7 UPDATE PROGRAM

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The Ground-Water Site-Inventory Update program is used to update the GWSI Sitefile and ground-water data tables from transaction files generated by the Edit program (*Chapter 6*).

7.1 Introduction

The Ground-Water Site-Inventory Update program is used to update the GWSI Sitefile and ground-water data tables. This procedure can only be run after successful completion of the Edit program.

7.2 Program Operation

The Update procedure adds, modifies, and deletes records for the Sitefile and ground-water data tables.

The Update procedure may be selected from the GWSI Main Menu using Option 4 for interactive processing and Option 14 for batch processing. Batch processing is recommended for medium to large amounts of data. The Update procedure must be run from the directory containing the output files from Edit.

The only interactive input required by the Update procedure is the batch code used in the Edit procedure. After inputting the batch code, the procedure then verifies that the transaction files exist and opens them. If there are no transaction files available, the procedure tells you and terminates processing. At this point, verify that the batch code was entered correctly and that you are attached to the appropriate directory. Run the procedure again with the correct batch code or in the correct directory if this caused Update to fail.

7.2.1 Update Files

Listed below are the input (transaction) and output (error) file names and a description of each file. **Note: "xx" indicates the database number (leading zeros included) and "a" indicates the batch code entered when the program was first initiated. No attempt should be made to modify any of the transaction files with an editor; modification of these files is the most likely source of errors reported in the upt.err.dbxx.a error file and may result in serious damage to the database.**

File Name	Description
site.tran.dbxx.a	Contains Site File transaction records that successfully pass the editgw procedure.
gw.cons.tran.dbxx.a	Contains Construction transaction records that successfully pass the editgw procedure.
gw.misc.tran.dBxx.a	Contains Miscellaneous transaction records that successfully pass the editgw procedure.
gw.disc.tran.dbxx.a	Contains Discharge transaction records that successfully pass the editgw procedure.
gw.hydr.tran.dbxx.a	Contains Hydraulics transaction records that successfully pass the editgw procedure.
gw.geoh.tran.dbxx.a	Contains Geohydrologic transaction records that successfully pass the editgw procedure.
gw.lev.tran.dbxx.a	Contains Water-Level transaction records that successfully pass the editgw procedure.
gw.obs.tran.dbxx.a	Contains Observation well{ XE "Recharge site" } heading transaction records that successfully pass the editgw procedure.
gw.upterr.dbxx.a	Listing of fatal and warning messages indicated by the uptgw procedure. This is the only user output file for uptgw.

7.2.2 Error Checks

The Update program performs the same validation checks as the Edit Program, which includes the following functions:

- Performs logical checks of the data:

- Dates:

  - ✓ Compares all dates with the 'Date Well Constructed' (C21) to make sure the entered date is after C21.
  - ✓ Future dates are not allowed.
  - ✓ Dates prior to January 01, 1900 are not allowed.

- Performs logical checks between similar data types; e.g. Depth of Well (C28) cannot be deeper than Depth of Hole (C27).
- Validates data using reference lists. Many of the GWSI components have associated reference lists that limit what can be entered. Data validation for these components checks to make sure that the data satisfy ONE of the following conditions:

    ✓ data are within a list of values.
    ✓ data are within a range of values.
    ✓ data conform to a specific format.

- Verifies that a record with the same site ID does not exist before one is added.
- Verifies that a record does exist before a modify or delete transaction is attempted.
- Verifies that a record exists in the Sitefile before adding other record types associated with that site.
- Verifies that parent records exist before adding lower-level records.

7.2.3 Normal Operation of Update

Normal operation of Update should only require initiation of Update from the GWSI Main Menu and the entry of the batch ID assigned at the Edit step. No error messages should be generated in upt.err.dbxx.a. The following is an example using Option 4 (Update GW Data), interactive processing of ground-water data.

```
**********************************************************************
*   Main Menu for WRD GWSI Database # 01  --  NWIS-4_4_1-4
**********************************************************************


Code   Program Description                Code   Program Description
----   ------------------                ----   ------------------
  1 : Query Entry                         11 : Generate Field Forms
  2 : Screen Entry
  3 : Edit GW Data (from 1-2)             12 : QW Entry
  4 : Update GW Data (from 3)             13 : Edit GW Data in Batch
  5 : Update Sitefile Only (runs 2,3,4)   14 : Update GW Data in Batch
  6 : Retrieval/Tables                    16 : Plot Hydrographs
  7 : Copy File (from 1-2) to Directory watin


 10 : Change GW/QW Database #


                                          91 : Utilities Menu
 92 : Database Check Menu                  93 : List Utilities Menu
 96 : Documentation Menu                   97 : Local Menu

 98 : Exit to Previous Menu                99 : Exit to UNIX

Enter UNIX Command or Select Program Code: 4

Your current GW database is number 01

                  ***** Loading Edit Tables *****

                      ***** Please Wait *****
```

```
      NWIS UPDATE PROGRAM
      VERSION NWIS-4_4_0-20040329

      Database Number    1


ENTER BATCH CODE FROM EDIT ROUTINE a

      Sitefile transactions will be processed
      Construction file transactions will be processed
      Discharge file transactions will be processed
      Water level file transactions will be processed

   Updates processing, please be patient

UPDATE PROCESSING COMPLETED--CHECK upt.err.db01.a
      for ERROR MESSAGES and STATISTICS

   NUMBER OF CONSTRUCTION RECORDS ADDED =      6
   NUMBER OF DISCHARGE RECORDS ADDED =      1
   NUMBER OF WATER LEVEL RECORDS ADDED =      2

Press <Enter> for Menu or Enter UNIX Command:
```

Ground-Water Update

After the Update process has completed, the upt.err.db*xx.a* file should be reviewed to make sure that no errors occurred during the Update process. Since Update uses the same validation procedures that Edit uses, there should be no errors reported; an example of a normal upt.err.db*xx.a* file is shown below.

```
Press <Enter> for Menu or Enter UNIX Command: more upt.err.db01.a
   NUMBER OF SITES ADDED =       1
   NUMBER OF CONSTRUCTION RECORDS ADDED =      6
   NUMBER OF DISCHARGE RECORDS ADDED =      1
   NUMBER OF WATER LEVEL RECORDS ADDED =      2

Press <Enter> for Menu or Enter UNIX Command:
```

Normal upt.err.dbxx.a File

7.2.4 Abnormal Operation of Update

If the upt.err.db01.a file does contain errors, there are two likely sources:

- Errors reported in the Edit error file were not corrected prior to running Update.
- Modifications were made to the transaction files listed in section 7.2.1 prior to running Update.

If the errors resulted from running Update without correcting errors in the Edit step, the user should go back to the input file used by Edit and resolve the problems. Once the problems have been fixed, re-run Edit and Update.

If the error messages resulted from errors introduced into the transaction files by modifying them, the best course of action is to either create a new input file using query or screen entry, or edit the existing input file with the desired updates and run Edit. Once an error-free Edit is completed, run the Update program to update the database.

If neither of these appears to be the source of the error messages, contact NWIS at headquarters.