
13038095	4	0	BOOMER (2)
13038098	4	0	KITE & NORD
13038110	4	0	BURGESS
13038113	4	0	M H HILL
13038115	4	0	CLARK & EDWARDS
13038145	4	0	CROFT
13038147	4	0	A ZAUGG
13038148	4	0	G HOLMAN
13038149	4	0	L TAYLOR
13038150	4	0	EAST LABELLE
13038151	4	0	B GROVER
13038179	4	0	RIGBY LATERL (3)
13038180	4	0	RIGBY
13038201	4	0	WHITE ISLAND
13038205	4	0	DILTS
13038210	4	0	ISLAND
13038225	4	0	W LABELLE & LG I
13038305	4	0	PARKS & LEWSVLLE
13038315	4	0	NORTH RIGBY
13038331	4	0	JEFF HILLS ELEC
13038332	4	0	JEFF HILLS ENG
13038340	4	0	WHITE DITCH (3A)
13038352	4	0	J W JONES #1
13038360	4	0	BRAMWELL
13038362	4	0	ELLIS (12)
13038365	4	0	FRESH PAC (12)
13038371	4	0	J T JONES
13038372	4	0	C JONES (3A)
13038373	4	0	N TAYLOR
13038382	4	0	W DABELL
13038384	4	0	D STOKER
13038386	4	0	J N ERICKSON
13038387	4	0	NELSON
13038388	4	0	MATTSON-CRAIG
13038392	32	0	SUNNYDELL
13038393	32	0	B COVINGTON
13038398	32	0	D BLAKELY
13038405	32	0	T PARKINSON
13038410	32	0	R GROVER
13038416	32	0	T CHENEY
13038417	32	0	M CHENEY
13038422	32	0	L ROBINSON
13038426	32	0	LENROOT

13038428	32	0	R BURNS
13038431	32	0	REID
13038434	32	0	TEXAS & LIBRTY P
13038435	32	0	BANNOCK JIM
13038436	32	0	HILL PETTINGER
13038437	32	0	NELSON COREY
13038438	32	0	R ROTH
13039000	11	3	1HENRYS LAKE
13042000	12	4	1ISLAND PARK
13042600	13	-1	1ASHTON POWER
13045655	13	0	G MAROTZ
13045675	13	0	L CHERRY
13045705	13	0	F HOWELL
13045710	13	0	D WOODRUFF
13045721	13	0	E G HOWELL #1
13045724	13	0	E G HOWELL #2
13045727	13	0	E G HOWELL #3
13045755	13	0	T HOLCOMB
13045780	13	0	R LEE
13045805	13	0	Z J EGBERT #5
13045807	13	0	R RITCHEY
13045810	13	0	R STEWART #2
13045811	13	0	R STEWART #1
13045813	13	0	Z J EGBERT #3
13045823	13	0	R D BAKER
13045829	13	0	D LARSON
13045849	13	0	D SEELEY
13045860	13	0	Z J EGBERT #2
13045880	13	0	Z J EGBERT #4
13045930	13	0	Z J EGBERT #1
13045940	13	0	G NEDROW
13045950	13	0	BAKER & NEDROW
13045960	13	0	H STEINMAN #1
13046015	13	0	R & C BAUM
13046020	13	0	J MCCULLOCH
13046025	30	0	H STEINMAN #2
13046030	30	0	C LENZ (R HESS)
13046070	30	0	A NEDROW #1
13046072	30	0	A NEDROW #2
13046075	30	0	J NEDROW
13046080	30	0	E & S CLARK
13046083	30	0	V & D KIRKHAM
13046084	30	0	D NEDROW
13046086	30	0	L FRANSEN
13046090	30	0	L BRATT
13046095	30	0	L LOOSLI #1
13046310	30	0	DEWEY
13046315	30	0	J SEELEY
13046500	14	5	1GRASSY LAKE
13047305	15	0	YELLOWSTONE
13047475	15	0	MARYSVILLE
13047515	16	0	F & L GRIFFEL
13047565	16	0	R BAUM
13047570	16	0	H GRIFFEL
13047575	16	0	FARMERS OWN
13047605	16	0	W SCAFE
13047615	16	0	R STURM #2 (10)
13047616	16	0	R STURM #1 (10)
13047625	16	0	M GRIFFEL
13047635	16	0	C LOOSLI #1
13047681	16	0	CONANT CR CANAL
13047710	16	0	K NYBORG
13047900	16	0	BOOM CR CANAL
13048025	16	0	SQUIRREL CR CNL
13048050	16	0	ORME
13048051	16	0	L ORME
13048080	16	0	D HARSHBARGER
13048265	16	0	D ZUNDELL
13048275	16	0	L LOOSLI #2
13048280	16	0	C & L LOOSLI
13048290	16	0	C LOOSLI #2
13048350	16	0	J HILL
13048430	16	0	D REYNOLDS
13048440	16	0	C LOOSLI #3
13048470	16	0	T POTTER
13048475	16	0	ENTERPRISE
13048480	16	0	L MARTINDALE #2
13048485	16	0	R D MILLER
13048551	16	0	L MARTINDALE #1
13048556	16	0	W C DAVIS (10)
13048560	16	0	FALL RIVER CANAL

13048705	16	0	CHESTER
13049008	16	0	MCBEE
13049010	16	0	SILKEY
13049015	16	0	CURR
13049490	16	0	L LOOSLI #3
13049495	16	0	G BLANCHARD
13049505	17	0	D BLANCHARD
13049550	17	0	LAST CHANCE
13049560	17	0	CROSSCUT TO TETN
13049561	17	0	XCUT FALL R (16)
13049705	17	0	FARMERS FRIEND
13049710	17	0	TWIN GROVES
13049725	17	0	ST ANTHONY UNION
13049805	17	0	SALEM UNION
13050525	10	0	EGIN
13050530	10	0	ST AN U FDR (18)
13050535	10	0	INDEPENDENT
13050545	10	0	CONSOLIDATED FRS
13053951	18	0	SOUTH PIPE
13053971	18	0	J RICKS
13054031	18	0	BOELKE
13054042	18	0	CLEMENTSVILLE
13054111	18	0	R & J BROWN
13054291	18	0	P L STOTT #1
13054420	18	0	B PARKINSON
13054515	18	0	CANYON CR CANAL
13054577	18	0	G CRAPO
13054590	18	0	P STEVENS
13054705	18	0	V SCHWENDIMAN
13054762	18	0	RR RICKS
13054772	18	0	RB RICKS
13054801	18	0	CANYON CR LAT
13054850	18	0	SIDDOWAY SHEEP
13054940	18	0	H BISCHOFF
13055030	19	0	WILFORD
13055040	19	0	TETON IRRIGATION
13055042	19	0	SIDDOWAY (15)
13055050	19	0	PIONEER
13055060	19	0	STEWART
13055193	19	0	N BIRCH
13055195	19	0	B LEAVITT
13055205	19	0	PINCOCK-BYINGTON
13055206	19	0	B HOLLIST
13055210	19	0	TETON ISLAND FDR
13055245	19	0	NORTH SALEM
13055263	19	0	J HARRIS
13055275	19	0	ROXANA
13055280	19	0	ISLAND WARD
13055295	19	0	SAUREY
13055306	19	0	MCCORMICK-ROWE
13055311	19	0	PINCOCK-GARNER
13055313	19	0	GARDNER-BEDDES
13055314	19	0	BIGLER SLOUGH
13055315	19	0	WOODMANSEE-JSN
13055319	19	0	R O WILDING
13055323	19	0	CITY OF REXBURG
13055325	19	0	T BRUNSON
13055327	19	0	J S WRIGHT
13055334	19	0	REXBURG IRRIG
13056490	20	0	HF GROUNDWATER
13057012	21	0	L A HARTERT
13057013	21	0	A GUNDERSON
13057014	21	0	R & C MILLER (4)
13057015	21	0	R MILLER (4)
13057018	21	0	BOYLE & S #1 (4)
13057021	21	0	BOYLE & S #2 (4)
13057025	21	0	BUTTE & MARKET L
13057030	5	0	BEAR TRAP
13057038	5	0	O ELLSWORTH
13057046	5	0	H TOMCHAK
13057097	5	0	N FULLMER
13057105	5	0	D BOYCE
13057106	5	0	B TOMCHAK #1
13057107	5	0	C BOYCE
13057114	5	0	STIENKE-MURDOCK
13057115	5	0	L CARLSON N (13)
13057116	5	0	B TOMCHAK #2
13057117	5	0	L CARLSON S (13)
13057118	5	0	H BROWN
13057120	5	0	ARRINGTON NTH
13057121	5	0	G OFFUT (13)

13057122	5	0	ARRINGTON STH
13057123	5	0	BEAR ISL NORTH
13057124	5	0	BEAR ISL WEST
13057125	5	0	OSGOOD
13057126	5	0	CLEMENTS
13057130	5	0	KENNEDY
13057135	5	0	GREAT WESTERN
13057140	5	0	L HANSEN E (13)
13057141	5	0	J GAY
13057142	5	0	L HANSEN S (13)
13057143	5	0	YORGENSON (13)
13057144	5	0	M MACKAY (13)
13057145	5	0	IDAHO
13057171	36	0	A BUTIKOFER (13)
13057250	36	0	PORTER (17)
13057938	23	0	LOERTSCHER
13057950	24	6	1RIRIE RESERVOIR
13058015	25	0	BOYD FOSTER
13058090	25	0	B JOHNSON
13058105	25	0	LOVELL # 1
13058125	25	0	FERGUSON
13058145	25	0	LOVELL # 2
13058165	25	0	WALLACE REID
13058210	25	0	SARGENT & SUMMRS
13058230	25	0	DURTSCHI PUMPS
13058250	25	0	REED PUMPS
13058270	25	0	SPERRY
13058290	25	0	ORVAL AVERY
13058310	25	0	ROY AVERY
13058330	25	0	STUCKI PUMPS
13058350	25	0	ORVAL AVERY PUMP
13058370	25	0	ROY COOPER SAND
13058380	25	0	ROY COOPER WILL
13058510	25	0	PROGRESSIVE SAND
13058512	25	0	BEAN
13058514	25	0	W & O COOPER
13058515	25	0	IDAHO FR SAND CK
13058530	25	0	PROGRESSIVE WILL
13058532	25	0	DEMICK
13059050	31	-1	IDAHO FALLS POWR
13059486	31	0	IF MONROC LARGE
13059490	31	0	IF MONROC LYONS
13059505	31	0	WOODVILLE
13059525	31	0	SNAKE RIVER VY
13060055	6	0	P HILL (14)
13060500	6	0	RESERVATION
13061430	6	0	BLACKFOOT
13061520	6	0	NEW LAVA SIDE
13061521	6	0	R C ADAMS #1 (5)
13061522	6	0	R C ADAMS #2 (5)
13061525	6	0	PEOPLES
13061610	6	0	ABERDEEEN
13061650	6	0	CORBETT
13061670	6	0	NIELSON-HANSEN
13061677	6	0	R LAMBERT
13061685	6	0	K CHRISTENSEN(6)
13061705	6	0	RIVERSIDE
13061995	6	0	DANSKIN
13062050	6	0	TREGO
13062447	6	0	HOPKINS PKNG (7)
13062502	22	0	MONROC BLACKFOOT
13062503	22	0	WEARYRICK
13062506	22	0	WATSON
13062507	22	0	PARSONS
13069490	38	0	GROUNDWATER
13075900	7	0	FT HALL MICHAUD
13076400	7	0	FALLS IRRIGATION
13076500	7	7	1AMERICAN FALLS
13076751	7	-1	1AMERICAN FALLS P
13077652	8	0	M OSBORN
13077755	8	0	CALL FARMS
13077775	8	0	M KUWANA
13080000	8	0	MINIDOKA NTH S
13080500	8	0	MINIDOKA STH (8)
13081000	8	8	1LAKE WALCOTT
13081400	8	-1	1MINIDOKA POWER
13084590	9	0	E HERBERT (8)
13084598	9	0	MID MISC (8)
13084599	9	0	MILNER MISC
13084610	9	0	H WILLIAMS (8)
13084640	9	0	BURLEY GC

13084650	9	0	CITY OF BURLEY
13084655	9	0	SIMPLOT #3
13084690	9	0	AMALGA SUGAR
13084720	9	0	COORS BREWNG (8)
13084725	9	0	R BLEI
13085270	9	0	H SCHODDE
13085275	9	0	SIMPLOT #1
13085300	9	0	SIMPLOT #2
13085390	9	0	CAREY-ADAMS (8)
13085400	9	0	V HOBSON
13085500	9	0	A & B IRR DIST
13085800	9	0	PA LATERAL (9)
13086000	9	0	MILNER LOW LIFT
13086510	9	0	A LATERAL (9)
13086520	9	0	NS XCUT GDNG (9)
13086530	9	0	RES DIST #2
13087000	9	0	NORTHSIDE TWIN F
13087500	9	0	TWIN FALLS SOUTH

SNKFORMAT.DAT

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13010500R,AF,FB,*,*  JACKSON LAKE NR MORAN
13011000F,QD,GD,*,*  SNAKE RIVER NR MORAN
13022500F,QD,GD,*,*  SNAKE RIVER ABV RESERVOIR NR ALPINE
13023000F,QD,GD,*,*  GREYS RIVER ABV RESERVOIR NR ALPINE
13027500F,QD,GD,*,*  SALT RIVER ABV RESERVOIR NR ALPINE
13032450R,AF,FB,*,*  PALISADES RESERVOIR NR IRWIN
13032500F,QD,GD,*,*  SNAKE RIVER NR IRWIN
13037500F,QD,GD,*,*  SNAKE RIVER NR HEISE
13037505D,QJ,GJ,*,*  ANDERSON CANAL
13037505I,QC,CH,*,*
13037975D,QJ,GJ,*,*  EAGLE ROCK CANAL
13037975I,QC,CH,*,*
13037977F,QJ,GJ,*,*  EAGLE ROCK DUMP
13037980D,QJ,GJ,*,*  FARMERS FRIEND CANAL NR HEISE
13037980I,QC,CH,*,*
13038000F,QD,GD,*,*  DRY BED NR RIRIE
13038115D,QJ,GJ,*,*  CLARK AND EDWARDS CANAL
13038115I,QC,CH,*,*
13038210D,QJ,GJ,*,*  ISLAND CANAL
13038210I,QC,CH,*,*
13038500F,QD,GD,*,*  SNAKE RIVER AT LORENZO
13039000R,AF,FB,*,*  HENRY'S LAKE RESERVOIR
13039500F,QD,GD,*,*  HENRY'S FORK NR LAKE
13042000R,AF,FB,*,*  ISLAND PARK RESERVOIR NR ISLAND PARK
13042500F,QD,GD,*,*  HENRY'S FORK NR ISLAND PARK
13046023F,QD,GD,*,*  HENRY'S FORK NR ASHTON
13046500R,AF,FB,*,*  GRASSY LAKE RESERVOIR
13046510F,QD,*,*,*  GRASSY LAKE OUTFLOW
13047500F,QD,GD,*,*  FALLS RIVER NR SQUIRREL
13048560D,QJ,GJ,*,*  FALL RIVER CANAL
13048560I,QC,CH,*,*
13049500F,QD,GD,*,*  FALLS RIVER NR CHESTER
13049560D,QJ,GJ,*,*  CROSSCUT CANAL
13049560I,QC,CH,*,*
13049725D,QJ,GJ,*,*  ST ANTHONY UNION CANAL
13049725I,QC,CH,*,*
13050018F,QJ,GJ,*,*  CROSSCUT CANAL AT END
13050500F,QD,GD,*,*  HENRY'S FORK AT ST ANTHONY
13050525D,QJ,GJ,*,*  EGIN CANAL
13050525I,QC,CH,*,*
13050530D,QJ,GJ,*,*  ST ANTHONY UNION FEEDER CANAL
13050530I,QC,CH,*,*
13050535D,QJ,GJ,*,*  INDEPENDENT CANAL
13050535I,QC,CH,*,*
13055000F,QD,GD,*,*  TETON RIVER NR ST ANTHONY
13056500F,QD,GD,*,*  HENRY'S FORK NR REXBURG
13057025D,QJ,GJ,*,*  BUTTE AND MARKET LAKE
13057025I,QC,CH,*,*
13057125D,QJ,GJ,*,*  OSGOOD CANAL
13057125I,QC,CH,*,*
13057132F,Q,*,*,*  GREAT WESTERN CANAL SPILLBACK
13057135D,QJ,GJ,*,*  GREAT WESTERN CANAL
13057135I,QC,CH,*,*
13057145D,QJ,GJ,*,*  IDAHO CANAL
13057145I,QC,CH,*,*
13057155F,QD,GD,*,*  SNAKE RIVER NR IDAHO FALLS
13057250D,QJ,GJ,*,*  PORTER CANAL
13057250I,QC,CH,*,*
13057940F,QD,GD,*,*  WILLOW CREEK BLW TEX CREEK NR RIRIE
13057950R,AF,FB,*,*  RIRIE RESERVOIR NR RIRIE
13058000F,QD,GD,*,*  WILLOW CREEK NR RIRIE
13058510D,QD,GD,*,*  SAND CREEK NR UCON
13058510I,Q,GH,*,*
13058520F,QD,GD,*,*  WILLOW CREEK FLOODWAY NR UCON
13058530D,QJ,GJ,*,*  WILLOW CREEK BELOW FLOODWAY CHANNEL NR UCON
13059505D,QJ,GJ,*,*  WOODVILLE CANAL
13059505I,QC,CH,*,*
13059525D,QJ,GJ,*,*  SNAKE RIVER VALLEY CANAL
13059525I,QC,CH,*,*
13060000F,QD,GD,*,*  SNAKE RIVER NR SHELLEY
13060500D,QJ,GJ,*,*  RESERVATION CANAL
13060500I,QC,CH,*,*
13061430D,QJ,GJ,*,*  BLACKFOOT CANAL
13061430I,QC,CH,*,*
13061520D,QJ,GJ,*,*  NEW LAVA SIDE CANAL
13061520I,QC,CH,*,*
13061525D,QJ,GJ,*,*  PEOPLES CANAL
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13061525I,QC,CH,*,*
13061610D,QJ,GJ,*,*  ABERDEEN CANAL
13061610I,QC,CH,*,*
13061650D,QJ,GJ,*,*  CORBETT CANAL
13061650I,QC,CH,*,*
13061705D,QJ,GJ,*,*  RIVERSIDE CANAL
13061705I,QC,CH,*,*
13061995D,QJ,GJ,*,*  DANSKIN CANAL
13061995I,QC,CH,*,*
13062500F,QD,GD,*,*  SNAKE RIVER AT BLACKFOOT
13062506D,QJ,GJ,*,*  WATSON CANAL
13062506I,QC,CH,*,*
13069500F,QD,GD,*,*  SNAKE RIVER NR BLACKFOOT
13075500F,QD,GD,*,*  PORTNEUF RIVER AT POCATELLO
13075983F,QD,GD,*,*  SPRING CREEK AT SHEEPSKIN ROAD NR FORT HALL
13076400D,QJ,QP,*,*  MICHAUD CANAL AT AMERICAN FALLS
13076400I,QC,QP,*,*
13076500R,AF,FB,ET,PP  AMERICAN FALLS RESERVOIR AT AMERICAN FALLS
13077000F,QD,GD,*,*  SNAKE RIVER AT NEELEY
13080000D,QJ,GJ,*,*  NORTHSIDE MINIDOKA CANAL NR MINIDOKA
13080000I,QC,CH,*,*
13080500D,QJ,GJ,*,*  SOUTHSIDE MINIDOKA CANAL NR MINIDOKA
13080500I,QC,CH,*,*
13081000R,AF,FB,*,*  LAKE WALCOTT NR MINIDOKA
13081500F,QD,GD,*,*  SNAKE RIVER NR MINIDOKA
13085500D,QJ,QP,*,*  MINIDOKA NS PUMP CANAL NR BURLEY
13085500I,QC,QP,*,*
13085800D,QJ,GJ,*,*  P.A. LATERAL NR MILNER
13085800I,QC,CH,*,*
13086000D,QJ,QP,*,*  MILNER LOWLIFT CANAL NR MILNER
13086000I,QC,QP,*,*
13086510D,QJ,GJ,*,*  A LATERAL CANAL NR MILNER
13086510I,QC,CH,*,*
13086520D,QJ,GJ,*,*  NORTHSIDE CROSSCUR CANAL NR MILNER
13086520I,QC,CH,*,*
13086530D,QJ,GJ,*,*  MILNER-GOODING CANAL NR MILNER
13086530I,QC,CH,*,*
13087000D,QJ,GJ,*,*  NORTHSIDE TWIN FALLS CANAL AT MILNER
13087000I,QC,CH,*,*
13087500D,QJ,GJ,*,*  SOUTHSIDE TWIN FALLS CANAL AT MILNER
13087500I,QC,CH,*,*
13087900R,AF,FB,*,*  LAKE MILNER AT MILNER
13088000F,QD,GD,*,*  SNAKE RIVER AT MILNER
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WMS: SINGT

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G JCK /AF,FB "13010500R"  JACKSON LAKE NR MORAN
G JCK /QD,GD "13011000F"  SNAKE RIVER NR MORAN
G PAL /AF,FB "13032450R"  PALISADES RESERVOIR NR IRWIN
G PALI /QD,GD "13032500F"  SNAKE RIVER NR IRWIN
CLEAR
G HEN /AF,FB "13039000R"  HENRY'S LAKE RESERVOIR
G HENI /QD,GD "13039500F"  HENRY'S FORK NR LAKE
G ISL /AF,FB "13042000R"  ISLAND PARK RESERVOIR NR ISLAND PARK
G ISLI /QD,GD "13042500F"  HENRY'S FORK NR ISLAND PARK
CLEAR
G GRS /AF,FB "13046500R"  GRASSY LAKE RESERVOIR
G GRS /QD "13046510F"  GRASSY LAKE OUTFLOW
G RIR /AF,FB "13057950R"  RIRIE RESERVOIR NR RIRIE
G RIRI /QD,GD "13058000F"  WILLOW CREEK NR RIRIE
CLEAR
G AMF /AF,FB,ET,PP "13076500R" AMERICAN FALLS RESERVOIR AT AMERICAN FALLS
G AMF /QD,GD "13077000F"  SNAKE RIVER AT NEELEY
G MIN /AF,FB "13081000R"  LAKE WALCOTT NR MINIDOKA
G MINI /QD,GD "13081500F"  SNAKE RIVER NR MINIIDOKA
G MIL /AF,FB "13087900R"  LAKE MILNER AT MILNER
CLEAR
G MILI /QD,GD "13088000F"  SNAKE RIVER AT MILNER
G ALPY /QD,GD "13022500F"  SNAKE RIVER ABV RESERVOIR NR ALPINE
G GREY /QD,GD "13023000F"  GREYS RIVER ABV RESERVOIR NR ALPINE
G SALY /QD,GD "13027500F"  SALT RIVER ABV RESERVOIR NR ALPINE
G HEII /QD,GD "13037500F"  SNAKE RIVER NR HEISE
G ELCI /QJ,GJ "13037977F"  EAGLE ROCK DUMP
CLEAR
G DRYI /QD,GD "13038000F"  DRY BED NR RIRIE
G LORI /QD,GD "13038500F"  SNAKE RIVER AT LORENZO
G HFAI /QD,GD "13046023F"  HENRY'S FORK NR ASHTON
G FALI /QD,GD "13047500F"  FALLS RIVER NR SQUIRREL
G CHEI /QD,GD "13049500F"  FALLS RIVER NR CHESTER
G ANTI /QD,GD "13050500F"  HENRY'S FORK AT ST ANTHONY
CLEAR
G TEAI /QD,GD "13055000F"  TETON RIVER NR ST ANTHONY
G REXI /QD,GD "13056500F"  HENRY'S FORK NR REXBURG
G WTXI /QD,GD "13057940F"  WILLOW CREEK BLW TEX CREEK NR RIRIE
G WIFI /QD,GD "13058510D"  SAND CREEK NR UCON
G WILI /QD,GD "13058520F"  WILLOW CREEK FLOODWAY NR UCON
G WILI /QJ,GJ "13058530D"  WILLOW CREEK BLW FLOODWAY NR UCON
CLEAR
G SIFI /QD,GD "13057155F"  SNAKE RIVER NR IDAHO FALLS
G SHYI /QD,GD "13060000F"  SNAKE RIVER NR SHELLEY
G SNAI /QD,GD "13062500F"  SNAKE RIVER AT BLACKFOOT
G BFTI /QD,GD "13069500F"  SNAKE RIVER NR BLACKFOOT
G PIHI /QD,GD "13075500F" PORTNEUF RIVER AT POCATELLO
G SPSI /QD,GD "13075983F" SPRING CREEK AT SHEEPSKIN RD NR FORT HALL
CLEAR
G NMCI /QJ,GJ "13080000D"  NORTHSIDE MINIDOKA CANAL NR MINIDOKA
G SMCI /QJ,GJ "13080500D"  SOUTHSIDE MINIDOKA CANAL NR MINIDOKA
G TCNI /QJ,GJ "13087000D"  NORTHSIDE TWIN FALLS CANAL AT MILNER
G TCSI /QJ,GJ "13087500D"  SOUTHSIDE TWIN FALLS CANAL AT MILNER
CLEAR
G MCHI /QJ,QP "13076400D"  MICHAUD CANAL AT AMERICAN FALLS
G MPCI /QJ,QP "13085500D"  MINIDOKA NS PUMP CANAL NR BURLEY
G LPPI /QJ,GJ "13085800D"  P.A. LATERAL NR MILNER
G MLCI /QJ,QP "13086000D"  MILNER LOWLIFT CANAL NR MILNER
G MGAI /QJ,GJ "13086510D"  A LATERAL CANAL NR MILNER
G MXCI /QJ,GJ "13086520D"  NORTHSIDE CROSSCUT CANAL NR MILNER
CLEAR
G MIII /QJ,GJ "13086530D"  MILNER-GOODING CANAL NR MILNER
G ANCI /QJ,GJ "13037505D"  ANDERSON CANAL
G ERCI /QJ,GJ "13037975D"  EAGLE ROCK CANAL
G CXCI /QJ,GJ "13049560D"  CROSSCUT CANAL
G CRCI /QJ,GJ "13050018F"  CROSSCUT CANAL AT END
G FRCI /QJ,GJ "13048560D"  FALL RIVER CANAL
CLEAR
G AUCI /QJ,GJ "13049725D"  ST ANTHONY UNION CANAL
G EGCI /QJ,GJ "13050525D"  EGIN CANAL
G AFCI /QJ,GJ "13050530D"  ST ANTHONY UNION FEEDER CANAL
G INCI /QJ,GJ "13050535D"  INDEPENDENT CANAL
G IDCI /QJ,GJ "13057145D"  IDAHO CANAL
G GWSI /Q "13057132F"  GREAT WESTERN CANAL SPILLBACK NR IDAHO FALLS
G GWCI /QJ,GJ "13057135D"  GREAT WESTERN CANAL
CLEAR
G POCI /QJ,GJ "13057250D"  PORTER CANAL
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G WVCI /QJ,GJ "13059505D"  WOODVILLE CANAL
G VLCI /QJ,GJ "13059525D"  SNAKE RIVER VALLEY CANAL
G BFCI /QJ,GJ "13061430D"  BLACKFOOT CANAL
G NLCI /QJ,GJ "13061520D"  NEW LAVA SIDE CANAL
G PECI /QJ,GJ "13061525D"  PEOPLES CANAL
CLEAR
G ASCI /QJ,GJ "13061610D"  ABERDEEN CANAL
G CBCI /QJ,GJ "13061650D"  CORBETT CANAL
G RICI /QJ,GJ "13061705D"  RIVERSIDE CANAL
G DNCI /QJ,GJ "13061995D"  DANSKIN CANAL
CLEAR
G FFCI /QJ,GJ "13037980D"  FARMERS FRIEND CANAL NR HEISE
G CECI /QJ,GJ "13038115D"  CLARK AND EDWARDS CANAL
G ISCI /QJ,GJ "13038210D"  ISLAND CANAL
G BMCI /QJ,GJ "13057025D"  BUTTE AND MARKET LAKE CANAL
G OSCI /QJ,GJ "13057125D"  OSGOOD CANAL
CLEAR
G RECI /QJ,GJ "13060500D"  RESERVATION CANAL
G WACI /QJ,GJ "13062506D"  WATSON CANAL
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C     ****************************************************************
C
C                          PROGRAM SNKSHTRPT
C
C        THIS PROGRAM CREATES AN ABBREVIATED WEEKLY REPORT FOR CANAL
C              MANAGERS IN WATER DISTRICT 01 USING DATA FROM
C                  THE ALLOCATIONS FILE (SNKWRA.ALC)
C
C     ****************************************************************
C
C
      INTEGER STATION_NUM
      DIMENSION JD(12),DIV(325),RD(325),STOR(325),SRM(325),PRI1(325)
      DIMENSION OM(12),IDN(125),DIVNM(125),ISTAT_NUM(325),PRTY2(7)
      DIMENSION DIV2(125),RD2(125),STOR2(125),SRM2(125),IFLW(7)
      DIMENSION FLWNM(7),PRI2(325),PRI3(325),PRTY1(7),PRTY3(7),LAG(125)
      DIMENSION LDAY(136),OMON(125)
      CHARACTER RUNDATE*9,DIVNM*20,FLWNM*20,PTEMP1*6,PRI1*6
      CHARACTER PTEMP2*2,PTEMP3*2,PRI2*2,PRI3*2,PRTY1*6,PRTY2*2
      CHARACTER PRTY3*2
      DATA JD/31,28,31,30,31,30,31,31,30,31,30,31/
      DATA OM/'JAN','FEB','MAR','APR','MAY','JUN','JUL',
     1 'AUG','SEP','OCT','NOV','DEC'/
      OPEN (UNIT=1,FILE='SNKSHTFLW.TTL',STATUS='OLD')
      OPEN (UNIT=2,FILE='SNKSHTDIV.TTL',STATUS='OLD')
      OPEN (UNIT=3,FILE='SNKWRA.ALC',STATUS='OLD')
      OPEN (UNIT=7,FILE='SNKSHTRPT.OUT',STATUS='NEW')
      ND=125
      NR=7
C
      PRINT 100
  100 FORMAT (' ')
      PRINT *,' ******************************************************'
      PRINT *,' '
      PRINT *,'  THIS PROCEDURE CREATES AN ABBREVIATED WEEKLY REPORT '
      PRINT *,'  FOR WATER DISTRICT 01.  ANSWER THE FOLLOWING '
      PRINT *,'  QUESTIONS USING Y FOR YES, N FOR NO, AND C IF YOU '
      PRINT *,'  WISH TO CANCEL EXECUTION.'
      PRINT *,' '
      PRINT *,' ******************************************************'
      PRINT 100
C
      PRINT *,' ******************************************************'
      PRINT *,' '
      PRINT *,' DO YOU WISH TO CREATE AN ABBREVIATED WEEKLY'
      PRINT *,' REPORT FOR CANAL MANAGERS (Y/N/C)? '
      PRINT *,' '
      PRINT *,' ******************************************************'
      PRINT 1
    1 FORMAT('          ENTER CHOICE:'$)
      ACCEPT 2, ANS
    2 FORMAT(A1)
      IF(ANS.NE.'Y') GO TO 500
      PRINT *,' '
   10 PRINT *,'  ENTER THE MONTH, DAY, AND YEAR FOR THE  '
      PRINT *,'       DAY YOU WISH TO OBTAIN DATA.'
      PRINT *,'         FOR EXAMPLE : 07-20-1997  '
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      PRINT *,' '
      PRINT *,'                ??????????  '
      PRINT 3
    3 FORMAT('+                '$)
      ACCEPT 4, IM,ID,IY
    4 FORMAT(I2,1X,I2,1X,I4)
      PRINT 5, IM,ID,IY
    5 FORMAT (//1X,' THE DAY IS ',I2,'-',I2,'-',I4/
     !   2X,'IS THIS CORRECT?  ANSWER Y/N/C.  ')
      PRINT 6
    6 FORMAT(28X,' '$)
      ACCEPT 2,IANSWR
      IF (IANSWR.EQ.'C') GO TO 500
      IF (IANSWR.EQ.'N') GO TO 10
C
C***** CONVERT THE SELECTED DATE TO SEVEN DIGIT DATE YYYYDDD,
C***** WHERE YYYY IS THE YEAR AND DDD IS THE NUMERICAL DAY OF THE YEAR.
C
      FEB=IY/4.0
      IFEB=FEB
      FEB=FEB-IFEB
      NDY=0
      DO 8 I=1,IM
      IF(I.EQ.IM) GO TO 35
      IF(I.EQ.2.AND.FEB.LT.0.001) JD(2)=29
    8 NDY=NDY+JD(I)
   11 JD(2)=28
   35 CONTINUE
      NDY=NDY+ID
      IYD=(IY*1000)+NDY
      CONTINUE
C
C***** INITIALIZE VARIOUS DIVERSION VALUES TO ZERO
C
      DO 50 I=1,ND
      DIV2(I)=0
      RD2(I)=0
      STOR2(I)=0
   50 SRM2(I)=0
C
C***** READ STATION TITLES FROM SNKSHTDIV.TTL
C***** AND SNKSHTFLW.TTL FILES
C
      READ(1,28,END=12) (IFLW(K),FLWNM(K),K=1,NR)
   28 FORMAT (I8,A21)
   12 CONTINUE
      READ(2,13,END=60) (IDN(L),LAG(L),DIVNM(L),L=1,ND)
   13 FORMAT (I8,I2,A21)
   60 PRINT*,'************************************'
      PRINT*,'                                   '
      PRINT*,'       STATION NAMES READ IN       '
      PRINT*,'                                   '
      PRINT*,'************************************'
C
C***** READ THE ALLOCATIONS FILE AND STORE
C***** FOR RECORDS WITH THE APPROPRIATE DATE
C
```

```
      I=0
   14 READ(3,15,END=65) STATION_NUM,TYPE,IDATE,DTEMP,RTEMP,
     1STEMP,SRTMP,PTEMP1,PTEMP2,PTEMP3
   15 FORMAT(I8,A1,I7,4F10.1,A6,A2,A2)
      IF(IDATE.NE.IYD) GO TO 14
C
C***** MATCH STATION NUMBER WITH THOSE
C***** READ IN FROM THE TITLE FILE
C
      I=I+1
      ISTAT_NUM(I)=STATION_NUM
      DIV(I)=DTEMP
      RD(I)=RTEMP
      STOR(I)=STEMP
      SRM(I)=SRTMP
      PRI1(I)=PTEMP1
      PRI2(I)=PTEMP2
      PRI3(I)=PTEMP3
      GO TO 14
   65 CONTINUE
      NK=I
      DO 45 K=1,NR
      DO 70 I=1,NK
      IF(ISTAT_NUM(I).EQ.IFLW(K)) THEN
       PRTY1(K)=PRI1(I)
       PRTY2(K)=PRI2(I)
       PRTY3(K)=PRI3(I)
      END IF
   70 CONTINUE
   45 CONTINUE
      NK=I
      DO 16 L=1,ND
      DO 30 I=1,NK
      IF(ISTAT_NUM(I).EQ.IDN(L)) THEN
       DIV2(L)=DIV(I)
       RD2(L)=RD(I)
       STOR2(L)=STOR(I)
       SRM2(L)=SRM(I)
       GO TO 16
      END IF
   30 CONTINUE
       DIV2(L)=0.0
       RD2(L)=0.0
       STOR2(L)=0.0
       SRM2(L)=0.0
   16 CONTINUE
      DO 26 I=1,ND
      IL=LAG(I)
      LYEAR=IY
      LDAY(I)=NDY+IL
      FEB=LYEAR/4.0
      IFEB=FEB
      FEB=FEB-IFEB
      JD(2)=28
      IF(FEB.LT.0.001) JD(2)=29
      MN=0
   27 MN=MN+1
```

```
      IF(MN.GT.12) GO TO 26
      LDAY(I)=LDAY(I)-JD(MN)
      IF(LDAY(I).GT.0) GO TO 27
      LDAY(I)=LDAY(I)+JD(MN)
      OMON(I)=OM(MN)
   26 CONTINUE
C
C***** DIVIDE DIVERSIONS INTO TWO EQUAL PARTS
C       FOR COLUMNS ON THE REPORT.
      AKE=ND/2.
      KE=AKE
      R=AKE-KE
      IF(R.GT.0.1) KE=KE+1
C
C***** BEGIN PRINTOUT
C
      CALL DATE (RUNDATE)
      WRITE (7,17) RUNDATE
   17 FORMAT(//43X,'WATER DISTRICT 01 - WEEKLY WATER REPORT',
     1 31X,A9////)
      WRITE (7,21)
   21 FORMAT(21X,'DIVERSION DATA PRIORITY DATES:',20X,'PROJECTED
     2 PRIORITY DATES FOR'//)
      DO 75 K=1,NR
      WRITE (7,22) FLWNM(K),PRTY2(K),PRTY3(K),PRTY1(K),FLWNM(K)
   22 FORMAT(18X,A21,5X,A2,2X,A2,A6,19X,A21)
   75 CONTINUE
      WRITE (7,23)
   23 FORMAT(//,1X,'COMMENTS:'//)
      WRITE (7,18)
   18 FORMAT(////////55X,'DIVERSION DATA'/)
      WRITE (7,19)
   19 FORMAT(1X,'ACTUAL',28X,'CFS',5X,'CFS',5X,'AF',6X,'AF',6X,'ACTUAL',
     126X,'CFS',5X,'CFS',6X,'AF',7X,'AF')
      WRITE (7,20)
   20 FORMAT(2X,'DATE',5X,'DIVERSION',14X,'DIVN',4X,'STOR',4X,
     3'USED',4X,'RMNG',6X,'DATE',4X,'DIVERSION',14X,'DIVN',
     44X,'STOR',4X,'USED',5X,'RMNG'//)
      DO 55 L=1,KE
      LKE=KE+L
      IF(LKE.GT.ND) GO TO 80
      WRITE (7,25) OMON(L),LDAY(L),DIVNM(L),DIV2(L),RD2(L),STOR2(L),
     1SRM2(L),OMON(LKE),LDAY(LKE),DIVNM(LKE),DIV2(LKE),RD2(LKE),
     2STOR2(LKE),SRM2(LKE)
   25 FORMAT(1X,A3,1X,I2,1X,A21,4F8.0,6X,A3,1X,I2,1X,A20,3F8.0,1F9.0)
      GO TO 55
   80 WRITE (7,85) OMON(L),LDAY(L),DIVNM(L),DIV2(L),RD2(L),STOR2(L),
     1SRM2(L)
   85 FORMAT(1X,A3,1X,I2,1X,A21,4F8.0)
   55 CONTINUE
      WRITE (7,7)
    7 FORMAT(//,1X'FOOTNOTES:  STORAGE DIVERSION COMBINED WITH (1)
     1 ANDERSON, (2) RIGBY, (3) DILTS, (4) W. LABELLE & L.I.,
```

```
      2 (5) BRAMWELL')
       WRITE (7,24)
   24 FORMAT('(6) FALLS R, (7) ST ANTHONY U, (8) TETON IRR,
      1 (9) GREAT WESTERN, (10) MINIDOKA NORTHSIDE AND (11) NSIDE
      2 TWIN FALLS')
C      WRITE (7,29) AF(27),AF(29),AF(37),GMIL,AMIL,GT(5)
C  29 FORMAT(/,2X, 18H XCUT AT TETON CFS,F6.0,2X,17HEAGLE RK DUMP CFS,
C     1F6.0,2X,11HDRY BED CFS,F6.0,2X,20HMID RETURN: CFS GAIN,F6.0,2X,
C     210HCFS CREDIT,F5.0,2X,8HAF TOTAL,F9.1)
       WRITE (7,9)
    9 FORMAT(/,2X,'* TOTAL DIVERSION AND STORAGE USE DOES NOT INCLUDE
      1 ADDITIONAL PUMP DIVERSIONS (NOT SHOWN) ADDED AT THE END OF
      2 THE YEAR')
   40 CONTINUE
       PRINT*,'****************************************'
       PRINT*,' '
       PRINT*,'  ABBREVIATED WEEKLY REPORT COMPLETE'
       PRINT*,' '
       PRINT*,'  OUTPUT IS IN THE LATEST VERSION OF'
       PRINT*,' '
       PRINT*,'              SNKSHTRPT.OUT'
       PRINT*,' '
       PRINT*,'****************************************'
  500 STOP
       END
```

PROGRAM SECTIONS

	Name	Bytes	Attributes
0	$CODE	2889	PIC CON REL LCL SHR EXE RD NOWRT QUAD
1	$PDATA	1712	PIC CON REL LCL SHR NOEXE RD NOWRT QUAD
2	$LOCAL	17268	PIC CON REL LCL NOSHR NOEXE RD WRT QUAD
	Total Space Allocated	21869	

ENTRY POINTS

Address	Type	Name	References
0-00000000		SNKSHTRPT$MAIN	

VARIABLES

Address	Type	Name	Attributes	References					
**	R*4	AKE		181=	182	183			
2-0000410C	R*4	ANS		51=	53				
2-00004140	R*4	DTEMP		116=	126				
**	R*4	FEB		76=	77	78(2)=	82	165=	166
				167(2)=	169				
**	I*4	I		80=	81	82	83	92=	93
				94	95	96	115=	124(2)=	125
				126	127	128	129	130	131
				132	135	137=	138	139	140
				141	145	147=	148	149	150
				151	152	161=	162	164	173(2)
				174	175(2)	176			
2-0000411C	I*4	IANSWR		69=	70	71			
2-00004114	I*4	ID		62=	64	86			
2-0000413C	I*4	IDATE		116=	119				
**	I*4	IFEB		77=	78	166=	167		
**	I*4	IL		162=	164				
2-00004110	I*4	IM		62=	64	80	81		
2-00004118	I*4	IY		62=	64	76	87	163	
**	I*4	IYD		87=	119				
2-00004128	I*4	K		101(3)=	136=	138	139	140	141
				195=	196(5)				
**	I*4	KE		182=	183	184(2)=	210	211	
2-00004130	I*4	L		104(4)=	146=	148	149	150	151
				152	156	157	158	159	210=
				211	213(7)	218(7)			
**	I*4	LKE		211=	212	213(7)			
**	I*4	LYEAR		163=	165				
**	I*4	MN		170=	171(2)=	172	173	175	176
**	I*4	ND		28=	92	104	146	161	181
				212					

**	I*4	NDY	79=	83(2)=	86(2)=	87	164	
**	I*4	NK	135=	137	145=	147		
**	I*4	NR	29=	101	136	195		
2-000040FD	CHAR	PTEMP1	18	116=	130			
2-00004103	CHAR	PTEMP2	19	116=	131			
2-00004105	CHAR	PTEMP3	19	116=	132			
**	R*4	R	183=	184				
2-00004144	R*4	RTEMP	116=	127				
2-000040F4	CHAR	RUNDATE	18	188A	189			
2-0000414C	R*4	SRTMP	116=	129				
2-00004108	I*4	STATION_NUM	12	116=	125			
2-00004148	R*4	STEMP	116=	128				
2-00004138	R*4	TYPE	116=					

ARRAYS

Address	Type	Name	Attributes	Bytes	Dimensions	References				
2-00000030	R*4	DIV		1300	(325)	13	126=	149		
2-00001BB8	R*4	DIV2		500	(125)	15	93=	149=	156=	213(2)
						218				
2-0000314A	CHAR	DIVNM		2500	(125)	14	18	104=	213(2)	218
2-00003B1C	CHAR	FLWNM		140	(7)	16	18	101=	196(2)	
2-000014B0	I*4	IDN		500	(125)	14	104=	148		
2-00002388	I*4	IFLW		28	(7)	15	101=	138		
2-000016A4	I*4	ISTAT_NUM		1300	(325)	14	125=	138	148	
2-00000000	I*4	JD		48	(12)	13	21D	82=	83	84=
						168=	169=	173	175	
2-000023A4	I*4	LAG		500	(125)	16	104=	162		
2-00002598	I*4	LDAY		544	(136)	17	164=	173(2)=	174	175(2)=
						213(2)	218			
2-00001480	R*4	OM		48	(12)	14	22D	176		
2-000027B8	R*4	OMON		500	(125)	17	176=	213(2)	218	
2-000029AC	CHAR	PRI1		1950	(325)	13	18	130=	139	
2-00003BA8	CHAR	PRI2		650	(325)	16	19	131=	140	
2-00003E32	CHAR	PRI3		650	(325)	16	19	132=	141	
2-000040BC	CHAR	PRTY1		42	(7)	16	19	139=	196	
2-00003B0E	CHAR	PRTY2		14	(7)	14	19	140=	196	
2-000040E6	CHAR	PRTY3		14	(7)	16	20	141=	196	
2-00000544	R*4	RD		1300	(325)	13	127=	150		
2-00001DAC	R*4	RD2		500	(125)	15	94=	150=	157=	213(2)
						218				
2-00000F6C	R*4	SRM		1300	(325)	13	129=	152		
2-00002194	R*4	SRM2		500	(125)	15	96=	152=	159=	213(2)
						218				
2-00000A58	R*4	STOR		1300	(325)	13	128=	151		
2-00001FA0	R*4	STOR2		500	(125)	15	95=	151=	158=	213(2)
						218				

LABELS

Address	Label	References		
1-00000004	1'	49	50#	
1-0000001E	2'	51	52#	69
1-00000021	3'	60	61#	
1-00000036	4'	62	63#	
1-00000041	5'	64	65#	
1-00000086	6'	67	68#	
1-00000255	7'	222	223#	
**	8	80	83#	
1-00000344	9'	234	235#	
0-00000250	10	55#	71	
**	11	84#		
0-00000490	12	101	103#	
1-00000092	13'	104	105#	
0-00000580	14	116#	119	133
1-00000099	15'	116	118#	
0-000006F8	16	146	153	160#
1-000000AB	17'	189	190#	
1-0000014B	18'	201	202#	
1-00000167	19'	203	204#	
1-000001B0	20'	206	207#	
1-000000E1	21'	192	193#	
1-00000126	22'	196	197#	
1-00000139	23'	199	200#	
1-000002CF	24'	226	227#	
1-0000021D	25'	213	216#	
0-00000747	26	161	172	177#
0-00000728	27	171#	174	
1-0000008D	28'	101	102#	
**	30	147	155#	
0-000003FD	35	81	85#	
**	40	238#		
**	45	136	144#	
**	50	92	96#	
0-000009FE	55	210	217	221#
0-000004EF	60	104	106#	
0-00000650	65	116	134#	
**	70	137	143#	
**	75	195	198#	
0-00000984	80	212	218#	
1-00000243	85'	218	220#	
1-00000000	100'	31	32#	41
0-00000B42	500	53	70	248#

FUNCTIONS AND SUBROUTINES REFERENCED

Type	Name	References
	DATE	188

```
+-----------------------------------------+
|          KEY TO REFERENCE FLAGS         |
|   =   - Value Modified                  |
|   #   - Defining Reference              |
|   A   - Actual Argument, possibly modified |
|   D   - Data Initialization             |
|  (n)  - Number of occurrences on line   |
+-----------------------------------------+
```

COMMAND QUALIFIERS

```
FORTRAN/LIST/CROSS_REFERENCE SNKSHTRPT

/ASSUME=(ACCURACY_SENSITIVE,NODUMMY_ALIASES,NOSOURCE_INCLUDE)
/BLAS=(INLINE,MAPPED)
/CHECK=(NOALIGNMENT,NOASSERTIONS,NOBOUNDS,OVERFLOW,NOUNDERFLOW)
/DEBUG=(PARAMETERS=USED,NOSYMBOLS,TRACEBACK)
/DESIGN=(NOCOMMENTS,NOPLACEHOLDERS)
/DIRECTIVES=(DEPENDENCE)
/MATH_LIBRARY=(ACCURATE,NOV5)
/PARALLEL=(NOAUTOMATIC,NOMANUAL)
/SHOW=(NODATA_DEPENDENCES,NODICTIONARY,NOINCLUDE,NOLOOPS,MAP,NOPREPROCESSOR,SINGLE)
/STANDARD=(NOMIA,NOSEMANTIC,NOSOURCE_FORM,NOSYNTAX)
/WARNINGS=(NOALIGNMENT,NOAlpha_AXP,NODECLARATIONS,GENERAL,INFORMATIONAL,NOINLINE,NOTRUNCATED_SOURCE,
           NOULTRIX,UNCALLED,UNINITIALIZED,UNUSED,USAGE,NOVAXELN)
/CONVERT=NATIVE  /CROSS_REFERENCE  /NOD_LINES  /ERROR_LIMIT=30  /NOEXTEND_SOURCE
/F77  /NOG_FLOATING  /I4  /NOMACHINE_CODE  /OPTIMIZE=LEVEL=3
/NORECURSIVE  /NOSYNCHRONOUS_EXCEPTIONS  /TERMINAL=NOSTATISTICS  /NOVECTOR
/NOANALYSIS_DATA
/NODIAGNOSTICS
/LIST=HYDRO:[SHOWE]SNKSHTRPT.LIS;27
/OBJECT=HYDRO:[SHOWE]SNKSHTRPT.OBJ;1
```

COMPILER: DEC Fortran V6.3-141

COMPILATION STATISTICS

```
Run Time:          0.70 seconds
Elapsed Time:      1.59 seconds
Page Faults:       1401
Dynamic Memory:    1152 pages
```

```
      TYPE *, '    MUST ALSO BE RESET TO ZERO RATHER THAN READ    '
      TYPE *, '    FROM ALLOCATIONS FILE.  THERE MAY ALSO BE OTHER'
      TYPE *, '    INSTANCES WHEN YOU WANT TO RESET THESE VALUES  '
      TYPE *, '    TO ZERO.                                       '
      TYPE *, '  '
      PRINT 399
  399 FORMAT(/'    DO YOU WISH TO ZERO WATER RIGHT VOLUME TOTALS? Y/N
     1 '$)
      ACCEPT 500,INI
      IF(INI.EQ.'Y') IBGV=1
      PRINT 398
  398 FORMAT(/'    DO YOU WISH TO ZERO EXCHANGE PUMP TOTALS? Y/N
     1 '$)
      ACCEPT 500,INI
      IF(INI.EQ.'Y') IBGE=1
  499 CONTINUE
  491 PRINT 495
  495 FORMAT(/'    DO YOU WISH TO RUN PROJECTED DAYS? Y/N '$)
      ACCEPT 500,PRO
      IF(PRO.EQ.'Y') THEN
                       PRINT 494
  494                  FORMAT(/'    PROJECT HOW MANY DAYS? '$)
                       ACCEPT 493, NDF
  493                  FORMAT(I2)
                       IF(NDF.GT.12) THEN
                                     PRINT 492, NDF
  492                                FORMAT(/I5,' - TOO MANY DAYS')
                                     GO TO 491
                                     END IF
                       END IF
C
C----SECTION  3-2, PART 1
C****READ REPORT OUTPUT UNIT NUMBERS, INITIALIZE PRINTOUT UNIT
C
      READ(1,7)(KOUT(L),L=1,4)
      OUT=KOUT(1)
      OUT2=KOUT(2)
C
C----SECTION  3-2, PART 2
C**** IDS  = REACH NUMBER DIRECTLY DOWNSTREAM FROM NRTH REACH
C**** IORD = REACH NUMBERS IN ORDER OF OPERATION
C**** IRS  = RESERVOIR NUMBER IN LTH REACH
C**** IDA  = NUMBER OF DAYS FOR WHICH GAINS ARE AVERAGED FOR LTH REACH
C**** ICF = 1 IF REACH OUTFLOW IS NOT A MEASURED VALUE, BUT INSTEAD
C**** COMPUTED BY INFLOW MINUS DIVERSIONS.  IF ICF = 2 THE REACH IS AN
C**** OFFSTREAM CHANNEL, SUCH AS CROSSCUT CANAL.  VALUES ARE IN ORDER
C**** OF REACHES.
C
      READ(1,7)(IDS(L),L=1,NR)
```

```
      READ(1,7)(IORD(L),L=1,NR)
      READ(1,7)(IRS(L),L=1,NR)
      READ(1,7)(IDA(L),L=1,NR)
      READ(1,7)(ICF(L),L=1,NR)
    7 FORMAT(16I5)
C
C----SECTION  3-2, PART 3
C**** KNRC = THE ORDER IN WHICH REACH VALUES ARE READ FROM THE HISTORY
C****        FILE
C
      READ(1,7) (KNRC(L),L=1,NRC)
C
C----SECTION  3-2, PART 4
C****READ TIME LAGS (IN DAYS FROM REFERENCE REACH) FOR ALL REACHES,
C****DIVERSIONS AND RESERVOIRS.
C
      READ(1,7) (LAG(L),L=1,NR)
      READ(1,7) (LGD(L),L=1,NR)
      READ(1,7) (LGG(L),L=1,NP)
C
C----SECTION  3-2, PART 5
C****READ REACH NAMES (RCHNM) AND RESERVOIR NAMES (RESNM).
C
      READ(1,9) ((RCHNM(L,J),J=1,6),L=1,NR)
    9 FORMAT(18A4,8X)
      READ(1,17)((RESNM(L,J),J=1,4),L=1,NP)
   17 FORMAT(20A4)
C
C----SECTION  3-2, PART 6
C****READ RESERVOIR RIGHT RESERVOIR NUMBERS (MR) AND STORAGE
C****VOLUMES OF RIGHTS IN ACRE-FEET (RST).
C
      READ(3,182) (MR(I),RST(I),I=1,NSR)
  182 FORMAT(17X,I5,F10.0)
      PRINT *,' '
      PRINT *,' REACH INDICATORS READ IN '
      PRINT *,' '
C
C----SECTION  3-3, PART 1
C****INITIALIZE VARIOUS DIVERSION VALUES TO ZERO.
C
      DO 59 L=1,ND
      STOR(L)=0.0
      TDIV(L)=0.0
   59 SRM(L)=0.0
C
C----SECTION  3-3, PART 2
C****READ IDENTIFICATION NUMBERS, REACH NUMBERS, DIVERSION
C****TYPE INDICATOR (JC), & NAMES OF DIVERSIONS.
C****THE VARIABLE JC IS TNE INDICATOR TO DENOTE INSTREAM USE SUCH AS
C****POWER OR MINIMUM FLOW (NEGATIVE NUMBER), CANAL OR PUMP DIVERSION
C****(ZERO), OR RESERVOIR (POSITIVE NUMBER).  JC IS NORMALLY ENTERED
C****VIA JR (SEE SECTION 6-1, PART 4) ON THE LIST OF RIGHTS, BUT IF A
C****DIVERSION HAS NO RIGHT, IT CAN BE ENTERED DIRECTLY HERE.
C
      READ(5,89) (IDN(L),IRCH(L),JC(L),(DIVNM(L,J),J=1,4),L=1,ND)
   89 FORMAT(2I10,I3,2X,4A4)
```

```
      PRINT *,' '
      PRINT *,' DIVERSION INDICATORS READ IN '
      PRINT *,' '
C
C----SECTION  3-3, PART 3
C****IF INITIAL RUN IS BEING MADE (IBG=1) VALUES OF ACCUMULATED EVAP-
C****ORATION , GRAND TOTALS, RESERVOIR STORAGE RIGHT ACCOUNTS AND/OR
C****DIVERSION STORAGE ACCOUNTS ARE TO BE RESET, THESE ARE READ FROM
C****FILES SNKSYS.IND (IBGS=1) AND SNKCAN.IND (IBGD=1). OTHERWISE THEY
C****ARE READ FROM THE ALLOCATIONS FILE. ALSO ZERO VALUES OF TOTAL
C****DIVERSION BY RIGHTS WITH SEASONAL VOLUME LIMITS (VRD).
C
      IF(IBGS.EQ.1) THEN
            READ(6,44) (CEV(L),L=1,NP)
   44       FORMAT(8F10.1)
            READ(6,44) (GT(L),L=1,9)
            READ(6,44) (BRST(L),L=1,NSR)
            ENDIF
   61 IF(IBGD.EQ.1) THEN
            DO 144 L=1,ND
            READ(7,95,END=144) IDC,STOR(L),SRM(L)
   95       FORMAT(I8,2F10.0)
            IF(IDC.NE.IDN(L)) THEN
                  PRINT 102, IDC
  102             FORMAT(/' DIVERSION # ',I8,' FROM STORAGE FILE SNKCAN.I'
     1            ,'ND '/ ' DOES NOT MATCH MASTER FILE LIST SNKWRA.DPL.'/
     2            ' DO YOU WISH TO STOP ACCOUNTING? Y/N '$)
                  ACCEPT 500, IANS
                  IF(IANS.EQ.'Y') GO TO 45
                  ENDIF
  144       CONTINUE
            ENDIF
      DO 156 L=1,40
  156 VRD(L)=0.0
      DO 175 L=1,30
  175 TSE(L)=0.0
C
C----SECTION  3-3, PART 4
C****READ IDENTIFICATION NUMBERS, REACH NUMBERS, & NAMES OF EXCHANGE
C****PUMPS
C
      READ(4,114) (IEN(L),IER(L),(EXCNM(L,J),J=1,4),L=1,NEP)
  114 FORMAT(2I10,5X,4A4)
      PRINT *,' '
      PRINT *,' RESERVOIR AND EXCHANGE WELL INDICATORS READ IN '
      PRINT *,' '
C
C----SECTION  4-1, PART 1A
C****INITIALIZE NM, THE NUMBER OF RIGHTS BELOW MINIDOKA; K, A PAGE
C****CONTROL COUNTER FOR PRINTOUT OF WATER RIGHTS;  AND NSVL, THE
C****NUMBER OF RIGHTS WITH A SEASONAL VOLUME LIMIT.
C
      NM=0
      K=71
      NSVL=0
C
C----SECTION  4-1, PART 1B
```

```
C****IF ILS IS POSITIVE, A LISTING OF RIGHTS BY PRIORITY WILL BE MADE.
C
      PRINT 393
  393 FORMAT(/'    DO YOU WISH TO LIST CURRENT WATER RIGHTS Y/N: '$)
      ACCEPT 500,LCR
      IF(LCR.NE.'Y') GO TO 392
      PRINT 395
  395 FORMAT(/'    DO YOU WISH TO LIST RIGHTS BY PRIORITY? Y/N: '$)
      ACCEPT 500,ILS
      PRINT 394
  394 FORMAT(/'    DO YOU WISH TO LIST RIGHTS BY CANAL? Y/N: '$)
      ACCEPT 500,LBC
      PRINT 391
  391 FORMAT(/'    DO YOU WISH TO ONLY LIST RIGHTS (NO ACCOUNTING)?
     1Y/N: '$)
      ACCEPT 500,INA
  392 CONTINUE
C
C----SECTION  4-1, PART 1C
C****INQUIRE WHETHER A FILE OF LAST ACCOUNTING DAY INFORMATION IS TO BE
C****CREATED FOR DECTALK.  IF SO, DEFINE FILES AND READ IN DIVERSION,
C****REACH OUTFLOW, AND RESERVOIR NAMES.
C
      PRINT 335
  335 FORMAT(/'    DO YOU WISH TO CREATE FILE FOR DECTALK? Y/N: '$)
      ACCEPT 500,DECTALK
      IF(DECTALK.NE.'Y') GO TO 336
      OPEN (UNIT=17,NAME='SNKWRA.TLK',TYPE='NEW',
     1CARRIAGECONTROL='LIST')
      CALL ASSIGN (18,'SNKDIV.TTL')
      CALL ASSIGN (19,'SNKDEC.TTL')
      CALL ASSIGN (20,'SNKRES.TTL')
      ISKIP=0
      DO 337 L=1,ND
  339 IF(ISKIP.EQ.0) READ(18,338,END=357) ITN,DVNAME
  338 FORMAT(I8,1X,A49)
      ISKIP=0
      IF(ITN.LT.IDN(L)) GO TO 339
      IF(ITN.EQ.IDN(L)) THEN
          DVNAM(L)=DVNAME
          GO TO 337
          END IF
      IF(JC(L).NE.0.OR.IDN(L).EQ.13049561) GO TO 346
      PRINT 344, IDN(L),(DIVNM(L,J),J=1,4)
  344 FORMAT(/' NO TITLE FROM FILE SNKDIV.TTL WAS FOUND FOR DIVERSION '
     1          ,I8,3H - ,4A4/
     2          ' DO YOU WISH TO STOP ACCOUNTING? Y/N '$)
      ACCEPT 500, IANS
      IF(IANS.EQ.'Y') GO TO 45
  346 DVNAM(L)=UNDEF
      ISKIP=1
  337 CONTINUE
  357 CONTINUE
```

```
  359 READ(19,338,END=358) ITN,FLONAME
      DO 353 L=1,NR
      IF(ITN.EQ.JRN(L)) THEN
          FLONAM(L)=FLONAME
          GO TO 359
          END IF
  353 CONTINUE
      IF(ITN.EQ.13058510.OR.ITN.EQ.13058530) GO TO 359
      PRINT 354, ITN,FLONAME
  354 FORMAT(/' NO OUTFLOW DATA FROM WAS FOUND FOR '
     1          'REACH NUMBER ',I8,3H - /1X,A49/
     2          ' DO YOU WISH TO STOP ACCOUNTING? Y/N '$)
      ACCEPT 500, IANS
      IF(IANS.EQ.'Y') GO TO 45
      GO TO 359
  358 ISKIP=0
      DO 355 L=1,NP
  360 IF(ISKIP.EQ.0) READ(20,338,END=336) ITN,RESNAME
      ISKIP=0
      IF(ITN.LT.IRESN(L)) GO TO 360
      IF(ITN.EQ.IRESN(L)) THEN
          RESNAM(L)=RESNAME
          GO TO 355
          END IF
      PRINT 356, IDN(L),(RESNM(L,J),J=1,4)
  356 FORMAT(/' NO TITLE FROM FILE SNKRES.TTL WAS FOUND FOR RESERVOIR '
     1          ,I8,3H - ,4A4/
     2          ' DO YOU WISH TO STOP ACCOUNTING? Y/N '$)
      ACCEPT 500, IANS
      IF(IANS.EQ.'Y') GO TO 45
      ISKIP=1
  355 CONTINUE
  336 CONTINUE
C
C----SECTION  4-1, PART 2
C****READ ALL RIGHTS ASSOCIATED WITH DIVERSIONS. P IS THE CFS AMOUNT AND
C****ICN IS THE CANAL/DIVERSION NUMBER OF THE RIGHT. IV INDICATES A
C****VARIABLE RIGHT, AND JR INDICATES THE RESERVOIR NUMBER OF A RESERVOIR
C****RIGHT (ALWAYS GE 1), A CANAL OR PUMP DIVERSION (ALWAYS = 0), OR AN
C****INSTREAM FLOW RIGHT SUCH AS POWER OR FISH FLOW (ALWAYS NEGATIVE,
C**** -1 WITHOUT A MEASURED USE AND -2 WITH A MEASURED USE.
C
      DO 52 L=1,NLL
      READ(8,8) IY(L),IM(L),ID(L),P(L),ICN(L),IV(L),JR(L),SVL(L),
     1 KBG(L),KEN(L)
    8 FORMAT(I6,I2,I2,5X,F10.3,I10,2I5,F6.0,2I5)
      IMN=IM(L)
C
C----SECTION  4-1, PART 3A
C****DATE (YEAR,MONTH,DAY) IS CONVERTED TO SINGLE INTEGER FOR LATER USE.
C
      IDATE(L)=ID(L)+(100*IM(L))+(IY(L)*10000)
C
C----SECTION  4-1, PART 3B
C****BEGINNING AND END DAY OF THE YEAR FOR PERIOD OF USE IS CONVERTED
C****TO MONTH AND DAY OF THE MONTH FOR PRINTOUTS.
C
```

```
      IF(KBG(L).LE.0) KBG(L)=1
      IF(KEN(L).LE.0) KEN(L)=365
      KBDY(L)=KBG(L)
      KBM=0
  340 KBM=KBM+1
      IF(KBM.GT.12) GO TO 341
      KBDY(L)=KBDY(L)-JD(KBM)
      IF(KBDY(L).GT.0) GO TO 340
      KBDY(L)=KBDY(L)+JD(KBM)
  341 KEDY(L)=KEN(L)
      KEM=0
  342 KEM=KEM+1
      IF(KEM.GT.12) GO TO 343
      KEDY(L)=KEDY(L)-JD(KEM)
      IF(KEDY(L).GT.0) GO TO 342
      KEDY(L)=KEDY(L)+JD(KEM)
  343 CONTINUE
      KBMN(L)=KBM
      KEMN(L)=KEM
C
C----SECTION  4-1, PART 4B
C****IF ILS IS 'Y', PRINT HEADER FOR RIGHTS LISTING.
C
      IF(ILS.NE.'Y') GO TO 54
      K=K+1
      IF(K.LE.71) GO TO 54
      WRITE(OUT,53)
   53 FORMAT(1H1///,5X,5HORDER,5H NAME,18X,8HPRIORITY,8X,
     1 3HCFS,10X,5HREACH,13X,13HPERIOD OF USE//)
      K=0
   54 CONTINUE
C
C----SECTION  5-1
C****DETERMINE ORDER NUMBER OF DIVERSION TO WHICH RIGHT BELONGS (ICNL)
C****USING BINARY SEARCH METHOD.  IF ICN=0, PRINT RIGHT AS "UNDEFINED".
C
      IF(ICN(L).LE.0) GO TO 129
      IB=1
      IT=ND+1
  125 IA=(IB+IT)/2
      IF(ICN(L)-IDN(IA)) 126,127,128
  126 IF(IA.EQ.IT) GO TO 129
      IT=IA
      GO TO 125
  128 IF(IA.EQ.IB) GO TO 129
      IB=IA
      GO TO 125
  129 IF(ILS.EQ.'Y') WRITE(OUT,130) L,OM(IMN),ID(L),IY(L),P(L),
     1 OM(KBM),KBDY(L),OM(KEM),KEDY(L)
  130 FORMAT(5X,I4,19X,3X,A3,I3,1H,,I4,1X,F10.3,2X,9HUNDEFINED,
     1 16X,A3,I3,1H-,A3,I3)
      ICNL(L)=0
      GO TO 131
  127 ICNL(L)=IA
  131 CONTINUE
      I=ICNL(L)
      IF(I.LE.0) GO TO 52
```

```
C
C----SECTION  6-1, PART 1
C****KEEP COUNT OF NUMBER OF RIGHTS BELOW MINIDOKA (NM) AND THEIR ORDER
C****NUMBER (JPM) FOR LATER ALLOCATION OF EXCESS MINIDOKA-MILNER GAIN.
C
      IF(IRCH(I).NE.9) GO TO 137
      NM=NM+1
      JPM(NM)=L
  137 CONTINUE
C
C----SECTION  6-1, PART 2
C****IF THE RIGHT BEING READ HAS A SEASONAL VOLUME LIMIT (SVL(L) > 0),
C****ASSIGN THAT RIGHT AN ORDER NUMBER (NSVL) FOR LATER USE.  BE SURE
C****THAT VRD IS DIMENSIONED TO AT LEAST EQUAL THE TOTAL NUMBER OF THESE
C****RIGHTS, AND THAT THE VALUES OF VRD ARE ALL WRITTEN OUT TO THE
C****ALLOCATIONS FILE SO THAT TOTALS ARE CARRIED ON THROUGHOUT THE YEAR
C****(SEE SECTION 45-1).
C
      IVO(L)=0
      IF(SVL(L).LE.0.0) GO TO 155
      NSVL=NSVL+1
      IF(NSVL.EQ.21) PRINT 396
  396 FORMAT('  WARNING - NUMBER OF RIGHTS WITH VOLUME LIMITS EXCEEDS'/
     1' CAPABILITY FOR STORING ON ALLOCATIONS FILE')
      IVO(L)=NSVL
  155 CONTINUE
C
C----SECTION  6-1, PART 3
C****IF ILS IS 'Y', A LISTING OF RIGHTS BY PRIORITY WILL BE MADE.
C
      IF(ILS.NE.'Y') GO TO 132
      M=IRCH(I)
      WRITE(OUT,55)L,(DIVNM(I,J),J=1,4),OM(IMN),ID(L),IY(L),P(L),
     1(RCHNM(M,J),J=1,5),OM(KBM),KBDY(L),OM(KEM),KEDY(L)
   55 FORMAT(5X,I4,2X,4A4,4X,A3,I3,1H,,I4,1X,F10.3,2X,5A4,
     1 5X,A3,I3,1H-,A3,I3)
  132 CONTINUE
C
C----SECTION  6-1, PART 4
C****MOVE RESERVOIR RIGHT INDICATOR TO BECOME A RESERVOIR & POWER RIGHT
C****INDICATOR ALSO.
C
      JC(I)=JR(L)
   52 CONTINUE
      PRINT *,' '
      PRINT *,' WATER RIGHT DATA READ IN '
      PRINT *,' '
C
C----SECTION  7-1
C****IF LBC IS 'Y', A PRINTOUT OF RIGHTS WILL BE MADE BY CANAL.
C****FORMAT IS FOR COPY AND REDUCTION OF COMPUTER PRINTOUT SIZE SHEET.
C
      IF(LBC.NE.'Y') GO TO 46
      WRITE(OUT,104)
  104 FORMAT(1H1///6X,6HNUMBER,4X,14HPARTY OR CANAL,7X,8HPRIORITY,7X,
     1 3HCFS,10X,5HREACH,11X,13HPERIOD OF USE/)
      LI=9
```

```
      DO 103 L=1,ND
      TCL=0.0
      I=0
      DO 106 J=1,NLL
      IF(ICNL(J).NE.L) GO TO 106
      I=I+1
      LI=LI+1
      IF(LI.LT.82) GO TO 117
      WRITE(OUT,104)
      LI=9
  117 M=IRCH(L)
      IF(I.GT.1) GO TO 154
      LI=LI+1
      WRITE(OUT,123)
  123 FORMAT(1H )
  154 IMN=IM(J)
      KBM=KBMN(J)
      KEM=KEMN(J)
      WRITE(OUT,107) IDN(L),(DIVNM(L,K),K=1,4),OM(IMN),ID(J),IY(J),
     1 P(J),(RCHNM(M,K),K=1,5),OM(KBM),KBDY(J),OM(KEM),KEDY(J)
  107 FORMAT(4X,I10,2X,4A4,2X,A3,I3,1H,,I4,1X,F10.3,3X,5A4,2X,A3,I3,
     1 1H-,A3,I3)
      TCL=TCL+P(J)
  106 CONTINUE
      IF(TCL.LE.0.0.OR.I.LE.1) GO TO 105
      LI=LI+1
      WRITE(OUT,108) TCL
  108 FORMAT(16X,5HTOTAL,25X,F10.3)
  105 IF(LI.LT.74) GO TO 103
      WRITE(OUT,104)
      LI=9
  103 CONTINUE
   46 CONTINUE
C
C----SECTION  8-1, PART 1
C****IF INA IS 'Y', PROGRAM WILL TERMINATE AFTER RIGHTS LISTING.
C
      IF(INA.EQ.'Y') GO TO 45
C
C----SECTION  8-1, PART 2
C****FIND DIVERSION ORDER NUMBER (ISPEC) FOR SPECIAL CANALS (CANALS FOR
C****WHICH DIVERSION MUST BE CALCULATED BY SUMMING OR OTHER MEANS).
C
      DO 133 L=1,NSP
      DO 135 J=1,ND
      IF(ISPEC(L).EQ.IDN(J)) GO TO 134
      IF(J.EQ.ND) WRITE(OUT,136) ISPEC(L)
  136 FORMAT(30H NO DIVERSION NUMBER FOUND FOR,I10)
  135 CONTINUE
  134 ISPEC(L)=J
  133 CONTINUE
C
C----SECTION  9-1
C****TRANSFER SPECIAL CANAL DIVERSION ORDER NUMBERS TO UNDIMENSIONED
C****VARIABLES FOR LATER USE AS SUBSCRIPTS.  WHEN ADDING MORE SPECIAL
C****DIVERSIONS, INCREASE DIMENSION TO EXACT NUMBER.
C
```

```
      I1 =ISPEC( 1)
      I2 =ISPEC( 2)
      I3 =ISPEC( 3)
      I4 =ISPEC( 4)
      I5 =ISPEC( 5)
      I6 =ISPEC( 6)
      I7 =ISPEC( 7)
      I8 =ISPEC( 8)
      I9 =ISPEC( 9)
      I10=ISPEC(10)
      I11=ISPEC(11)
      I12=ISPEC(12)
      I13=ISPEC(13)
      I14=ISPEC(14)
      I15=ISPEC(15)
      I16=ISPEC(16)
      I17=ISPEC(17)
      I18=ISPEC(18)
      I19=ISPEC(19)
      I20=ISPEC(20)
      I21=ISPEC(21)
      I22=ISPEC(22)
      I23=ISPEC(23)
      I24=ISPEC(24)
      I25=ISPEC(25)
      I26=ISPEC(26)
      I27=ISPEC(27)
      I28=ISPEC(28)
      I29=ISPEC(29)
      I30=ISPEC(30)
      I31=ISPEC(31)
      I32=ISPEC(32)
      I33=ISPEC(33)
      I34=ISPEC(34)
      I35=ISPEC(35)
      I36=ISPEC(36)
      I37=ISPEC(37)
      I38=ISPEC(38)
      I39=ISPEC(39)
      I40=ISPEC(40)
      I41=ISPEC(41)
      I42=ISPEC(42)
      I43=ISPEC(43)
      I44=ISPEC(44)
      I45=ISPEC(45)
      I46=ISPEC(46)
      I47=ISPEC(47)
      I48=ISPEC(48)
      I49=ISPEC(49)
      I50=ISPEC(50)
      I51=ISPEC(51)
      I52=ISPEC(52)
      I53=ISPEC(53)
      I54=ISPEC(54)
      I55=ISPEC(55)
      I56=ISPEC(56)
      I57=ISPEC(57)
```

```
      I58=ISPEC(58)
      I59=ISPEC(59)
      I60=ISPEC(60)
      I61=ISPEC(61)
      I62=ISPEC(62)
      I63=ISPEC(63)
      I64=ISPEC(64)
      I65=ISPEC(65)
      I66=ISPEC(66)
      I67=ISPEC(67)
      I68=ISPEC(68)
      I69=ISPEC(69)
      I70=ISPEC(70)
      I71=ISPEC(71)
      I72=ISPEC(72)
      I73=ISPEC(73)
      I74=ISPEC(74)
      I75=ISPEC(75)
      I76=ISPEC(76)
      I77=ISPEC(77)
      I78=ISPEC(78)
      I79=ISPEC(79)
      I80=ISPEC(80)
      I81=ISPEC(81)
      I82=ISPEC(82)
      I83=ISPEC(83)
      I84=ISPEC(84)
      I85=ISPEC(85)
      I86=ISPEC(86)
      I87=ISPEC(87)
      I88=ISPEC(88)
      I89=ISPEC(89)
      I90=ISPEC(90)
      I91=ISPEC(91)
      I92=ISPEC(92)
C
C----SECTION 10-1
C****READ A MAXIMUM OF 366 DAYS OF FLOW MEASUREMENT DATA (A) FROM
C****SELECTED HISTORY FILE.  NRC IS THE NUMBER OF MEASUREMENT STATIONS
C****AND NED BECOMES THE ENDING DAY.  NMR IS THE STATION NUMBER, TYP IS
C**** "F" FOR FLOW STATION, NYE IS THE YEAR, AND NDY IS THE DAY.  KNRC
C****IS THE REACH NUMBER.
C
      JFI=0
      NED=-1
      DO 220 L=1,366
      NED=NED+1
      NMD=0
      DO 221 I=1,NRC
      J=KNRC(I)
      IF(JFI.EQ.1) GO TO 278
  227 READ(10,226,END=222) NMR,TYP,NYE,NDY,FTEMP
  226 FORMAT(I8,A1,I4,I3,9F7.0)
      GO TO 279
  278 JFI=0
  279 IF(NMR.GT.13088000) GO TO 227
      NDT=NDY+(NYE*1000)
```

```
      IF(I.GT.1) GO TO 225
      JDT(L)=NDT
      JYE(L)=NYE
      JDY(L)=NDY
  225 IF(NMR.LE.JRN(J)) GO TO 219
      WRITE(OUT,224) JRN(J),NDT,NMR
      IF(OUT2.GT.0) WRITE(OUT2,224) JRN(J),NDT,NMR
  224 FORMAT(' REACH NUMBER ',I10,'  MISSING ON DAY',I10,5X,'REACH
     1NUMBER',I10,'  READ INSTEAD. PREVIOUS DAY VALUE ASSUMED.')
      IF(L.NE.1) GO TO 286
      WRITE(OUT,194)
      IF(OUT2.GT.0) WRITE(OUT2,194)
  194 FORMAT(50H ERROR OCCURRED ON FIRST DAY, EXECUTION TERMINATED)
      STOP
  286 IF(NMD.LE.10) GO TO 249
      WRITE(OUT,280)
      IF(OUT2.GT.0) WRITE(OUT2,280)
  280 FORMAT(25H MISSING FLOWS EXCEED 10 )
      STOP
  249 A(J,L)=A(J,L-1)
      NMD=NMD+1
      JFI=1
      GO TO 221
  219 IF(NDT.EQ.JDT(L)) GO TO 288
      WRITE(OUT,223) NMR,JDT(L)
      IF(OUT2.GT.0) WRITE(OUT2,223) NMR,JDT(L)
  223 FORMAT(21H1 FLOW STATION NUMBER,I10,18HWRONG DATE FOR DAY,I10)
      STOP
  288 IF(NMR.LT.JRN(J)) GO TO 227
      IF(FTEMP.LT.9000000.OR.L.EQ.1) GO TO 297
      A(J,L)=A(J,L-1)
      WRITE(OUT,299) JRN(J),NDT
      IF(OUT2.GT.0) WRITE(OUT2,299) JRN(J),NDT
  299 FORMAT('  STATION NUMBER  ',I10,'     HAS FLOW GREATER THAN
     19000000 ON DAY',I10,' PREVIOUS DAY VALUE ASSUMED.')
      GO TO 221
  297 A(J,L)=FTEMP
  221 CONTINUE
  220 CONTINUE
  222 CONTINUE
C
C----SECTION 11-1
C****ADVANCE DATE NDF DAYS TO ALLOW FOR PROJECTED REGULATION.
C
      NED1=NED
      IF(NDF.GT.0) NED1=NED+1
      NEDF=NED+NDF
      IF(NDF.LE.0) GO TO 68
      ITD=365
```

```
      FEB=NYE/4.0
      IFEB=FEB
      FEB=FEB-IFEB
      IF(FEB.LT.0.001) ITD=366
      DO 257 L=NED1,NEDF
      NDY=NDY+1
      IF(NDY.LE.ITD) GO TO 247
      NDY=1
      NYE=NYE+1
  247 NDT=NDY+(NYE*1000)
      JDT(L)=NDT
      JYE(L)=NYE
      JDY(L)=NDY
  257 CONTINUE
   68 CONTINUE
C
C----SECTION 12-1, PART 1
C****READ DIVERSION MEASURMENTS (DVV) FOR ALL DAYS FROM SELECTED
C****HISTORY FILE.  MD1 AND MD2, THE BEGINNING AND ENDING DAY FOR WHICH
C****ALL DIVERSION DATA MUST BE PRESENT, ARE MODIFIED FOR LEAP YEARS.
C
      JTI=0
      JDI=0
      DO 201 L=1,366
      MDD1=MD1
      MDD2=MD2
      FEB=JYE(L)/4.0
      IFEB=FEB
      FEB=FEB-IFEB
      IF(FEB.GT.0.001.OR.JDY(L).LE.59) GO TO 199
      MDD1=MDD1+1
      MDD2=MDD2+1
  199 IF(JDY(L).GE.MDD1.AND.JDY(L).LE.MDD2) GO TO 198
C
C----SECTION 12-1, PART 2
C****THIS LOOP USED TO READ DIVERSION DATA FROM NOV 1 TO APR 31 WHEN
C****RECORDS NEED NOT BE PRESENT FOR EACH AND EVERY CANAL OR PUMP.
C
      DO 196 I=1,ND
      IF(JTI.EQ.1) GO TO 191
      IF(JDI.EQ.1) GO TO 192
  185 READ (11,80,END=204) NMR,TYP,NDT,DTEMP
      GO TO 190
  191 JTI=0
  190 IF(NDT.EQ.JDT(L)) GO TO 186
      JTI=1
      GO TO 197
  192 JDI=0
  186 IF(NMR.LT.IDN(I)) GO TO 185
      IF(NMR.EQ.IDN(I)) GO TO 195
      JDI=1
      GO TO 196
  195 DVV(I,L)=DTEMP
  196 CONTINUE
      GO TO 197
C
C----SECTION 12-2
```

```
C****THIS LOOP USED TO READ DIVERSION DATA FROM MAY 1 TO OCT 31 DURING
C****WHICH DATA RECORDS MUST BE PRESENT FOR ALL CANALS OR PUMPS.
C****CHECK FOR PROPER ORDER (IDN) AND DATE (JDT).  SKIP DIVERSION I9
C****(CROSSCUT CANAL) SINCE THAT PORTION WHICH GOES TO THE TETON RIVER
C****IS NOT MEASURED, AND SKIP RESERVOIRS (JC>0) AND UNMEASURED
C****INSTREAM FLOWS (JC=-1).
C
  198 NMD=0
      DO 205 I=1,ND
      IF(JC(I).GT.0.OR.JC(I).EQ.-1.OR.I.EQ.I9.OR.I.EQ.I92) GO TO 205
      IF(JTI.EQ.1) GO TO 189
   87 READ(11,80,END=204) NMR,TYP,NDT,DTEMP
   80 FORMAT(I8,A1,I7,9F7.0)
      GO TO 188
  189 JTI=0
  188 IF(NMR.GT.13088000) GO TO 87
      IF(NMR.LT.IDN(I)) GO TO 87
      IF(NMR.EQ.IDN(I)) GO TO 202
      IF(L.GT.NED) GO TO 207
      WRITE(OUT,203) IDN(I),NDT,NMR
      IF(OUT2.GT.0) WRITE(OUT2,203) IDN(I),NDT,NMR
  203 FORMAT('DIVERSION NUMBER' ,I10,'MISSING ON DAY',I10,5X,'DIVE
     1RSION NUMBER',I10,'READ INSTEAD. PREVIOUS DAY VALUE ASSUMED.')
      IF(L.NE.1) GO TO 287
      WRITE(OUT,194)
      IF(OUT2.GT.0) WRITE(OUT2,194)
      STOP
  287 IF(NMD.LE.25) GO TO 207
      WRITE(OUT,281)
      IF(OUT2.GT.0) WRITE(OUT2,281)
  281 FORMAT(29H MISSING DIVERSIONS EXCEED 25)
      STOP
  207 DVV(I,L)=DVV(I,L-1)
      NMD=NMD+1
      JTI=1
      GO TO 205
  202 IF(NDT.EQ.JDT(L)) GO TO 187
      WRITE(OUT,206) NMR,JDT(L),NDT,L
      IF(OUT2.GT.0) WRITE(OUT2,206) NMR,JDT(L),NDT,L
  206 FORMAT(18H1DIVERSION NUMBER ,I10, 19H WRONG DATE FOR DAY,I10,5X,
     1 5HDATE ,I10,17H READ INSTEAD. L=,I6)
      STOP
  187 IF(DTEMP.LT.9000000.OR.L.EQ.1) GO TO 301
      DVV(I,L)=DVV(I,L-1)
      WRITE(OUT,302) IDN(I),NDT
      IF(OUT2.GT.0) WRITE(OUT2,302) IDN(I),NDT
  302 FORMAT('DIVERSION NUMBER',I10,'HAS FLOW GREATER THAN 9000
     1000 ON DAY',I10,',PREVIOUS DAY VALUE ASSUMED.')
      GO TO 205
```

```
  301 DVV(I,L)=DTEMP
  205 CONTINUE
C
C----SECTION 12-3, PART 1
C****COMPUTE WILLOW CREEK DIVERSION TO PROGRESSIVE IRRIGATION DISTRICT
C****VIA SAND CREEK BY DEDUCTING SAND CREEK DELIVERY TO IDAHO CANAL
C****LANDS(I22).
C
  197 CONTINUE
      DVV(I20,L)=DVV(I20,L)-DVV(I22,L)
      IF(DVV(I20,L).GE.0.0) GO TO 200
      DVV(I22,L)=DVV(I22,L)+DVV(I20,L)
      DVV(I20,L)=0.0
  200 CONTINUE
  201 CONTINUE
C
C----SECTION 12-3, PART 2
C****NEDD IS LAST DAY OF DIVERSION DATA.  THIS MAY BE GREATER THAN NED
C****(LAST DAY OF REACH DATA) IF REGULATION IS TO BE PROJECTED.
C
  204 NEDD=L-1
C
C----SECTION 12-4, PART 1
C****READ EXCHANGE PUMP MEASURMENTS (EXC) FOR ALL DAYS FROM SELECTED
C****HISTORY FILE.  MD1 AND MD2, THE BEGINNING AND ENDING DAY FOR WHICH
C****ALL EXCHANGE DATA MUST BE PRESENT, ARE MODIFIED FOR LEAP YEARS.
C
      JTI=0
      JDI=0
      DO 157 L=1,366
      MDD1=MD1
      MDD2=MD2
      FEB=JYE(L)/4.0
      IFEB=FEB
      FEB=FEB-IFEB
      IF(FEB.GT.0.001.OR.JDY(L).LE.59) GO TO 303
      MDD1=MDD1+1
      MDD2=MDD2+1
  303 IF(JDY(L).GE.MDD1.AND.JDY(L).LE.MDD2) GO TO 304
C
C----SECTION 12-4, PART 2
C****THIS LOOP USED TO READ EXCHANGE WELL DATA FROM DEC 1 TO APR 1 WHEN
C****RECORDS NEED NOT BE PRESENT FOR EACH AND EVERY PUMP.
C
      DO 305 I=1,NEP
      IF(JTI.EQ.1) GO TO 306
      IF(JDI.EQ.1) GO TO 314
  316 READ(9,159,END=166) NMR,TYP,NDT,EXTEMP
      GO TO 315
  306 JTI=0
  315 IF(NDT.EQ.JDT(L)) GO TO 308
      JTI=1
      GO TO 157
  314 JDI=0
  308 IF(NMR.LT.IEN(I)) GO TO 316
      IF(NMR.EQ.IEN(I)) GO TO 312
      JDI=1
```

```
      GO TO 305
  312 EXC(I,L)=EXTEMP
  305 CONTINUE
      GO TO 157
C
C----SECTION 12-5
C****THIS LOOP USED TO READ EXCHANGE WELL DATA FROM APR 1 TO DEC 1
C****DURING WHICH DATA RECORDS MUST BE PRESENT FOR ALL PUMPS.
C****CHECK FOR PROPER ORDER (IEN) AND DATE (JDT).
C

  304 DO 158 I=1,NEP
      IF(JTI.EQ.1) GO TO 310
  167 READ(9,159,END=166) NMR,TYP,NDT,EXTEMP
  159 FORMAT(I8,A1,I7,F7.0)
      GO TO 309
  310 JTI=0
  309 IF(NMR.LT.IEN(I)) GO TO 167
      IF(NMR.EQ.IEN(I)) GO TO 168
      WRITE(OUT,169) IEN(I),NDT,NMR
      IF(OUT2.GT.0) WRITE(OUT2,169) IEN(I),NDT,NMR
  169 FORMAT(18H EXCHANGE WELL    ,I10,15H MISSING ON DAY,I10,5X,16HEXCH
     1ANGE WELL   ,I10,43H  READ INSTEAD. PREVIOUS DAY VALUE ASSUMED.)
      IF(L.NE.1) GO TO 311
      WRITE(OUT,194)
      IF(OUT2.GT.0) WRITE(OUT2,194)
      STOP
  311 EXC(I,L)=EXC(I,L-1)
      JTI=1
      GO TO 158
  168 IF(NDT.EQ.JDT(L)) GO TO 298
      WRITE(OUT,170) NMR,JDT(L),NDT
      IF(OUT2.GT.0) WRITE(OUT2,170) NMR,JDT(L),NDT
  170 FORMAT(18H1EXCHANGE  NUMBER ,I10, 19H WRONG DATE FOR DAY,I10,1H,,
     1 I10,13H READ INSTEAD)
      STOP
  298 EXC(I,L)=EXTEMP
  158 CONTINUE
  157 CONTINUE
  166 CONTINUE
C
C----SECTION 13-1, PART 1
C****READ RESERVOIR MEASUREMENTS FOR ALL DAYS FROM SELECTED HISTORY
C****FILE.  RSS IS RESERVOIR CONTENT AND EVP IS EVAPORATION IN INCHES.
C****CHECK FOR PROPER DATE (JDT).  NMR IS STATION NUMBER, TYP IS "R"
C****FOR RESERVOIR, AND NDT IS THE DATE.
C
      JRI=0
      DO 210 L=1,366
      DO 212 I=1,NP
      IF(JRI.EQ.1) GO TO 289
  215 READ(12,211,END=214) NMR,TYP,NDT,RTEMP,ETEMP,PTEMP
  211 FORMAT(I8,A1,I7,3F7.0)
```

```
      GO TO 282
  289 JRI=0
  282 IF(NMR.GT.13088000) GO TO 215
      IF(NMR.LT.IRESN(I)) GO TO 215
      IF(NMR.EQ.IRESN(I)) GO TO 283
      WRITE(OUT,284) IRESN(I),NDT,NMR
      IF(OUT2.GT.0) WRITE(OUT2,284) IRESN(I),NDT,NMR
  284 FORMAT(17H RESERVOIR NUMBER,I10,16H  MISSING ON DAY,I10,5X,16HRESE
     1RVOIR NUMBER,I10,43H  READ INSTEAD. PREVIOUS DAY VALUE ASSUMED.)
      IF(L.NE.1) GO TO 285
      WRITE(OUT,194)
      IF(OUT2.GT.0) WRITE(OUT2,194)
      STOP
  285 RSS(I,L)=RSS(I,L-1)
      EVP(I,L)=EVP(I,L-1)
      JRI=1
      GO TO 212
  283 IF(NDT.EQ.JDT(L)) GO TO 208
      WRITE(OUT,213) NMR,JDT(L)
      IF(OUT2.GT.0) WRITE(OUT2,213) NMR,JDT(L)
  213 FORMAT(17H1RESERVOIR NUMBER,I10,19H WRONG DATE FOR DAY,I10)
      STOP
  208 IF(RTEMP.LT.9000000.OR.L.EQ.1) GO TO 209
      RSS(I,L)=RSS(I,L-1)
      WRITE(OUT,290) IRESN(I),NDT
      IF(OUT2.GT.0) WRITE(OUT2,290) IRESN(I),NDT
  290 FORMAT(17H RESERVOIR NUMBER,I10,41H HAS CONTENTS GREATER THAN 9000
     1000 ON DAY,I10,29H ,PREVIOUS DAY VALUE ASSUMED.)
      GO TO 291
  209 RSS(I,L)=RTEMP
  291 IF(ETEMP.LT.90000.OR.L.EQ.1.OR.I.NE.7) GO TO 193
      EVP(I,L)=EVP(I,L-1)
      WRITE(OUT,292) IRESN(I),NDT
      IF(OUT2.GT.0) WRITE(OUT2,292) IRESN(I),NDT
  292 FORMAT(17H RESERVOIR NUMBER,I10,42H HAS EVAPORATION GREATER THAN 9
     10000 ON DAY,I10,29H ,PREVIOUS DAY VALUE ASSUMED.)
      GO TO 276
  193 EVP(I,L)=ETEMP
  276 IF(PTEMP.LT.90000.OR.L.EQ.1.OR.I.NE.7) GO TO 267
      PPT(I,L)=0.0
      WRITE(OUT,268) IRESN(I),NDT
      IF(OUT2.GT.0) WRITE(OUT2,268) IRESN(I),NDT
  268 FORMAT(17H RESERVOIR NUMBER,I10,44H HAS PRECIPITATION GREATER THAN
     1 90000 ON DAY,I10,21H ,ZERO VALUE ASSUMED.)
```

```
      GO TO 212
  267 PPT(I,L)=PTEMP
  212 CONTINUE
  210 CONTINUE
  214 CONTINUE
C
C----SECTION 13-1, PART 2
C****EXTEND RESERVOIR AND EXCHANGE PUMP DATA NDF DAYS INTO FUTURE
C****USING SAME VALUES AS LAST DAY FOR WHICH DATA WAS ENTERED.  EXTEND
C****DIVERSION DATA ONLY PAST THE NEDDTH DAY USING SAME VALUES AS THE
C****NEDDTH DAY.
C
      IF(NDF.LE.0) GO TO 12
      DO 256 L=NED1,NEDF
      DO 255 I=1,NP
      EVP(I,L)=EVP(I,NED)
      PPT(I,L)=0.0
  255 RSS(I,L)=RSS(I,NED)
      DO 171 I=1,NEP
  171 EXC(I,L)=EXC(I,NED)
      IF(L.LE.NEDD) GO TO 256
      DO 254 J=1,ND
  254 DVV(J,L)=DVV(J,NEDD)
  256 CONTINUE
   12 CONTINUE
      PRINT *,' '
      PRINT *,' HISTORY DATA READ IN   '
      PRINT *,' '
C
C----SECTION 14-1
C****READ ALLOCATION DIVERSION(STOR,SRM), RESERVOIR(CEV,SAC), AND MISC
C****(BRST,GT) DATA FOR DAY PRECEDING FIRST DAY OF CALCULATION FROM
C****SELECTED ALLOCATION FILES.  THESE DATA ARE CALCULATED BY EARLIER
C****RUNS OF THIS PROGRAM AND ARE NEEDED TO MAINTAIN CUMULATIVE TOTALS.
C****NMR = STATION NUMBER; TYP = ""D" FOR DIVERSION DATA, "R" FOR
C****RESERVOIR DATA, "M" FOR MISCELLANEOUS TOTALS; NDT = DATE.  IF
C****ANY OF THIS DATA IS BEING RESET, IBGD AND/OR IBGS > 0 AND THIS
C****ROUTINE WILL BE BYPASSED (SEE SECTION 3-3, PART 2).  THE DATE IS
C****CHECKED TO MAKE SURE IT IS THE 16TH DAY FROM THE BEGINNING (JDT(16)),
C****SINCE REGULATION BEGINS WITH THE 17TH DAY.
C
      IF(IBGD.GT.0) GO TO 231
      JDI=D
      DO 230 I=1,ND
      IF(JDI.EQ.1) GO TO 332
      READ(13,233,END=231) NMR,TYP,NDT,STEMP1,STEMP2,STEMP3
  233 FORMAT(I8,A1,I7,3F10.0)
      IF(NDT.EQ.JDT(16)) GO TO 330
      WRITE(OUT,232) NMR
      IF(OUT2.GT.0) WRITE(OUT2,232) NMR
  232 FORMAT(39H1RESERVOIR STORAGE VALUES FOR DIVERSION,I10,10H WRONG DA
     1Y)
```

```
      STOP
  332 JDI=0
  330 IF(NMR.EQ.IDN(I)) GO TO 331
      STOR(I)=0.0
      SRM(I)=0.0
      TDIV(I)=0.0
      JDI=1
      GO TO 230
  331 STOR(I)=STEMP1
      SRM(I)=STEMP2
      TDIV(I)=STEMP3
  230 CONTINUE
  231 CONTINUE
      IF(IBGS.EQ.1) THEN
        PRINT 397
  397   FORMAT(///'    DO YOU WANT RESET RESERVOIR EVAPORATION, OR USE '
     1  ,'PREVIOUS DAY''S VALUES?'///'    TO RESET VALUES ANSWER Y/N: '$)
        ACCEPT 500, IANS
        IF(IANS.EQ.'Y') GO TO 240
        END IF
      DO 241 I=1,NP
      READ(14,243,END=240) NMR,TYP,NDT,CEV(I)
  243 FORMAT(I8,A1,I7,F10.0)
      IF(NDT.EQ.JDT(16)) GO TO 241
      WRITE(OUT,242) NMR
      IF(OUT2.GT.0) WRITE(OUT2,242) NMR
  242 FORMAT('1EVAPORATION VALUES FOR RESERVOIR ',I10,10H WRONG DAY)
      STOP
  241 CONTINUE
  240 CONTINUE
      IF(IBGS.EQ.1) GO TO 217
      READ(15,252,END=250) NMR,TYP,NDT,(BRST(L),L=1,5)
  387 IF(NDT.NE.JDT(16)) THEN
                  WRITE(OUT,251) NMR
                  IF(OUT2.GT.0) WRITE(OUT2,251) NMR
  251             FORMAT(18H1MISC DATA NUMBER,I10,11H WRONG DATE)
                  STOP
                  END IF
      READ(15,252) NMR,TYP,NDT,(BRST(L),L=6,10)
      READ(15,252) NMR,TYP,NDT,(BRST(L),L=11,15)
      READ(15,252) NMR,TYP,NDT,(BRST(L),L=16,16)
      READ(15,252) NMR,TYP,NDT,(GT(L),L=1,5)
      READ(15,252) NMR,TYP,NDT,(GT(L),L=6,9)
      GO TO 218
  217 DO 216 I=1,6
  216 READ(15,252,END=250) NMR,TYP,NDT
      IF(NDT.NE.JDT(16)) GO TO 250
  218 IF(IBGV.EQ.1) GO TO 390
      READ(15,252) NMR,TYP,NDT,(VRD(L),L=1,5)
      IF(NDT.NE.JDT(16)) GO TO 387
      READ(15,252) NMR,TYP,NDT,(VRD(L),L=6,10)
      READ(15,252) NMR,TYP,NDT,(VRD(L),L=11,15)
      READ(15,252) NMR,TYP,NDT,(VRD(L),L=16,20)
      GO TO 388
  390 DO 389 I=1,4
```

```
  389 READ(15,252,END=250) NMR,TYP,NDT
      IF(NDT.NE.JDT(16)) GO TO 250
  388 IF(IBGE.EQ.1) GO TO 250
      READ(15,252) NMR,TYP,NDT,(TSE(L),L=1,5)
      IF(NDT.NE.JDT(16)) GO TO 387
      READ(15,252) NMR,TYP,NDT,(TSE(L),L=6,10)
      READ(15,252) NMR,TYP,NDT,(TSE(L),L=11,15)
      READ(15,252) NMR,TYP,NDT,(TSE(L),L=16,20)
      READ(15,252) NMR,TYP,NDT,(TSE(L),L=21,25)
  252 FORMAT(I8,A1,I7,5F10.0)
  250 CONTINUE
      PRINT *,' '
      PRINT *,' ALLOCATIONS DATA READ IN  '
      PRINT *,' '
C
C----SECTION 15-1, PART 3
C****INITIALIZE 4-DAY AVERAGE GAIN TO ZERO
C
      DO 85 L=1,NR
      DO 85 N=1,4
   85 GAV(L,N)=0.0
      CAFGD=GT(9)/1.9835
      KK=0
      PRINT *,' '
      PRINT *,' BEGINNING DAILY ACCOUNTING   '
      PRINT *,' '
C
C----SECTION 16-1, PART 1
C****BEGIN LOOP FOR DAILY CALCULATIONS.  THE 3RD DAY IS THE FIRST GAIN
C****COMPUTED SINCE AMERICAN FALLS REACH USES A 15 DAY RUNNING AVERAGE
C****GAIN AND IS THEREFORE NEEDED TO RUN THE 17TH DAY (3 THRU 17).  TO
C****COMPUTE THE GAIN ON THE 3RD, DATA IS NEEDED FROM THE 2ND AT
C****NEELEY AND THE 1ST AT BLACKFOOT.  NEDF IS THE TOTAL NUMBER OF DAYS
C****FOR WHICH GAINS ARE TO BE COMPUTED.  THIS INCLUDES DAYS FOR WHICH
C****GAINS ARE TO BE CALCULATED SIMPLY TO GET RUNNING AVERAGES,
C****REGULAR ACCOUNTING DAYS, AND PROJECTED DAYS.
C
      DO 72 KD= 3,NEDF
C
C----SECTION 16-1, PART 2
C****CHECK FOR LEAP YEAR (FEB =0.0).
C
      FEB=JYE(KD)/4.0
      IFEB=FEB
      FEB=FEB-IFEB
C
C----SECTION 16-1, PART 3
C****ALIGN DATA FOR KDTH DAY BY TRANSFERRING DIVERSIONS TO ALTERNATE
C****ALTERNATE ARRAYS WITH PROPER LAGS.  KDPIL IS THE DAY (KD) PLUS THE
C****LAG (IL).  LGD IS THE TRAVEL TIME FROM THE POINT OF DIVERSION TO
C****MILNER.
C
      DO 71 L=1,ND
      IR=IRCH(L)
      IF(IR.LE.0) GO TO 71
      IL=LGD(IR)
      KDPIL=KD+IL
```

```
01305          IF(KDPIL.GT.0) GO TO 122
01306          DIV(L)=0.0
01307          GO TO 71
01308      122 DIV(L)=DVV(L,KDPIL)
01309       71 CONTINUE
01310    C
01311    C----SECTION 16-2, PART 1
01312    C****FIND SUM (SDB) OF CANALS DIVERTING FROM DRY BED OF SNAKE RIVER
01313    C****(CANALS I32 THROUGH I33).
01314    C
01315          SDB=0.0
01316          DO 246 L=I32,I33
01317      246 SDB=SDB+DIV(L)
01318    C
01319    C----SECTION 16-2, PART 2
01320    C****COMPUTE NORTHSIDE FROM GOODING (I5), GOODING BELOW NORTHSIDE (I6),
01321    C****CROSSCUT TO FALL R (I9), AND CROSSCUT TO TETON (I10) DIVERSIONS.
01322    C
01323          DIV(I5)=(DIV(I5)/0.985)
01324          DIV(I6)=(DIV(I6)/0.985)
01325          L=KD+LAG(26)
01326          IF(L.LE.0) GO TO 86
01327          IF(L.GT.NED) A(26,L)=A(26,NED)
01328          IF(L.GT.NED) A(43,L)=A(43,NED)
01329          IF(L.GT.NED) A(42,L)=A(42,NED)
01330          DIV(I9)=DIV(I10)-A(26,L)
01331          FRCF=A(43,L)-A(42,L)
01332          IF(FRCF.GT.0.0) DIV(I9)=DIV(I9)+FRCF
01333          IF(DIV(I9).LT.0.0) DIV(I9)=0.0
01334          XCUT=DIV(I10)
01335          DIV(I10)=DIV(I10)-DIV(I9)
01336       86 CONTINUE
01337    C
01338    C----SECTION 16-2, PART 3
01339    C****COMPUTE PORTION OF RESERVATION CANAL (HEADRES) DIVERSION THAT
01340    C****BELONGS TO INDIANS (I91) AND NON-INDIANS (I92). CHECK IF BELOW
01341    C****RIGHT OF 340 CFS
01342    C
01343          HEADRES=DIV(I91)
01344          RT=(SVL(335)-VRD(10))/1.9835
01345          IF(RT.GE.340) RT=340
01346          IF(RT.LE.0.0) RT=0.0
01347          DIV(I91)=RT
01348          IF(DIV(I91).GT.HEADRES) DIV(I91)=HEADRES
01349          DIV(I92)=HEADRES-DIV(I91)
01350    C
01351    C----SECTION 16-3
01352    C****ALIGN DATA FOR KDTH DAY BY TRANSFERRING EXCHANGE PUMP DATA TO
01353    C****ALTERNATE ARRAYS WITH PROPER LAGS.  KDPIL IS THE DAY (KD) PLUS THE
01354    C****LAG (LGD). LGD IS THE TRAVEL TIME FROM THE POINT OF DIVERSION TO
01355    C****MILNER, AND IS USED HERE ALSO FOR EXCHANGE PUMPS.
01356    C
01357          DO 172 L=1,NEP
D1358          IR=IER(L)
01359          IF(IR.LE.0) GO TO 172
01360          IL=LGD(IR)
01361          KDPIL=KD+IL
```

```
      IF(KDPIL.GT.0) GO TO 173
      ECH(L)=0.0
      GO TO 172
  173 ECH(L)=EXC(L,KDPIL)
  172 CONTINUE
C
C----SECTION 17-1
C****ALIGN DATA FOR KDTH DAY BY TRANSFERRING RESERVOIR DATA TO
C****ALTERNATE ARRAYS WITH PROPER LAGS.  KDPIL IS THE DAY (KD) PLUS THE
C****LAG (IL).  LGG IS THE TRAVEL TIME FROM THE RESERVOIR TO MILNER.
C****PAN EVAPORATION (EV) AT OTHER RESERVOIRS IS BASED ON AMERICAN FALLS
C****(L=7) PAN EVAPORATION WHICH IS ESTIMATED AS 1.18 OF REFERENCE ET.
C****EVAPORATION IS ZERO BEFORE APRIL 1 (DAY 91) AND AFTER OCTOBER 31
C****(DAY 304), MILNER TIME, FOR ALL RESERVOIRS.  ANY CHANGES MADE TO
C****THE EVAPORATION CALCULATION IN THIS SECTION AND SECTION 18-2 SHOULD
C****ALSO BE MADE TO THE SNKRCHGN.FOR PROGRAM FOR CONSISTENCY.
C
      DO 74 L=1,NP
      IL=LGG(L)
      KDPIL=KD+IL
      IF(KDPIL.GT.0) GO TO 79
      EV(L)=0.0
      PP(L)=0.0
      RES(L,1)=0.0
      RES(L,2)=0.0
      GO TO 74
   79 LD=JDY(KD)
      IF(FEB.LT.0.001.AND.LD.GT.59) LD=LD-1
      IF(LD.GE.91.AND.LD.LE.304) GO TO 70
      EV(L)=0.0
      PP(L)=0.0
      GO TO 313
   70 EV(L)=EVP(L,KDPIL)
      IF(L.EQ.2.OR.L.EQ.4.OR.L.EQ.6) EV(L)=0.0
      IF(EVP(7,KDPIL).GT.0.50.OR.EVP(7,KDPIL).LT.0.0)
     1EVP(7,KDPIL)=0.25
      IF(EVP(7,KDPIL).GT.0.04) THEN
            IF(L.EQ.2) EV(L)=(1.18*EVP(7,KDPIL)*0.91)-0.03
            IF(L.EQ.4) EV(L)=(1.18*EVP(7,KDPIL)*0.67)-0.03
            IF(L.EQ.6) EV(L)=(1.18*EVP(7,KDPIL)*0.95)-0.02
            ENDIF
      IF(L.EQ.7.OR.L.EQ.8) EV(L)=1.18*EVP(7,KDPIL)
      PP(L)=PPT(L,KDPIL)
  313 RES(L,2)=RSS(L,KDPIL)
      KDPIL=KDPIL-1
      RES(L,1)=RSS(L,KDPIL)
   74 CONTINUE
C
C----SECTION 18-1, PART 1
C****VARIABLES USED IN THE REACH GAIN CALCULATION ARE INITIALIZED.  RIN
C****IS TOTAL REACH INFLOW, TRD IS TOTAL REACH DIVERSION, TRE IS TOTAL
C****EXCHANGE PUMPING, AND F IS TOTAL REACH NATURAL FLOW.
C
      DO 16 L=1,NR
      RIN(L)=0.0
      TRD(L)=0.0
      TRE(L)=0.0
```

```
   16 F(L)=0.0
C
C----SECTION 18-1, PART 2
C****DIVERSIONS ARE TOTALED BY REACH (TRD).
C
      DO 40 L=1,ND
      IR=IRCH(L)
      IF(IR.LE.0) GO TO 40
      TRD(IR)=TRD(IR)+DIV(L)
   40 CONTINUE
C
C----SECTION 18-1, PART 3
C****EXCHANGE PUMPS ARE TOTALED BY REACH (TRD).
C
      DO 174 L=1,NEP
      IR=IER(L)
      IF(IR.LE.0) GO TO 174
      TRE(IR)=TRE(IR)+ECH(L)
  174 CONTINUE
C
C----SECTION 18-2
C****COMPUTE EVAPORATION AT RESERVOIRS FOR REACH GAIN CALCULATION. SA
C****IS THE SURFACE AREA AT ARINT INCREMENTS OF RESERVOIR STORAGE.  EV
C****IS PAN  EVAPORATION IN INCHES.  ESTIMATE RESERVOIR EVAPORATION
C****AS 0.7 OF PAN EVAPORATION.  LIMIT EVAPORATION AT AMERICAN FALLS
C****(L=7) TO 8000 ACRES SINCE ADDITIONAL AREA HISTORICALLY LOST A
C****SIMILAR AMMOUNT OF WATER THRU PHREATOPHYTE EVAPOTRANSPIRATION.
C****COMPUTE AMOUNT OF PHREATOPHYTE ET (AFETPH) FOR GAIN COMPUTATION
C****USING MODIFIED KJELSTROM EQUATION.
C
      DO 116 L=1,NP
      EVAP(L)=0.0
      EVNET=0.7*EV(L)-PP(L)
      IF(EVNET.LT.0.0) EVNET=0.0
      IF(ARINT(L).LE.0.0.OR.EVNET.EQ.0.0) GO TO 116
      RI=RES(L,1)/(ARINT(L)*1000.)
      IF(RI.LT.0.0) RI=0.0
      IW=RI
      R=RI-IW
      IF(IW.GT.9) IW=9
      AREA=SA(IW+1,L)+(R*(SA(IW+2,L)-SA(IW+1,L)))
      IF(L.EQ.7) THEN
                 AREATOT=AREA
                 IF(AREA.GT.8.0) AREA=8.0
                 AREAPH=AREATOT-AREA
                 AFETPH=AREAPH*(EVNET/0.012)
                 AFETPH=AFETPH/1.9835
                 ENDIF
      EVAP(L)=(AREA*EVNET/0.012)
      EVAP(L)=EVAP(L)/1.9835
  116 CONTINUE
C
C----SECTION 19-1, PART 1
C****ARRANGE PREVIOUS DAYS' GAIN VALUES FOR AVERAGING.  IDA IS THE
C****NUMBER OF DAYS OVER WHICH GAINS ARE TO BE AVERAGED.  AT LEAST FOUR
C****PREVIOUS GAINS ARE SAVED FOR LATER CALCULATIONS.
C
```

```
      DO 78 L=1,NR
      KA=IDA(L)
      IF(KA.LT.5) KA=5
      KT=KA-1
      DO 77 N=1,KT
      J=KA-N
   77 G(L,J+1)=G(L,J)
   78 CONTINUE
C
C----SECTION 19-1, PART 2
C****ALIGN DATA FOR KDTH DAY BY TRANSFERRING FLOW DATA (AF) TO
C****ALTERNATE ARRAYS WITH PROPER LAGS.  KDPIL IS THE DAY (KD) PLUS THE
C****LAG (IL).  LAG IS THE TRAVEL TIME FROM THE FLOW POINT TO MILNER.
C
C
      DO 73 J=1,NR
      L=IORD(J)
      IF(L.LE.0) GO TO 73
      IL=LAG(L)
      KDPIL=KD+IL
      IF(KDPIL.GT.0) GO TO 60
      AF(L)=0.0
      GO TO 73
C
C----SECTION 20-1, PART 1
C****IF THE DAY IS GREATER THAN NED, THE LAST DAY OF MEASURED DATA,
C****THEN THE FLOW DATA MUST BE PROJECTED FROM PREVIOUS DATA.  SET
C****RESERVOIR EVAPORATION EQUAL TO PREVIOUS DAY'S EVAPORATION.
C
   60 IF(KDPIL.LE.NED) GO TO 259
      EVPR=0.0
      IS=IRS(L)
      IF(IS.EQ.0) GO TO 258
      EVPR=EVAP(IS)
  258 SUM=0.0
C
C----SECTION 20-1, PART 2
C****FOR FIRST PROJECTED DAY (NED1), FLOW IS ESTIMATED BY USING
C****PREVIOUS CALCULATED AVERAGE GAINS.
C
      IF(KDPIL.GT.NED1) GO TO 237
C
C----SECTION 20-1, PART 3
C****IF MGA IS NOT EQUAL TO ONE, GAIN IS PROJECTED BY ADDING THE
C****AVERAGE OF THE CHANGE IN AVERAGE GAIN OVER THE PREVIOUS 3 DAYS TO
C****THE LAST DAY'S AVERAGE GAIN.
C
      IF(MGA(L).EQ.1) GO TO 239
      DO 248 IJ=1,3
  248 SUM=SUM+GAV(L,IJ)-GAV(L,IJ+1)
      GAIN(L)=GAV(L,1)+(SUM/3.0)
      GO TO 244
C
C----SECTION 20-1, PART 4
C****IF MGA EQUALS ONE THE GAIN IS SIMPLY THE AVERAGE OF THE PREVIOUS
C****FOUR DAY'S AVERAGE GAIN.
C
```

```
  239 CONTINUE
      DO 238 IJ=1,4
  238 SUM=SUM+GAV(L,IJ)
      GAIN(L)=SUM/4.0
C
C----SECTION 20-1, PART 5
C****CORRECT GAINS FOR EAGLE ROCK CANAL AND RIRIE TO UCON SO THAT
C****PROPER PROJECTED FLOWS AND PRELIMINARY GAINS WILL BE COMPUTED.
C
  244 IF(L.EQ.29) GAIN(29)=AF(29)
      IF(L.EQ.25) GAIN(25)=GAIN(25)+ERL
C
C----SECTION 21-1, PART 1
C****COMPUTE THE PROJECTED FLOW WITH THE REACH GAIN EQUATION (INFLOW
C****MINUS DIVERSION MINUS EVAPORATION PLUS GAIN).  RESERVOIR CHANGE
C****IN STORAGE IS ASSUMED ZERO.
C
  237 AF(L)=RIN(L)-TRD(L)+TRE(L)-EVPR+GAIN(L)
C
C----SECTION 21-1, PART 2
C****ADD FLOW OF CROSSCUT CANAL TO PROJECTED FLOW OF TETON RIVER NR ST
C****ANTHONY SINCE GAIN DID NOT INCLUDE THIS FLOW.
C
      IF(L.NE.18) GO TO 293
      CCWS=AF(27)
      IF(CCWS.GT.DIV(I10)) CCWS=DIV(I10)
      AF(18)=AF(18)+CCWS
      GO TO 245
C
C----SECTION 21-1, PART 3
C****CORRECT ACTUAL FLOWS BELOW DRY BED AND IDAHO FALLS SINCE GAINS USED
C****TO CALCULATE BELOW DRY BED WERE BASED ON SUM OF DRY BED DIVERSIONS
C**** (AF(37)) INSTEAD OF ACTUAL DIVERSION OF DRY BED (SDB) AND GAINS
C****USED TO CALCULATE IDAHO FALLS WERE ALSO ADJUSTED BY SAME AMOUNT.
C
  293 IF(L.NE.4) GO TO 294
      AF(4)=AF(4)-(AF(37)-SDB)
      GO TO 245
  294 IF(L.NE.5) GO TO 245
      AF(5)=AF(5)+(AF(37)-SDB)
      GO TO 245
C
C----SECTION 21-1, PART 4
C****FLOW PROJECTION IS COMPLETE AT THIS POINT.
C
  259 AF(L)=A(L,KDPIL)
C
C----SECTION 22-1, PART 1
C****IF A REACH HAS ICF=1, THEN THE FLOW WAS NOT MEASURED AND IS THERE-
C****FORE ESTIMATED BY REACH INFLOW LESS TOTAL REACH DIVERSIONS.  IF A
C****NEGATIVE FLOW IS CALCULATED FOR A NONPROJECTED REACH, SET = ZERO.
C****ALSO CORRECT BELOW DRY BED FLOW AF(4) SINCE COMPUTED FLOW WAS
C****BASED ON SUM OF DRY BED INDIVIDUAL DIVERSIONS , NOT THE ACTUAL
C****TOTAL DIVERSION AT HEADWORKS.
C
  253 IF(ICF(L).NE.1) GO TO 245
      AF(L)=RIN(L)-TRD(L)+TRE(L)
```

```
      IF(L.EQ.4) AF(L)=AF(L)-(AF(37)-SDB)
      IF(AF(L).LT.0.0.AND.KDPIL.LE.NED) AF(L)=0.0
C
C----SECTION 22-1, PART 2
C****KEEP A CURRENT ACCOUNT OF REACH INFLOWS FOR ABOVE CALCULATION OF
C****UNMEASURED REACH OUTFLOWS, AND FOR GAIN CALCULATION BELOW.
C
  245 IO=IDS(L)
      IF(IO.LE.0) GO TO 73
      RIN(IO)=RIN(IO)+AF(L)
   73 CONTINUE
C
C----SECTION 23-1, PART 1
C****THE ACTUAL MEASURED RIVER FLOW (AF) AND THE TOTAL REACH DIVERSIONS
C****(TRD) ARE USED TO CALCULATE NATURAL GAINS TO EACH REACH.  IF
C****THE REACH CONTAINS A RESERVOIR THE GAIN IS CORRECTED FOR CHANGE IN
C****STORAGE (DS) AND NET EVAPORATION (EVAP).  RIN IS THE ACTUAL INFLOW TO
C****THE REACH. THEREFORE THE GAIN IS CALCULATED AS OUTFLOW + RESERVOIR
C****CHANGE IN STORAGE + NET EVAPORATION - INFLOW - EXCHANGE PUMPING
C**** + DIVERSIONS.  RETURN FLOW IS CONSIDERED A PART OF NATURAL FLOW
C****AND THUS NOT ESTIMATED.
C
      DO 41 L=1,NR
      IR=IORD(L)
      IF(IR.LE.0) GO TO 41
      IF(IRS(IR).EQ.0) GO TO 42
      IS=IRS(IR)
      DSTOR=(RES(IS,2)-RES(IS,1))/1.9835
      DS(IS)=DSTOR
      EVPR=EVAP(IS)
      GO TO 43
   42 DSTOR=0.0
      EVPR=0.0
   43 G(IR,1)=AF(IR)+DSTOR+EVPR-RIN(IR)+TRD(IR)-TRE(IR)
   41 CONTINUE
C
C----SECTION 23-1, PART 2
C****CORRECT GAIN IN HEISE TO BELOW DRY BED REACH AND MENAN TO
C****IDAHO FALLS REACH FOR DRY BED FLOW.  AMOUNT DRY BED FLOW EXCEEDS
C****INDIVIDUAL DRY BED CANALS (DBC) IS ADDED TO HEISE REACH GAIN AND
C****DEDUCTED FROM MENAN REACH GAIN.
C
      DBC=AF(37)-SDB
      G(4,1)=G(4,1)+DBC
      G(5,1)=G(5,1)-DBC
C
C----SECTION 23-1, PART 3
C****CORRECT GAIN IN MENAN TO IDAHO FALLS REACH (5) AND IDAHO FALLS
C****TO SHELLEY (ACTUALLY ABV WILLOW CREEK TO SHELLEY (REACH 31)) FOR
C****GREAT WESTERN SPILL (AF(41)) AROUND IDAHO FALLS GAGE.
C
      G(5,1)=G(5,1)+AF(41)
      G(31,1)=G(31,1)-AF(41)
C
C----SECTION 24-1, PART 1
C****THE FLOW FROM THE CROSSCUT CANAL (CCWS) IS REMOVED FROM THE TETON
C****RIVER NR ST ANTHONY REACH GAIN SINCE IT IS NOT NATURAL TO THAT
```

```
C****REACH.  HOWEVER, LIMIT CCWS BY THE DIVERSION AT THE HEAD OF THE
C****CROSSCUT EXCLUDING FALL RIVER WATER (DIV(I10)).
C
      CCWS=AF(27)
      CCWT=AF(27)
      IF(CCWS.GT.DIV(I10)) CCWS=DIV(I10)
      G(18,1)=G(18,1)-CCWS
C
C----SECTION 24-1, PART 2
C****IF THE GAIN TO WILLOW CREEK FROM RIRIE TO THE FLOODWAY IS NEGATIVE
C****ASSIGN THE LOSS PROPORTIONALLY TO THE EAGLE ROCK CANAL (ERL), THE
C****NATURAL FLOW (WCNL), AND STORAGE RELEASE (WCSL). THE NEW GAIN IS
C****THEN EQUAL TO WCNL AND THE EAGLE ROCK GAIN IS REDUCED BY ERL. THE
C****EAGLE ROCK GAIN IS THEN ALSO ADJUSTED DOWNWARD BY THE AMOUNT THAT
C****IS USABLE BY ALL CANALS ON WILLOW CREEK EXCEPT THE IDAHO (I22),
C****WHICH HAS NO WATER IN THE EAGLE ROCK.  THE DIFFERENCE BETWEEN THE
C****TOTAL DIVERSIONS (TWCD) AND THE EAGLE ROCK CONTRIBUTION (ERC)
C****IS THE AMOUNT (WCEX) THAT MUST BE SUPPLIED FROM NATURAL FLOW OR
C****STORAGE. NATURAL FLOW ALLOCATION IS LATER LIMITED TO WCEX.  SINCE
C****THE GAIN TO RIRIE RESEVOIR IS USUALLY NEGATIVE, TRANSFER THE GAIN
C****TO ANOTHER VARIABLE (RIRL) FOR LATER SUMMING, AND ZERO THE GAIN.
C
      WCSL=0.0
      IF(G(25,1).GE.0.0) GO TO 317
      WCNF=AF(23)
      WCSF=AF(24)-AF(23)
      IF(AF(24).GE.AF(23)) GO TO 318
      WCNF=AF(24)
      WCSF=0.0
  318 TWCF=AF(29)+WCNF+WCSF
      ERL=(AF(29)/TWCF)*G(25,1)
      WCNL=(WCNF/TWCF)*G(25,1)
      WCSL=(WCSF/TWCF)*G(25,1)
      G(25,1)=WCNL
      G(29,1)=G(29,1)+ERL
  317 ERC=G(29,1)
      TWCD=TRD(25)-DIV(I22)
      IF(TWCD.LT.ERC) ERC=TWCD
      G(29,1)=G(29,1)-ERC
      WCEX=TWCD-ERC
      RWCEX=WCEX
      RIRL=G(24,1)
      G(24,1)=0.0
C
C----SECTION 25-1, PART 1
C****ARRANGE PREVIOUS AVERAGE GAINS (GAV) FOR PROJECTING GAINS BEYOND
C****AVAILABLE DATA. COMPUTE CURRENT AVERAGE GAIN FOR LAST KT (NOT MORE
C****THAN 15) DAYS FOR EACH REACH FOR USE IN NATURAL FLOW COMPUTATION.
C****IF THE GAIN IS A PROJECTED VALUE (KDPIL > NED), THEN NO AVERAGING
C****IS DONE SINCE THAT VALUE IS ALREADY AN ESTIMATED VALUE.
C
      DO 235 L=1,NR
      DO 99 N=1,3
      J=4-N
   99 GAV(L,J+1)=GAV(L,J)
      GAV(L,1)=0.0
      IL=LAG(L)
```

```
      KDPIL=KD+IL
      IF(KDPIL.LE.NED) GO TO 88
      GAV(L,1)=G(L,1)
      GO TO 235
   88 KT=IDA(L)
      IF(KT.GT.15) KT=15
      IF(KT.LT.1) KT=1
      DO 236 N=1,KT
  236 GAV(L,1)=GAV(L,1)+(G(L,N)/KT)
  235 CONTINUE
C
C----SECTION 25-1, PART 2
C****INITIAL REACH GAIN CALCULATION ENDS HERE.  IF DAY OF FIRST WATER
C****RIGHT ALLOCATION HAS NOT BEEN REACHED (KD=17), THEN CONTINUE TO
C****NEXT DAY'S GAIN CALCULATION WITHOUT DOING GAIN AVERAGING OR FLOW
C****ALLOCATION.  UNTIL DAY 17, THE GAINS ARE NEEDED ONLY FOR MAKING
C****RUNNING AVERAGES.
C
      IF(KD.LT.17) GO TO 72
C
C----SECTION 25-2
C****COMPUTE GAIN TO AMERICAN FALLS REACH USING MODIFIED KJELSTROM
C****EQUATION (REGRESSION WITH SPRING CREEK).  THEN SUBTRACT THE
C****PHREATOPHYTE EVAPOTRANSPIRATION (AFTEPH).  KEEP A CURRENT ACCOUNT
C****OF CUMULATIVE DIFFERENCE (CAFGD) BETWEEN INFLOW-OUTFLOW REACH GAIN
C****(GAV(7,1)) AND KJELSTROM GAIN (AMFG).  THEN MODIFY KJELSTROM GAIN
C****EITHER UPWARD OR DOWNWARD BY AN AMOUNT EQUAL TO A PORTION (AMFGC)
C****OF THIS DIFFERENCE.  THIS PREVENTS EITHER A SYSTEMATIC GAIN OR LOSS
C****OF WATER.
C
      AMFG=(5.2*AF(40))+970.
      SPCKGN=AMFG
      AMFG=AMFG-AFETPH
      CAFGD=CAFGD+(GAV(7,1)-AMFG)
      AMFGC=ABS(CAFGD*0.0001)
      AMFG=AMFG+(AMFGC*CAFGD)
      CAFGD=CAFGD-(AMFGC*CAFGD)
C
C----SECTION 26-1, PART 1
C****BEGIN ALLOCATION - TRANSFER AVERAGE GAINS TO SINGLE DIMENSIONED
C****ARRAY (AG).
C
      DO 92 L=1,NR
      AG(L)=GAV(L,1)
      IF(L.EQ.7) AG(L)=AMFG
   92 CONTINUE
C
C----SECTION 26-1, PART 2
C****SUM DIVERSIONS (T1) AND REACH GAINS (T2) FOR ENTIRE SYSTEM AND
C****FIND AMOUNT THAT DIVERSIONS EXCEED TOTAL GAIN (D2). DO NOT INCLUDE
C****REACHES FOR WHICH ICF=2 SINCE THEY ARE OFFSTREAM FEEDER CANALS.
C
      T1=0.0
      T2=0.0
      DO 146 L=1,NR
      IF(ICF(L).EQ.2) GO TO 146
      T1=T1+TRD(L)
```

```
      T2=T2+AG(L)
  146 CONTINUE
      D2=T1-T2
C
C----SECTION 26-1, PART 3
C****ZERO THE MINIDOKA TO MILNER GAIN SO THAT MINIDOKA PROJECT CAN BE
C****CREDITED WITH THE GAIN IF THEY ARE USING STORED WATER - KEEP GAIN
C****(GMIL) FOR LATER USE.  IF MILNER GAIN IS NEGATIVE OR IF TOTAL
C****DIVERSIONS ARE LESS THAN 2000 CFS GREATER THAN TOTAL GAIN, SET
C****IDT=0 SO THAT MINIDOKA TO MILNER GAIN WILL NOT BE SET = ZERO.
C****IF D2 IS LESS THAN 2000 CFS IT IS PROBABLE THAT MINIDOKA PROJECT
C****DOES NOT REQUIRE GAIN.
C
C
C     GMIL=AG(9)
C     IDT=1
C     IF(GMIL.LE.0.0.OR.D2.LT.2000.) IDT=0
C     IF(IDT.LE.0) GO TO 140
C     AG(9)=0.0
C 140 CONTINUE
C
C----SECTION 27-1, PART 1
C****COMPUTE NATURAL FLOW (F) FOR EACH REACH BY ACCUMULATING GAINS IN
C****DOWNSTREAM ORDER.  AGAIN DO NOT INCLUDE FEEDER CANALS (ICF=2).
C
      DO 15 L=1,NR
      IC=IORD(L)
      IF(IC.LE.0.OR.ICF(IC).EQ.2) GO TO 15
      F(IC)=F(IC)+AG(IC)
      IO=IDS(IC)
      IF(IO.LE.0) GO TO 15
      F(IO)=F(IO)+F(IC)
   15 CONTINUE
C
C----SECTION 27-1, PART 2
C****RD IS INITIALLY EQUAL TO EACH DIVERSION.  AS EACH RIGHT IS MET BY
C****NATURAL FLOW, THAT AMOUNT IS DEDUCTED SO THAT RD = REMAINING
C****DIVERSION.  ZERO THE TOTAL DIVERSION MADE FROM NATURAL FLOW (DM).
C
      DO 1 L=1,ND
      DM(L)=0.0
    1 RD(L)=DIV(L)
C
C----SECTION 27-2
C****ADD DIVERSIONS TO REMAINING DIVERSIONS OF CANALS WITH WHICH
C****RIGHTS ARE HELD IN COMMON.  STORAGE USED AND NATURAL FLOW
C****DIVERTED IS SUMMARIZED UNDER ONLY THE MAIN CANAL.  THESE
C****CANALS CAN BE IN THE SAME REACH OR IN A REACH DOWNSTREAM FROM
C****THE MAIN DIVERSION.  THE REMAINING DIVERSION OF THE SECONDARY
C****DIVERSIONS ARE ZEROED SO NO STORED WATER USE APPEARS.  FOR
C****THOSE DIVERSIONS IN DIFFERENT REACHES, CORRECTIONS ARE MADE
C****LATER TO REACH NATURAL FLOW DIVERTED AND REMAINING NATURAL
C****FLOW VALUES (SEE SECTION 37-1).
C
      RD(I1)=RD(I1)+DIV(I2)
      IF(VRD(12).GE.6725) GO TO 405
      IF(DIV(I1).GE.51.93) THEN
```

```
      RD(I1)=RD(I1)-51.93
      ELSE
      RD(I1)=RD(I1)-DIV(I1)
      END IF
  405 CONTINUE
      RD(I2)=0.0
      RD(I4)=RD(I4)+DIV(I3)+DIV(I5)+DIV(I7)+DIV(I74)
      RD(I3)=0.0
      RD(I5)=0.0
      RD(I7)=0.0
      RD(I74)=0.0
      IF(VRD(12).GE.6725) GO TO 410
      IF(DIV(I8).GE.25.967) THEN
      RD(I8)=RD(I8)-25.967
      ELSE
      RD(I8)=RD(I8)-DIV(I8)
      END IF
  410 CONTINUE
      RD(I11)=RD(I11)+DIV(I12)
      RD(I12)=0.0
      RD(I14)=RD(I13)+DIV(I14)
      RD(I13)=0.0
      RD(I15)=RD(I15)+DIV(I16)
      RD(I16)=0.0
      RD(I17)=RD(I17)+DIV(I9)
      RD(I9)=0.0
      RD(I18)=RD(I18)+DIV(I19)
      RD(I19)=0.0
      RD(I23)=RD(I23)+DIV(I25)+DIV(I26)+DIV(I27)+DIV(I24)+DIV(I62)
      RD(I25)=0.0
      RD(I26)=0.0
      RD(I27)=0.0
      RD(I24)=0.0
      RD(I62)=0.0
      RD(I28)=RD(I28)+DIV(I29)+DIV(I60)
      RD(I29)=0.0
      RD(I60)=0.0
      RD(I30)=RD(I30)+DIV(I63)
      RD(I63)=0.0
      RD(I31)=RD(I31)+DIV(I61)
      RD(I61)=0.0
      RD(I35)=RD(I35)+DIV(I34)
      RD(I34)=0.0
      RD(I36)=RD(I36)+DIV(I37)
      RD(I37)=0.0
      RD(I40)=RD(I40)+DIV(I41)+DIV(I50)+DIV(I58)
      RD(I41)=0.0
      RD(I50)=0.0
      RD(I58)=0.0
      RD(I42)=RD(I42)+DIV(I43)+DIV(I44)+DIV(I67)+DIV(I73)+DIV(I78)
     1 +DIV(I79)+DIV(I80)+DIV(I81)+DIV(I82)+DIV(I83)+DIV(I84)
      RD(I43)=0.0
      RD(I44)=0.0
      RD(I67)=0.0
      RD(I73)=0.0
      RD(I78)=0.0
      RD(I79)=0.0
```

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      RD(I80)=0.0
      RD(I81)=0.0
      RD(I82)=0.0
      RD(I83)=0.0
      RD(I84)=0.0
      RD(I46)=RD(I46)+DIV(I49)
      RD(I49)=0.0
      RD(I47)=RD(I47)+DIV(I48)
      RD(I48)=0.0
      RD(I51)=RD(I51)+DIV(I52)+DIV(I55)+DIV(I56)+DIV(I57)
      RD(I52)=0.0
      RD(I55)=0.0
      RD(I56)=0.0
      RD(I57)=0.0
      RD(I53)=RD(I53)+DIV(I54)
      RD(I54)=0.0
      RD(I64)=RD(I64)+DIV(I65)+DIV(I66)
      RD(I65)=0.0
      RD(I66)=0.0
      RD(I87)=RD(I87)+DIV(I88)+DIV(I89)+DIV(I90)
      RD(I88)=0.0
      RD(I89)=0.0
      RD(I90)=0.0
      RD(I75)=RD(I75)+DIV(I77)
      RD(I77)=0.0
      IF(VRD(12).GE.6725) GO TO 415
      IF(DIV(I1).GE.51.933) THEN
       RD(I85)=RD(I85)+51.933
       END IF
      IF(DIV(I8).GE.25.967) THEN
       RD(I85)=RD(I85)+25.967
       END IF
C     IF(DIV(I86).GE.19.47) THEN
C      RD(I85)=RD(I85)+19.47
C      END IF
C     IF(RD(I86).GE.19.47) THEN
C      RD(I86)=RD(I86)-19.47
C      ELSE
C      RD(I86)=RD(I86)-DIV(I86)
C      END IF
  415 CONTINUE
C
C----SECTION 28-1, PART 1
C****TD IS INITIALIZED AS ZERO, AND BECOMES THE TOTAL DIVERSION IN EACH
C****REACH MET BY NATURAL FLOW.  IRT IS INITIALIZED AS THE TOTAL
C****NUMBER OF RIGHTS, AND BECOMES THE NUMBER OF THE LAST RIGHT MET IN
C****EACH REACH BY NATURAL FLOW.  RF IS INITIALIZED AS THE NATURAL
C****FLOW, AND BECOMES THE REMAINING NATURAL FLOW (AFTER UPSTREAM
C****DIVERSIONS HAVE BEEN DEDUCTED) OF EACH REACH.  PF IS INITIALIZED
C****AS ZERO AND BECOMES THE FLOW RESERVED FROM NATURAL BY POWER RIGHTS
C****IN EACH REACH. INITIALIZE RESERVOIR DAILY ACCRUED STORAGE TO ZERO.
C
      DO 2 L=1,NR
      TD(L)=0.0
      PF(L)=0.0
      IRT(L)=NLL
    2 RF(L)=F(L)
```

```
      DO 10 L=1,NP
   10 DRA(L)=0.0
C
C----SECTION 28-1, PART 2
C****THE INDICATOR (MIL) OF WHETHER THE MINIDOKA PROJECT HAS A REMAIN-
C****ING DIVERSION NOT SATISFIED BY NATURAL FLOW IS INITIALIZED = ZERO.
C****THE DAILY AMOUNT OF THE MINIDOKA TO MILNER GAIN USED BY THE
C****PROJECT IS ALSO INITIALIZED (AMIL).
C
      MIL=0
      AMIL=0.0
C
C----SECTION 29-1
C****ALL RIGHTS (P) ARE PUT IN A TEMPORARY ARRAY (T) WHICH CAN BE
C****MODIFIED DURING RIGHT ALLOCATION.  FIRST THE CANAL (OR PUMP) IS
C****IDENTIFIED (J), THEN THE REACH (IR) AND THE TRAVEL TIME TO MILNER
C****(IL).  CHECK THE BEGINNING (KBG) AND ENDING (KEN) DATE FOR WHICH THE
C****RIGHT IS VALID, THEN ZERO THE RIGHT OUTSIDE OF THESE DATES.  IVV IS
C****THE NUMBER OF THE SPECIAL RIGHTS WHICH VARY WITH YEAR.  IF THE RIGHT
C**** IS ONE OF THESE, CHECK DAY (KDPIL) AND MODIFY RIGHT (T) IF NECESSARY.
C
      DO 47 L=1,NLL
      J=ICNL(L)
      IR=IRCH(J)
      IL=LGD(IR)
      KDPIL=KD+IL
      LD=JDY(KDPIL)
      FB=JYE(KDPIL)
      IFB=FB
      FB=FB-IFB
      IF(FB.LT.0.001.AND.LD.GT.59) LD=LD-1
      T(L)=P(L)
C
C****IF THE RIGHT IS A POWER RIGHT WITH NO VALUE FOR AMOUNT USED
C****(JR = -1), THEN ZERO OUT THE FLOW RIGHT.  THIS SHOULD BE CHANGED
C****WHEN WE FIGURE OUT EXACTLY HOW TO HANDLE POWER RIGHTS. RJS 9-MAR-89
C****IF THE REACH IS 8, THEN DO NOT ZERO OUT RIGHT SINCE THE MINIDOKA
C****POWER RIGHT CAUSES WATER TO FLOW PAST MILNER.
C
      IF(JR(L).EQ.-1.AND.IR.NE.8) T(L)=0.0
      IF(KBG(L).LE.0.AND.KEN(L).LE.0) GO TO 142
      IF(KBG(L).GT.KEN(L)) GO TO 69
      IF(LD.LT.KBG(L).OR.LD.GT.KEN(L)) T(L)=0.0
      GO TO 142
   69 IF(LD.LT.KBG(L).AND.LD.GT.KEN(L)) T(L)=0.0
  142 IVV=IV(L)
      IF(IVV.LE.0) GO TO 47
      IF(IVV.LT.10.OR.IVV.GT.11) GO TO 94
      IF(IVV.EQ.10.AND.LD.LT.121) T(L)=0.0
      IF(IVV.EQ.11.AND.LD.GE.121) T(L)=850.0
      GO TO 47
   94 IF(LD.LT.182) GO TO 47
      IF(IVV.NE.1) GO TO 328
      IF(LD.GE.183.AND.LD.LE.197) T(L)=T(L)-100.
      IF(LD.GE.213) T(L)=T(L)-100.
      GO TO 47
  328 IF(IVV.NE.3) GO TO 56
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      IF(LD.GE.183.AND.LD.LE.197) T(L)=T(L)-50
      IF(LD.GE.213) T(L)=T(L)-50
      GO TO 47
   56 IF(IVV  .NE.6) GO TO 75
      IF(LD.GE.182.AND.LD.LE.196) T(L)=360.
      IF(LD.GE.213) T(L)=360.
      GO TO 47
   75 IF(IVV.EQ.2) T(L)=T(L)*0.7826
      IF(IVV.EQ.4) T(L)=240.
      IF(IVV.EQ.5) T(L)=7.68
      IF(IVV.EQ.7) T(L)=120.
      IF(IVV.EQ.8) T(L)=160.
      IF(IVV.EQ.9.OR.IVV.EQ.12) T(L)=0.0
   47 CONTINUE
C
C----SECTION 30-1, PART 1
C****TRANSFER DATE, CANAL NUMBER, AND RESERVOIR ACCOUNT NUMBER OF EACH
C****RIGHT TO ALTERNATE ARRAYS THAT CAN BE MODIFIED LATER FOR
C****DISTRIBUTION OF MINIDOKA TO MILNER EXCESS GAIN.
C
      DO 145 L=1,NLL
      JDATE(L)=IDATE(L)
      JCNL(L)=ICNL(L)
      JJ(L)=JR(L)
  145 CONTINUE
C
C----SECTION 30-1, PART 2
C****RIGHT ALLOCATION ROUTINE BEGINS HERE.  THE INTEGER DATE IS USED
C****TO IDENTIFY RIGHTS HAVING EQUAL PRIORITY.  THE FOLLOWING LOOP
C****CONTINUES UNTIL A RIGHT OF LESSER PRIORITY IS REACHED, AT WHICH
C****TIME TRANSFER IS MADE OUT OF THE LOOP, RIGHTS NUMBERING L1 THROUGH
C****L2 HAVING BEEN IDENTIFIED AS EQUAL FOR A TOTAL OF LN RIGHTS.  ALSO
C****A CHECK IS MADE FOR PROPER ORDER; INTEGER DATE MUST INCREASE
C****THROUGH LIST OF RIGHTS, OTHERWISE PROGRAM TERMINATES.
C
      L1=1
      NLK=NLL
   24 DO 23 L=L1,NLK
      IF(L.EQ.NLK) GO TO 27
      IF(JDATE(L+1)-JDATE(L)) 25,23,27
   25 WRITE(OUT,28) JDATE(L)
   28 FORMAT(1H1,15HRIGHT FOLLOWING,I10,16H IS OUT OF ORDER)
      STOP
   23 CONTINUE
   27 L2=L
      LN=L2-L1+1
C
C----SECTION 30-1, PART 3
C****IF THERE IS ONLY ONE RIGHT OF THE SAME PRIORITY GO DIRECTLY TO THE
C****ROUTINE WHICH TRIES TO MEET THE RIGHT FROM NATURAL FLOW.  IF THERE
C****IS MORE THAN ONE RIGHT OF THE SAME PRIORITY, THE PROPORTIONING
C****ROUTINE ALLOCATES WATER TO RIGHTS PROPORTIONALLY IF THE SUPPLY IS
C****NOT GREAT ENOUGH TO MEET THOSE RIGHTS.
C
      IF(LN.EQ.1) GO TO 29
C
C----SECTION 31-1, PART 1
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C****INITIALIZE PERCENT THAT RIGHTS IN EACH REACH WILL BE MET TO
C****100 (PCT=1.00).   THIS VARIABLE IS USED TO FACTOR RIGHTS OF EQUAL
C****PRIORITY WHEN WATER SUPPLY IS INSUFFICIENT.
C
      DO 51 L=1,NR
   51 PCT(L)=1.0
C
C----SECTION 31-1, PART 2
C****JCOUNT BECOMES THE NUMBER OF PASSES NEEDED TO SATISFY THE LN
C****RIGHTS HAVING THE SAME PRIORITY.
C
      JCOUNT=0
C
C----SECTION 31-1, PART 3
C****INITIALIZE VARIABLES USED TO ALLOCATE LN RIGHTS WITH SAME PRIORITY
C****DATE.  ONE OR MORE PASSES ARE MADE THROUGH THE ENTIRE RIVER SYSTEM
C****UNTIL ALL LN RIGHTS ARE ALLOCATED OR THE FLOW IS USED UP.  EACH
C****TIME NEW VALUES OF PCT ARE CALCULATED.  IF ENOUGH FLOW EXISTS TO
C****SATISFY ALL LN RIGHTS, ONLY ONE PASS IS NEEDED AND ALL PCT'S = 1.0
C****TRM BECOMES THE TOTAL OF LN RIGHTS MET IN REACHES UPSTREAM OF THE
C****LTH REACH.  CTR BECOMES THE TOTAL OF LN UPSTREAM RIGHTS REGARDLESS
C****OF WHETHER THEY HAVE OR HAVE NOT BEEN MET.  TR BECOMES THE TOTAL
C****OF THE LN RIGHTS IN EACH REACH.
C
   37 DO 39 L=1,NR
      TRM(L)=0.0
      CTR(L)=0.0
   39 TR(L)=0.0
C
C----SECTION 31-1, PART 4
C****SUM EQUAL PRIORITY RIGHTS BY REACH.  IF FLOW AVAILABLE FOR RIGHTS
C****IN REACH HAS BEEN ENTIRELY USED (PCT=0.0) OR IF DIVERSION HAS BEEN
C****MET (RD=0.0) THEN SET THE RIGHT EQUAL TO ZERO FOR ALL RIGHTS OTHER
C****THAN RESERVOIR RIGHTS (J=0), AND THE SAME IF THE SEASONAL VOLUME
C****LIMIT (SVL) HAS BEEN REACHED.  IF THERE IS NO DIVERSION FOR THE
C****RIGHT (IC=0), SKIP IT.
C
      DO 30 L=L1,L2
      IC=JCNL(L)
      IF(IC.LE.0) GO TO 30
      IR=IRCH(IC)
      J=JJ(L)
      IF(PCT(IR).LE.0.0.OR.RD(IC).LE.0.001.AND.J.EQ.0) T(L)=0.0
      IF(IVO(L).LE.0) GO TO 300
      LL=IVO(L)
      IF(SVL(L).LE.VRD(LL)) T(L)=0.0
  300 TR(IR)=TR(IR)+T(L)
   30 CONTINUE
C
C----SECTION 32-1
C****BEGIN LOOP TO DETERMINE PCT, THE PORTION THAT EACH EQUAL PRIORITY
C****RIGHT CAN BE MET GIVEN THE WATER SUPPLY AT ITS LOCATION IN RELATION
C****TO OTHER RIGHTS.  PCT IS EQUAL TO THE REMAINING NATURAL FLOW IN
C****EACH REACH (RF) DIVIDED BY THE CUMULATIVE TOTAL (CTR) OF ALL
C****RIGHTS IN AND UPSTREAM OF THE REACH BEING CONSIDERED.  TRF IS THE
C****FLOW REMAINING IN THE REACH AFTER DEDUCTING ALL UPSTREAM RIGHTS
C****WITH A PHYSICALLY POSSIBLE WATER SUPPLY (TRM).  IF EITHER TRF IS
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C****GREATER THAN ZERO (ENOUGH WATER EXISTS TO MEET ALL RIGHTS) OR CTR
C****IS ZERO (NO RIGHTS HAVE YET BEEN FOUND) THE PCT IS SET EQUAL TO 1.
C****THE USE OF TRM IS NOT ESSENTIAL, BUT IT SPEEDS CALCULATIONS.
C
      DO 31 L=1,NR
      IR=IORD(L)
      IF(IR.LE.0.OR.ICF(IR).EQ.2) GO TO 31
      CTR(IR)=CTR(IR)+TR(IR)
      TRM(IR)=TRM(IR)+TR(IR)
      TRF=RF(IR)-TRM(IR)
      IF(TRF.GE.0.0.OR.CTR(IR).LE.0.0) GO TO 32
      PCT(IR)=RF(IR)/CTR(IR)
      IF(RF(IR).LE.0.1) PCT(IR)=0.0
      TRM(IR)=TRM(IR)+TRF
      GO TO 33
   32 PCT(IR)=1.0
   33 IO=IDS(IR)
      IF(IO.EQ.0) GO TO 31
      CTR(IO)=CTR(IO)+CTR(IR)
      TRM(IO)=TRM(IO)+TRM(IR)
   31 CONTINUE
C
C----SECTION 33-1
C****VALUES OF PCT ARE NOW MODIFIED SUCH THAT PCT INCREASES IN DOWN-
C****STREAM ORDER.  IF A PCT VALUE IS SMALLER THAN A PCT VALUE IN ANY
C****REACH ABOVE IT, THE UPSTREAM PCT IS REPLACED BY THE DOWNSTREAM PCT.
C
      DO 84 K=1,NCR
      DO 34 L=1,NR
      IR=IORD(L)
      IF(IR.LE.0.OR.ICF(IR).EQ.2) GO TO 34
      IO=IDS(IR)
      IF(IO.EQ.0) GO TO 34
      IF(PCT(IO).LT.PCT(IR)) PCT(IR)=PCT(IO)
   34 CONTINUE
   84 CONTINUE
C
C----SECTION 33-2
C****BEGIN LOOP TO MEET RIGHT (OR LN RIGHTS IF MORE THAN ONE RIGHT HAS
C****THE SAME PRIORITY) FROM NATURAL FLOW.  RIGHTS ARE FIRST MULTIPLIED
C****BY PCT VALUES DETERMINED IN ABOVE LOOP.  PCT WILL BE LESS THAN ONE
C****IF THERE IS MORE THAN ONE RIGHT WITH THE SAME PRIORITY DATE AND
C****THESE RIGHTS MUST SHARE A LIMITED WATER SUPPLY.  THE MODIFIED
C****RIGHT (R) IS THEN LIMITED BY THE REMAINING DIVERSION (RD) AND THE
C****REMAINING NATURAL FLOW (RF) IN EACH DOWNSTREAM REACH.
C
C****A RESERVOIR RIGHT (JJ>0) IS LIMITED BY THE RIGHT'S REMAINING SPACE,
C****(RST-BRST).
C
C****A FLOW RIGHT (JJ<0) IS LIMITED BY THE REMAINING NATURAL FLOW (RF)
C****AND ALSO THE ACTUAL FLOW (AF).
C
C****THE RIGHT IS THEN SUBTRACTED FROM THE REMAINING FLOW (RF) IN EACH
C****DOWNSTREAM REACH, THE TOTAL RIGHT (T), AND THE REMAINING DIVERSION
C****(RD). WHEN THE THE REMAINING FLOW IN A REACH IS USED UP, THE
C****NUMBER OF THE RIGHT (LL) IS STORED IN THE IRT ARRAY.  IF IDB IS
C****POSITIVE, VALUES ARE PRINTED PRIMARILY FOR DEBUG PURPOSES.
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```
C
   29 DO 4 LL=L1,L2
      IC=JCNL(LL)
      IF(IC.LE.0) GO TO 4
      IR=IRCH(IC)
      IF(LN.EQ.1) PCT(IR)=1.0
      R=T(LL)*PCT(IR)
      IF(R.EQ.0.0) GO TO 48
      IF(RD(IC).LT.R.AND.JJ(LL).EQ.0) R=RD(IC)
      IG=IR
      IF(JJ(LL).LT.0) GO TO 160
    3 IF(R.GT.RF(IG)) R=RF(IG)
      IF(R.LE.0.0) GO TO 48
      IG=IDS(IG)
      IF(IG.NE.0) GO TO 3
      GO TO 161
  160 IF(R.GT.RF(IG)) R=RF(IG)
      IF(R.LE.0.0) GO TO 48
      GO TO 98
  161 IF(JJ(LL).EQ.0) GO TO 180
      LRRT=JJ(LL)
      RS=(RST(LRRT)-BRST(LRRT))/1.9835
      IF(RS.LE.0.01) T(LL)=0.0
      IF(R.GT.RS) R=RS
      IF(R.LE.0.0) GO TO 48
      BRST(LRRT)=BRST(LRRT)+(R*1.9835)
      LR=MR(LRRT)
      DRA(LR)=DRA(LR)+R
      GO TO 14
   98 CHK=AF(IR)-(RD(IC)*(-1.))
      IF(R.GT.CHK)  R=CHK
      PF(IR)=PF(IR)+R
      GO TO 14
  180 IF(IVO(LL).LE.0) GO TO 325
      L=IVO(LL)
      RR=(SVL(LL)-VRD(L))/1.9835
      IF(R.GT.RR) R=RR
      IF(L.EQ.10) GO TO 325
      IF(R.LE.0.0) GO TO 48
      VRD(L)=VRD(L)+(R*1.9835)
  325 IF(IR.NE.25.OR.IC.EQ.I22) GO TO 14
      IF(R.GT.RWCEX) R=RWCEX
      IF(R.LE.0.0) T(LL)=0.0
      IF(R.LE.0.0) GO TO 48
      RWCEX=RWCEX-R
   14 IG=IR
      IF(JJ(LL).LT.0) GO TO 162
   11 RF(IG)=RF(IG)-R
      IF(RF(IG).LE.0.1.AND.IRT(IG).EQ.NLK) IRT(IG)=LL
      IG=IDS(IG)
      IF(IG.NE.0) GO TO 11
      GO TO 163
  162 RF(IG)=RF(IG)-R
      IF(RF(IG).LE.0.1.AND.IRT(IG).EQ.NLK) IRT(IG)=LL
  163 T(LL)=T(LL)-R
      RD(IC)=RD(IC)-R
      IF(JJ(LL).GE.0) TD(IR)=TD(IR)+R
```

```
   48 IF(IDB.GT.0) WRITE(OUT,35)LL,RF(IR),RD(IC),
     1R,T(LL),PCT(IR)
   35 FORMAT(1H ,I5,4F10.3,F10.7)
    4 CONTINUE
C
C----SECTION 34-1, PART 1
C****IF THE REMAINING NATURAL FLOW IN THE LAST REACH HAS BEEN ENTIRELY
C****USED, DISCONTINUE RIGHT ALLOCATION.
C
      IF(RF(IFR).LE.0.1) GO TO 6
C
C----SECTION 34-1, PART 2
C****FOR MULTIPLE RIGHTS WITH EQUAL PRIORITY, JCOUNT IS THE NUMBER OF
C****PASSES USED TO ALLOCATE THE FLOW.  IF MORE THAN 20 PASSES ARE
C****MADE, THERE IS AN ERROR IN DATA OR THIS PROGRAM. PRINT DEBUG INFO
C****FOR FIVE MORE PASSES.  IF LN IS JUST ONE, SKIP NEXT TWO ROUTINES.
C
      IF(LN.EQ.1) GO TO 26
      JCOUNT=JCOUNT+1
      IF(JCOUNT.LE.20) GO TO 49
      IDB=1
      IF(JCOUNT.LE.25) GO TO 49
      WRITE(OUT,50) JDATE(L2),L2
   50 FORMAT(32H NUMBER OF ITERATIONS TO SATISFY,I10,23H RIGHTS HAS EXCE
     1EDED 25,15H - RIGHT NUMBER,I6)
      IDB=0
      GO TO 26
C
C----SECTION 34-1, PART 3
C****IF CALCULATED PCT VALUE OF ANY REACH IS BETWEEN ZERO AND ONE,
C****FURTHER ALLOCATION OF THE CURRENT LN RIGHTS IS NEEDED.  K THEN
C****BECOMES A '1' AND THE PROGRAM RETURNS FOR ANOTHER PASS THROUGH
C****THE SYSTEM TO CALCULATE NEW PCT VALUES.  OTHERWISE, CONTINUE.
C
   49 K=0
      DO 36 L=1,NR
   36 IF(PCT(L).GT.0.00001.AND.PCT(L).LT.0.999) K=1
      IF(K.EQ.1) GO TO 37
C
C----SECTION 35-1, PART 1
C****THE NEXT RIGHT TO ALLOCATE IS THE LAST RIGHT ALLOCATED PLUS 1.
C
   26 L1=L2+1
C
C----SECTION 35-1, PART 2
C****IF THERE ARE NO MORE RIGHTS, ALLOCATION IS COMPLETED, OTHERWISE
C****RETURN TO ALLOCATE NEXT RIGHT OR SERIES OF RIGHTS.
C
      IF(L1.GT.NLK) GO TO 6
      GO TO 24
    6 CONTINUE
C
C----SECTION 35-1, PART 3
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C****IF THE MINIDOKA PROJECT HAS A REMAINING DIVERSION NOT SATISFIED
C****BY NATURAL FLOW (MIL=0) AND TOTAL DIVERSIONS ARE LESS THAN 2000
C****CFS GREATER THAN THE TOTAL GAIN (IDT=0), USE THE MINIDOKA TO
C****MILNER GAIN (GMIL) TO MEET THE PROJECT'S DIVERSION.  ANY EXCESS
C****GAIN (FMIL), IS REALLOCATED TO RIGHTS BELOW MINIDOKA.
C
C      IF(IDT.LE.0.OR.MIL.GT.0) GO TO 138
C      IF(RD(I1).LT.0.5.OR.RD(I1).LE.GMIL) GO TO 139
C      RD(I1)=RD(I1)-GMIL
C      FMIL=0.0
C      AMIL=GMIL
C      GO TO 141
C 139 FMIL=GMIL-RD(I1)
C      AMIL=RD(I1)
C      RD(I1)=0.0
C 141 MIL=1
C
C----SECTION 36-1, PART 1
C****ADD EXCESS MINIDOKA TO MILNER GAIN TO REMAINING FLOW (RF) IN THAT
C****REACH.  THEN REDEFINE RIGHT PARAMETERS SO THAT FIRST NM RIGHTS ARE
C****ONLY THOSE FROM MINIDOKA TO MILNER.  REDEFINE IRT(9), THE LAST
C****RIGHT MET IN THAT REACH.
C
C      IF(FMIL.LE.0.0) GO TO 138
C      RF(9)=RF(9)+FMIL
C      AG(9)=FMIL
C      L1=1
C      NLK=NM
C      IRTP=IRT(9)
C      IRT(9)=NLK
C      DO 143 L=1,NM
C      J=JPM(L)
C      JDATE(L)=IDATE(J)
C      JCNL(L)=ICNL(J)
C      JJ(L)=JR(J)
C      T(L)=T(J)
C 143 CONTINUE
C
C----SECTION 36-1, PART 2
C****RETURN TO RIGHT ALLOCATION ROUTINE TO DISTRIBUTE FMIL TO MILNER
C****CANALS
C
C      GO TO 24
C
C----SECTION 36-1, PART 3
C****ALLOCATION IS COMPLETED FOR ONE DAY AT THIS POINT.
C
  138 CONTINUE
C
C----SECTION 36-1, PART 4
C****COMPUTE DAILY INDIAN VOLUME USING THE FLOW AT THE
C****DROP ON THE RESERVATION CANAL
C
      IF(VRD(10).LT.100000) THEN
        VOLDROP=AF(44)-DIV(I92)
        VRD(10)=VRD(1D)+(VOLDROP*1.9835)
        ENDIF
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```
      IF(VRD(10).GE.100000) VRD(10)=100000
C
C----SECTION 37-1, PART 1
C****CORRECT FALL RIVER DIVERSIONS AND APPROPRIATE FLOWS FOR FALLS
C****RIVER NATURAL FLOW DIVERTED THRU CROSSCUT CANAL TO FALL RIVER
C****CANAL LAND.
C
      CORNF=RD(I17)-DIV(I9)
      IF(CORNF.LT.0.0) THEN
          TD(16)=TD(16)+CORNF
          RF(16)=RF(16)-CORNF
          TD(17)=TD(17)-CORNF
          ENDIF
C
C----SECTION 37-1, PART 2
C****CORRECT REACH 10 & 17  FOR DOWNSTREAM DIVERSION OF NATURAL FLOW BY
C****FEEDER CANAL SHARING ST ANTHONY UNION RIGHT.
C
      CORNF=RD(I18)-DIV(I19)
      IF(CORNF.LT.0.0) THEN
          TD(17)=TD(17)+CORNF
          RF(17)=RF(17)-CORNF
          TD(10)=TD(10)-CORNF
          ENDIF
C
C----SECTION 37-1, PART 3
C****CORRECT REACH 5 & 36  FOR DOWNSTREAM DIVERSION OF NATURAL FLOW BY
C****PORTER CANAL SHARING GREAT WESTERN & PORTER RIGHT.
C
      CORNF=RD(I15)-DIV(I16)
      IF(CORNF.LT.0.0) THEN
          TD(5)=TD(5)+CORNF
          RF(5)=RF(5)-CORNF
          TD(36)=TD(36)-CORNF
          ENDIF
C
C----SECTION 37-1, PART 4
C****CORRECT REACHES 4, 32, 21, 5, AND 36 FOR DOWNSTREAM DIVERSION OF
C****NATURAL FLOW BY CANALS/PUMPS SHARING BURGESS CANAL RIGHT.
C
      CORNF=RD(I51)-DIV(I52)-DIV(I55)-DIV(I56)-DIV(I57)
      IF(CORNF.LT.0.0) THEN
          TD(4)=TD(4)+CORNF
          RF(4)=RF(4)-CORNF
          RF(32)=RF(32)-CORNF
          RF(21)=RF(21)-CORNF
          RF(5)=RF(5)-CORNF
          TD(36)=TD(36)-CORNF
          ENDIF
C
C----SECTION 37-1, PART 5
C****CORRECT REACH 31 & 6  FOR DOWNSTREAM DIVERSION OF NATURAL FLOW BY
C****P HILL PUMP SHARING SNAKE RIVER VALLEY CANAL RIGHT.
C
      CORNF=RD(I53)-DIV(I54)
      IF(CORNF.LT.0.0) THEN
          TD(31)=TD(31)+CORNF
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            RF(31)=RF(31)-CORNF
            TD(6)=TD(6)-CORNF
            ENDIF
C
C----SECTION 37-1, PART 6
C****CORRECT REACHES 15, 16, 30 & 30  FOR DIVERSION OF NATURAL FLOW BY
C****STURM 1&2, W C DAVIS, EGBERT # 5 & 2, D LARSON, L FRANSEN, H GRIFFEL,
C****AND C ATCHELY # 1 & 2 PUMPS SHARING MARYSVILLE CANAL RIGHT.
C
       CORNF=RD(I42)-DIV(I43)-DIV(I44)-DIV(I67)-DIV(I78)-DIV(I79)
      1-DIV(I80)-DIV(I81)-DIV(I82)-DIV(I83)-DIV(I84)
       IF(CORNF.GE.0.0) GO TO 124
       TD(15)=TD(15)+CORNF
       RF(15)=RF(15)-CORNF
       CORNF=CORNF*(-1.0)
       CORDV=DIV(I67)+DIV(I43)+DIV(I44)+DIV(I82)+DIV(I83)+DIV(I84)
       IF(CORDV.GE.CORNF) GO TO 361
       CORNF=CORNF-CORDV
       TD(16)=TD(16)+CORDV
       RF(16)=RF(16)-CORDV
       CORDV=DIV(I81)
       IF(CORDV.GE.CORNF) THEN
            TD(30)=TD(30)+CORNF
            RF(30)=RF(30)-CORNF
            GO TO 124
       ELSE IF(CORDV.LT.CORNF)THEN
            TD(30)=TD(30)+CORDV
            CORNF=CORNF-CORDV
            TD(13)=TD(13)+CORNF
            RF(13)=RF(13)-CORNF
            RF(30)=RF(30)-CORDV
            END IF
       GO TO 124
  361  TD(16)=TD(16)+CORNF
  124  CONTINUE
C
C----SECTION 37-1, PART 7
C****CORRECT REACH 8 & 9  FOR DOWNSTREAM DIVERSION OF NATURAL FLOW BY
C****PUMPS SHARING MINIDOKA NORTHSIDE CANAL RIGHT.
C
       CORNF=RD(I1)-DIV(I68)-DIV(I69)-DIV(I70)-DIV(I71)-DIV(I72)
       IF(CORNF.LT.0.0) THEN
            TD(8)=TD(8)+CORNF
            RF(8)=RF(8)-CORNF
            TD(9)=TD(9)-CORNF
            END IF
C
C----SECTION 37-1, PART 8
C****CORRECT REACHES 6, 22, 38, 39, 7, AND 8 FOR DIVERSION OF
C****RECHARGE WATER FOR SWID THROUGH MILNER LOW LIFT, TWIN FALLS
C****SOUTHSIDE AND MINIDOKA SOUTHSIDE.  CORRECT ONLY WHEN DIVERTING
C****THROUGH TFSS AND MINIDOKA IRRIGATION.
C
       IF(VRD(12).GE.6725) GO TO 324
       IF(DIV(I1).LT.51.933.AND.DIV(I8).LT.25.967) GO TO 324
       IF(DIV(I1).GE.51.933) THEN
        TD(6)=TD(6)-51.933
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```
          TD(8)=TD(8)+51.933
          RF(6)=RF(6)+51.933
          RF(22)=RF(22)+51.933
          RF(38)=RF(38)+51.933
          RF(39)=RF(39)+51.933
          RF(7)=RF(7)+51.933
          RF(8)=RF(8)+51.933
          END IF
C        IF(DIV(I8).LT.38.95.AND.DIV(I86).LT.38.95) GO TO 324
         IF(DIV(I8).GE.25.967) THEN
          TD(6)=TD(6)-25.967
          TD(8)=TD(8)+25.967
          RF(6)=RF(6)+25.967
          RF(22)=RF(22)+25.967
          RF(38)=RF(38)+25.967
          RF(39)=RF(39)+25.967
          RF(7)=RF(7)+25.967
          RF(8)=RF(8)+25.967
          END IF
C        IF(DIV(I86).GE.19.47) THEN
C         TD(6)=TD(6)-19.47
C         TD(8)=TD(8)+19.47
C         RF(6)=RF(6)+19.47
C         RF(22)=RF(22)+19.47
C         RF(38)=RF(38)+19.47
C         RF(39)=RF(39)+19.47
C         RF(7)=RF(7)+19.47
C         RF(8)=RF(8)+19.47
C         END IF
         RD(I1)=RD(I1)+RD(I85)*.667
         RD(I8)=RD(I8)+RD(I85)*0.333
C        RD(I86)=RD(I86)+RD(I85)*0.25
  324    CONTINUE
         RD(I85)=0
C
C----SECTION 37-2
C****CORRECT REMAINING DIVERSIONS TO WILLOW CREEK CANALS WHICH RECEIVE
C****WATER FROM THE EAGLE ROCK CANAL.  THE CREDIT FOR THE EAGLE ROCK
C****FLOW (ERC) IS DISTRIBUTED IN DOWNSTREAM ORDER TO ALL CANALS EXCEPT
C****WILLOW (I21) AND SAND (I20) CREEKS AND THE IDAHO DIVERSION (I22).
C****THEN THE REMAINDER (RERC) IS DISTRIBUTED TO SAND AND WILLOW CREEK
C****PROGRESSIVE DIVERSIONS.  THIS PROCEDURE PREVENTS THESE REMAINING
C****DIVERSIONS FROM APPEARING AS STORAGE DIVERSIONS.
C
         RERC=ERC
         DO 319 L=I38,I39
         IF(L.EQ.I20.OR.L.EQ.I21.OR.L.EQ.I22) GO TO 319
         RD(L)=RD(L)-RERC
         IF(RD(L).GE.0.0) GO TO 320
         DM(L)=DM(L)-RERC-RD(L)
         RERC=RD(L)*(-1.0)
         RD(L)=0.0
  319    CONTINUE
         L=I20
  322    RD(L)=RD(L)-RERC
         IF(RD(L).GE.0.0) GO TO 320
         DM(L)=DM(L)-RERC-RD(L)
```