

CHAPTER 5

Data Entry, Import and Export

HEC-DSSVue has several components to enter data into HEC-DSS files. You can enter data manually, paste data from the clipboard into a data entry form, or import data from a variety of formats. The formats include Microsoft Excel spreadsheet, the National Center for Climatic Data (NCCDC), or directly from web pages, such as from the USGS NWIS database or the North Carolina CRONOS database.

Most of the import functions are provided as "plug-ins". Plug-ins are separate components that communicate with HEC-DSSVue and can be added, removed, or updated by the user. Plug-ins are added or updated by simply copying the appropriate plug-in .jar file to the *Plugins* directory. Generally, a plug-in is accessible from a menu option and is not apparent to the user that a function is being provided by a plug-in instead of HEC-DSSVue. Plug-ins can be updated without having to update the HEC-DSSVue program itself. Refer to the HEC-DSSVue plug-ins web page for updates at: <http://www.hec.usace.army.mil/software/hec-dss/plugin.htm>

HEC-DSSVue can also import and store virtually any other kind of file in HEC-DSS files, including .jpg, .pdf, .doc, and .mp3 files. When you select the pathname for a generic file and "plot" or "tabulate" the file, HEC-DSSVue will launch the native application associated with the file extension. For example, if you select a .doc file and then press the plot or tabulate button, Microsoft Word will be launched to read the file.

You can also import files with the appropriate extension by simply "dragging and dropping" them from Windows Explorer onto HEC-DSSVue with an open HEC-DSS file. For example if you have SHEF data in a file with an extension name of ".shef", you can simply grab that file in Windows Explorer and drag it on top of HEC-DSSVue and it will be automatically imported.

HEC-DSSVue can also export data to a variety of formats, depending on which plug-ins are loaded. For example, if you have time-series data, you can select your pathnames. From the HEC-DSSVue main window, from the **Data Entry** menu, point to **Export**, click **SHEF**. From the **Save** browser choose the file you want to export to, and your data will be written in SHEF format to that file.

Data Entry, Import and Export capabilities are accessible from the **Data Entry** menu.

5.1 Entering Data Manually

Time series data, paired data and text data can be manually entered using the Manual Data Entry Editors available from the **Data Entry** menu. The following sections discuss all options in detail.

5.1.1 Entering Time Series Data Manually

To enter time series data manually:

1. From the **Data Entry** menu, click **Manual Time Series**. The **Time Series Data Entry** dialog box will open (Figure 5.1).

Ordinate	Date	Time	Value
1	20Jul2005	24:00	
2	21Jul2005	24:00	
3	22Jul2005	24:00	

Figure 5.1 Time Series Data Entry Dialog Box

2. Type the **Pathname Parts** into the A, B, C, and F boxes, then select the appropriate time interval for the E box. The complete pathname will automatically appear in the **Pathname** box. Alternatively, you can enter the pathname into the **Pathname** box

and the parts will appear in the **Pathname Parts** boxes. You cannot enter the "D" (date) part, as this is set according to your **Start Date**.

3. Enter the **Start Date** (e.g., *25Mar2002*) and **Start Time** (e.g., *1400*).
4. Enter the **Units** (e.g., *CFS*).
5. From the **Type** list, select a data type. Options are **PER-AVER**, **PER-CUM**, **INST-VAL**, and **INST-CUM**.
6. For regular interval time series data, the **Date/Time** cells in the table will fill automatically, starting with the start date and time you entered. For irregular interval data, you will need to enter a date and time for each data value.
7. Type the data values into the **Value** column.
8. To view the data in plot form, click **Plot**.
9. To graphically edit the data you have entered, click **Graphically Edit**.
10. To save the new time series record, click **Save**.

You can paste data on the clipboard from another application by clicking **Paste**. This allows you to copy data from various applications like Microsoft Excel into HEC-DSS. When you paste data into HEC-DSS, the tab characters and carriage return characters in the program that you are copying from must match the data entry table. Tab characters move to the next column to the right, while carriage return characters move to the next row down. These are the default characters used in Excel.

For regular interval time series data, the data must be in a columnar format (e.g., a column from Microsoft Excel) and should contain data values only. For irregular interval data, the date and time must precede each data value, with tab characters separating them. For paired data, all values for each ordinate must be separated by a tab character. To enter data using the paste capability:

1. Complete steps 1 through 5 above.
2. Select your data set from the other applications and **Copy** it to the clipboard.
3. Click **Paste**, you should see the data from the clipboard appear in the table.

You can also automatically generate regular-interval time series data. This will fill in a single number for a time window. To generate this data:

1. Complete steps 1 through 5 above.
2. Select the **Automatic Generation** tab.
3. Enter the **End Date** and **End Time** for the data.
4. Enter the **Fill Value**, which is the single value for the specified time window.

- Click **Generate**, this will return you to the **Manual Entry** tab, where you can plot, save, or further edit the data.

5.1.2 Entering Paired Data Manually

To enter paired data manually:

- From the **Data Entry** menu, click **Manual Paired Data**. The **Manual Paired Data Entry** dialog box (Figure 5.2) will open.

Manual Paired Data Entry

Pathname Parts

A: WHITE B: OAKVILLE C: STAGE - DAMAGE

D: E: 2020 F: PLAN A

Pathname: /WHITE/OAKVILLE/STAGE-DAMAGE/2020/PLAN A/

Number of Curves: 2 Horizontal Axis: X Y

X Units: feet Y Units: \$1000

X Type: Linear Y Type: Linear

Paste Add Rating Table Data

Ordinate	X parameter	0	1
Labels		RESIDENTIAL	COMMERCIAL
1	0	0	0
2	12.5	2.6	0
3			
4			

Plot Save Cancel

Figure 5.2 Manual Paired Data Entry Dialog Box

- Type the **Pathname Parts** into the A, B, C, D, E, and F boxes. The complete pathname will automatically appear in the **Pathname** box. You can also enter the pathname into the **Pathname** box; the parts will appear in the **Pathname Parts** boxes. Be sure the "C" part contains both an X parameter and a Y parameter, separated by a hyphen (e.g., *STAGE-FLOW* or *ELEV-DAMAGE*).

3. From the **Number of Curves** list select the number of curves to be entered. Also, from **Horizontal Axis**, select **X** or **Y**.
4. In the **X Units** box, enter the units for *X* (belonging to the first parameter) and in the **Y Units** box, enter the units for *Y* (belonging to the second parameter).
5. From the **X Type** and **Y Type** lists, select the type for the respective parameters. Available options are **Linear**, **Log**, and **Probability**.
6. In the table, the *Y* parameter columns will split into individual columns according to the number of curves you specified.
7. Enter the data values into the **X parameter** and **Y parameter** columns.
8. To view the data in plot form, click **Plot**.
9. To save the new time series record, click **Save**.

You can paste data on the clipboard from another application by clicking **Paste**. This allows you to copy data from various applications like Microsoft Excel into HEC-DSS. When you paste data into HEC-DSS, the tab characters and carriage return characters in the program that you are copying from must match the data entry table. Tab characters move to the next column to the right, while carriage return characters move to the next row down. These are the default characters used in Excel. For paired data, all values for each ordinate must be separated by a tab character with a carriage return character at the end of each row. To enter data using the paste capability:

1. Complete steps 1 through 6 above.
2. Select your data set from the other applications and **Copy** it to the clipboard.
3. Click **Paste**, you should see the data from the clipboard appear in the table.

5.1.3 Manual Text Entry

HEC-DSS has a text convention format. You can enter data by manual text data entry and type or paste text into the text editor, or you can import a text file. You cannot import text files into the HEC-DSS text format by dragging and dropping a .txt file; this will save a .txt file in the generic file format.

To enter text data manually:

1. From the **Data Entry** menu, click **Manual Text**. A dialog box will open (see Figure 5.3, page 5-6).
2. Type or paste the text data into the text dialog box. You can change the font, but the font will not be stored with the text.

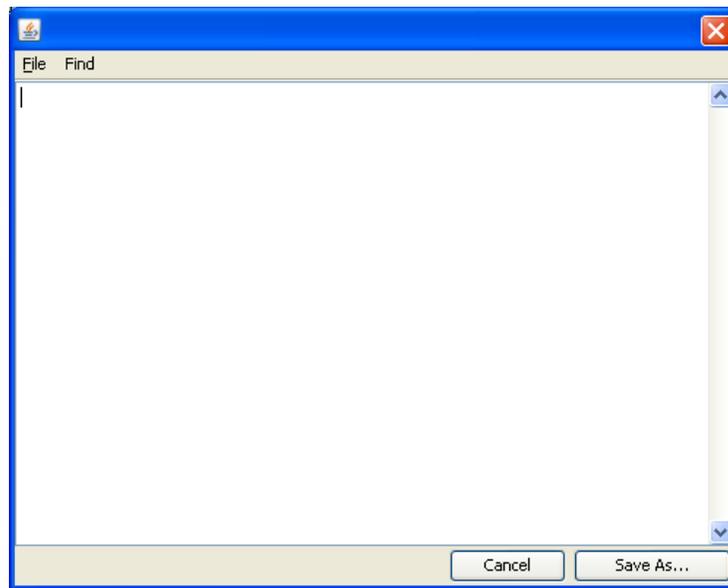


Figure 5.3 Dialog Box used to Enter Text

3. From the **File** menu you can insert a text file (.txt). You can also save your text as a .txt file, save as an HEC-DSS file, or print your file (Figure 5.4). You can also change the font of the text, but that will not be retained. (**Note:** You can also import text data directly from a .txt file from the HEC-DSSVue main window. From the **Date Entry** menu, point to **Import**, click **Text from File**.)
4. After the text has been entered, click **Save As** to save the data to a DSS file. Also, from the **File** menu you can click **Save** or **Save As** to save the data as a DSS file. Either method opens the **Save As** dialog box (Figure 5.5).

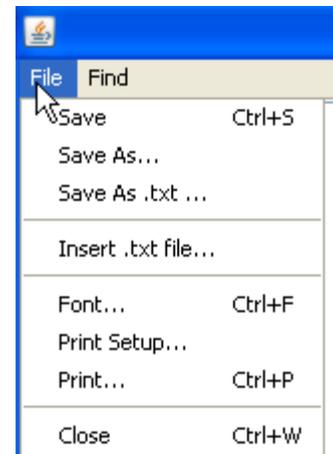


Figure 5.4 File Menu

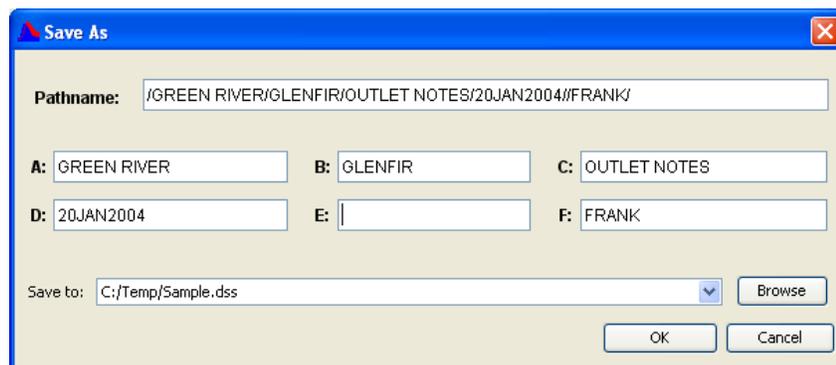


Figure 5.5 Save As Dialog Box

5. Enter the **Pathname Parts** into the A, B, C, D, E, and F boxes. The complete pathname will automatically appear in the **Pathname** box. You can also enter the pathname into the **Pathname** box; the parts will appear in the **Pathname Parts** boxes (see Figure 5.5, page 5-6).
6. To save the record, click **OK**.

5.2 Import/Export Files

You can import and export text files, image files and other types of files into HEC-DSS files from the **Import** or **Export** menu items on the **Data Entry** menu.

5.2.1 Import Text Files

HEC-DSS has a text convention format. You can enter data by manual text data entry and type or paste text into the text editor, or you can import a text file. You cannot import text files into the HEC-DSS text format by dragging and dropping a .txt file; this will save a .txt file in the generic file format.

To import a text file:

1. From the **Data Entry** menu, point to **Import**, click **Text from File**.
2. An **Open** browser will be open (Figure 5.6). Navigate to the directory and file you wish to import. Select the file and click **Open**, you can only import non-formatted regular text.

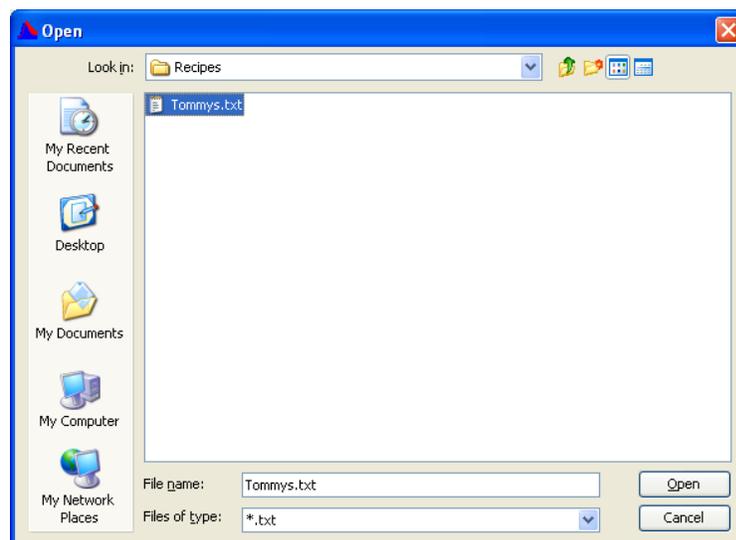


Figure 5.6 Open Browser

3. A dialog box will open (Figure 5.7) displaying the contents for the selected file. You can make any changes you want to the text.

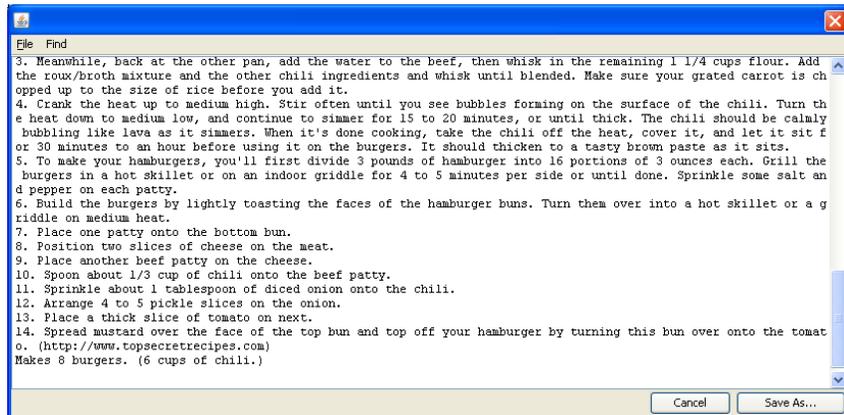


Figure 5.7 Dialog Box for Importing Text

4. After the text has been entered, click **Save As** to save the data to a DSS file. Also, from the **File** menu you can click **Save** or **Save As** to save the data as a DSS file. Either method opens the **Save As** dialog box (see Figure 5.5, page 5-6).
5. Enter the **Pathname Parts** into the A, B, C, D, E, and F boxes. The complete pathname will automatically appear in the **Pathname** box. You can also enter the pathname into the **Pathname** box; the parts will appear in the **Pathname Parts** boxes (see Figure 5.5, page 5-6).
6. To save the record, click **OK**.

5.2.2 Exporting Text Files

To export to a text file:

1. You can export data to a text file by selecting the pathname for the data set that you want to export, from the **Data Entry** menu, point to **Export**, click **Export to File(s)**. You can only export one text data set at a time for this convention. (For image and generic files you can export several at one time.) This menu option will only appear for text, image and generic files.
2. A **Save** browser will open (see Figure 5.8, page 5-9). Navigate to the directory where you want the file saved, in the **File name** box enter the name of the file, and click **Save**.

5.2.3 Import Image and Generic Files

HEC-DSS has a convention for storing image (photos, etc.) and other files in a generic file format. For this format, the pathname will have a C part

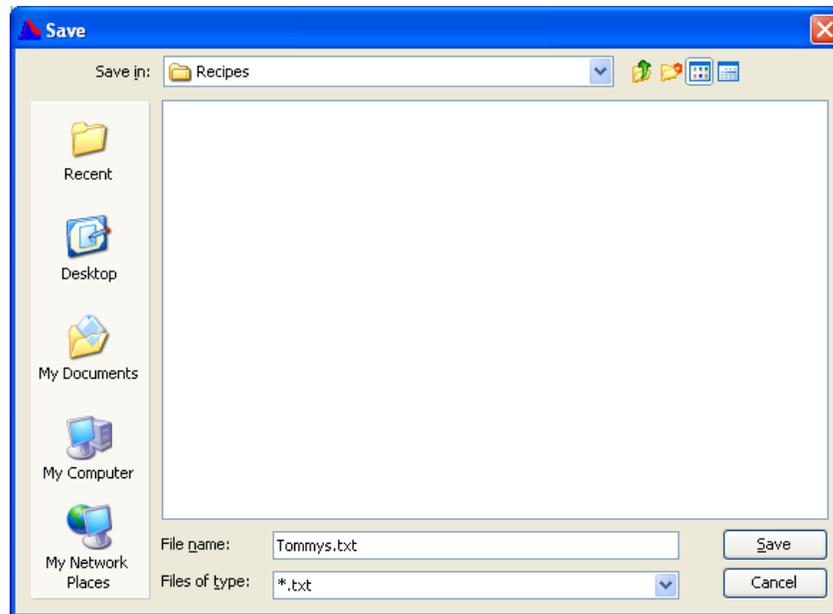


Figure 5.8 Save Browser

that is the name of the file (without directory), a D part that is either "IMAGE" or "FILE", and an E part that is the extension of the file (e.g., "JPG" or "PDF"). For more information, refer to Chapter 1, Section 1.2.3.

When you select images or files (generic type) in HEC-DSSVue and select either "plot" or "tabulate", HEC-DSSVue will launch a photo viewer for image data, or launch the application associated for that file type. For example, if the file type is ".pdf", HEC-DSSVue will launch Adobe Acrobat with a copy of that file loaded into it.

The easiest way to import both image and generic files is to drag them from Windows Explorer and drop them into the main screen of HEC-DSSVue with an opened HEC-DSS file. A **Save As** dialog box will open (see Figure 5.5, page 5-6) where you can enter the pathname parts. You can also import images and generic files from the **Data Entry** menu.

To import image or generic files into HEC-DSS:

1. From the **Data Entry** menu, point to **Import**, either click **Images** or **Files (Generic type)**.
2. An **Open** browser will open (see Figure 5.9, page 5-10). Navigate to the directory and select the files you wish to import. Select the files and click **Open**. You can import multiple files at one time.
3. The **Save As** dialog box will open (see Figure 5.5, page 5-6). Enter the **Pathname Parts** into the A, B, and F boxes. The complete pathname will automatically appear in the **Pathname** box. You can also enter the pathname into the **Pathname** box; the

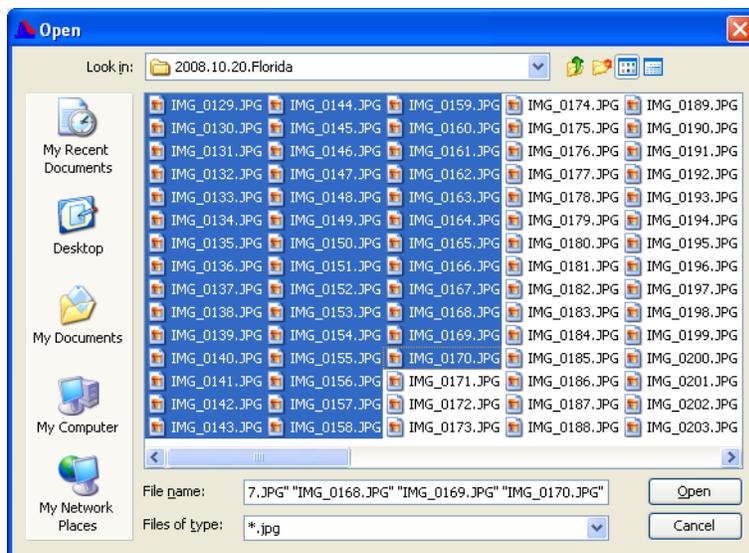


Figure 5.9 Open Browser – Importing Images and Generic Files

parts will appear in the **Pathname Parts** boxes (see Figure 5.5, page 5-6).

4. To save the records, click **OK**. A confirmation window will appear, see Figure 5.10.

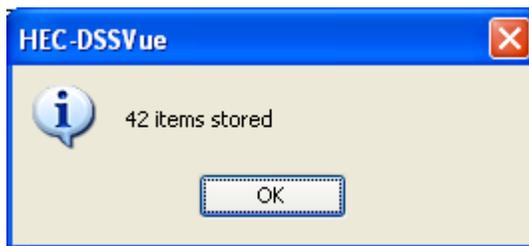


Figure 5.10 Save Files Confirmed

Or, alternatively you can import image and generic files by:

5. From Windows Explorer (Figure 5.11), select the files that you wish to import.

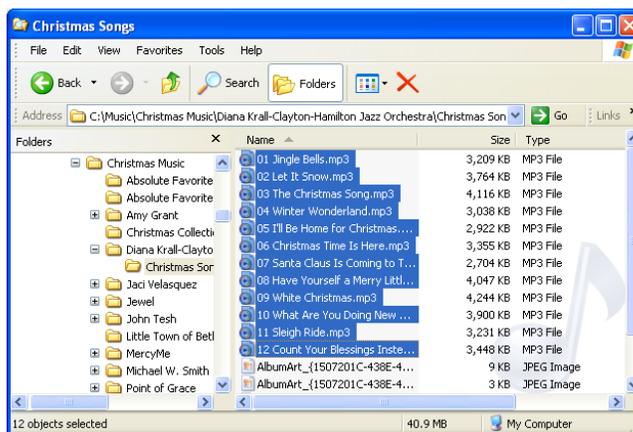


Figure 5.11 Example of Data Selection for Drag and Drop

6. "Drag" the files onto the main HEC-DSSVue screen (with a HEC-DSS file open).
7. The **Save As** dialog box will open (see Figure 5.5, page 5-6). Enter the **Pathname Parts** into the A, B, and F boxes. The complete pathname will automatically appear in the **Pathname** box. You can also enter the pathname into the **Pathname** box; the parts will appear in the **Pathname Parts** boxes.
8. To save the records, click **OK**, a message window will open (see Figure 5.10, page 5-10).
9. The actual file names will be displayed in the C part, as shown in Figure 5.12.

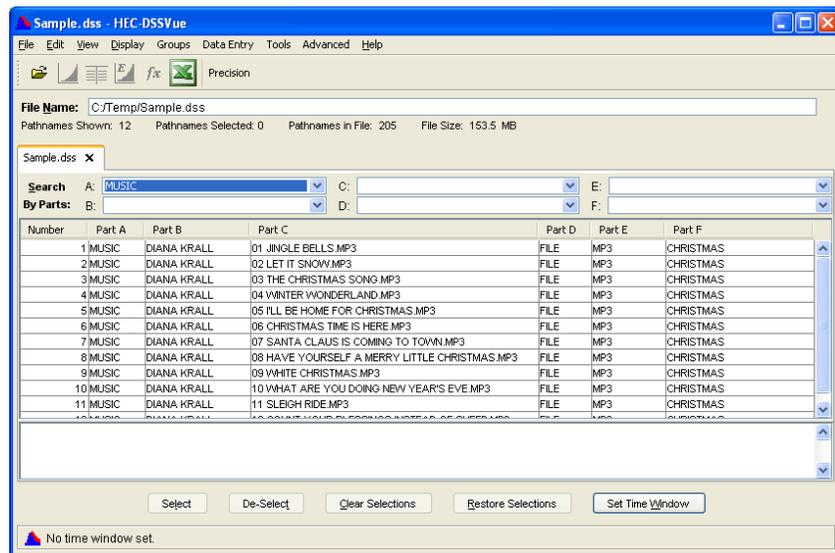


Figure 5.12 Imported Filenames Located in the C Part

5.2.4 Exporting Image and Generic Files

You can export image and generic files by:

1. Select the pathnames for the data sets that you want to export, from the **Data Entry** menu, point to **Export**, click **Export to File(s)**.
2. A **Save** browser will open (see Figure 5.8, page 5-9); navigate to the directory you want to save the file, click **Save**. The images or files will be saved with their original names. A confirmation window will open (Figure 5.13).

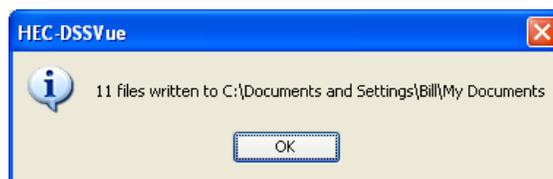


Figure 5.13 Saving Files Confirmation

5.3 Importing and Exporting SHEF Data

The Standard Hydrologic Exchange Format (SHEF) is a text based format developed by the National Weather Service (NWS) for exchange of real time operational data with other agencies. SHEF was adopted by mutual agreement for exchange of data between NWS and the Corps of Engineers.

The import/export SHEF features are compiled into HEC-DSSVue; they are not plug-ins and cannot be updated or removed from the program.

5.3.1 SHEF Table Files

The implementation of the import and export of SHEF data in HEC-DSSVue is based on the prior existing programs SHFDSS and DSSSHF. These programs, and their implementation in HEC-DSSVue, use three reference tables: one for defining SHEF parameter codes (SHEFPARAM), one for relating SHEF physical element (PE) codes to DSS parameters (*shfdssp*), and one for relating station identifiers to observation frequencies and pathname parts (*shfdsss*). These files are required to access the import/export capability; sample files are distributed with HEC-DSSVue.

The SHEF sample table files are distributed with HEC-DSSVue and stored in the users application directory under HEC-DSSVue (the location of the application directory is dependent on the operating system). You can browse to these files and edit the files, from the **Advanced** menu, click **Program Options**, the **Options** dialog box will open (Figure 5.14). Click the **SHEF** tab, information from the dialog box will show the location of the SHEF sample table files. If you have existing files from SHFDSS, you can use those in HEC-DSSVue.

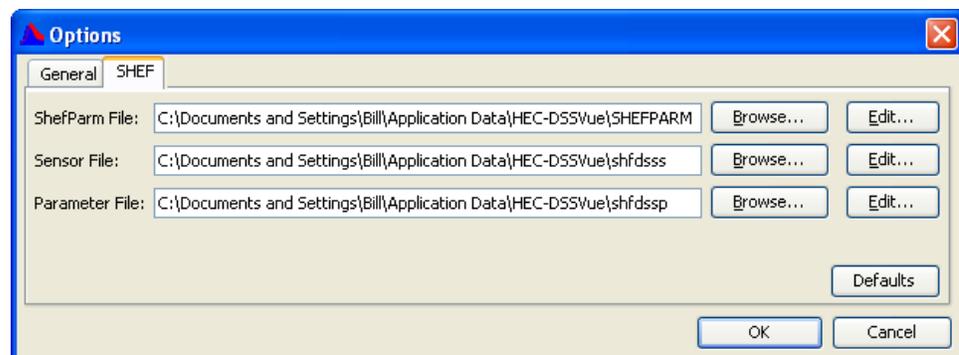


Figure 5.14 Options Dialog Box – SHEF Tab

SHEFPARM

The SHEFPARM file contains SHEF PE (Physical Element) codes and the metric - English conversion factor. Generally, the supplied file should be sufficient unless newer PE codes are being used. To edit the SHEFPARM file, from the **Options** dialog box, with the SHEF tab clicked (see Figure 5.14, page 5-12), click **Edit** that is next to the **ShefParm File** box. A dialog box will open (Figure 5.15), which will allow the user to edit the SHEFPARM file. In this table, the first column contains the PE code and the second column contains the Metric to English conversion factor, if there is no factor, set this cell to 1.0.

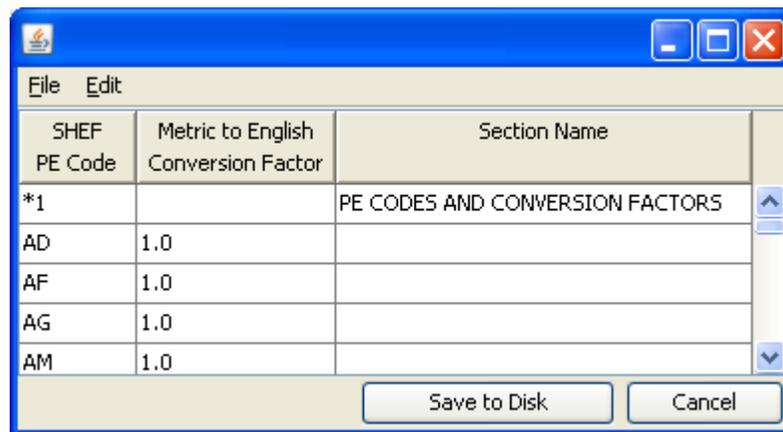


Figure 5.15 SHEFPARM File Dialog Box

Parameter File – shfdssp

The parameter file links the HEC-DSS "C" part (the parameter), the data units, and type to the SHEF parameter (PE). To edit the parameter file, from the **Options** dialog box, with the SHEF tab clicked (see Figure 5.14, page 5-12), click **Edit** that is next to the **Parameter File** box. The **SHEF Parameter File** dialog box will open (Figure 5.16), which will allow the user to edit the parameter file. From the **SHEF PE Code** column of the

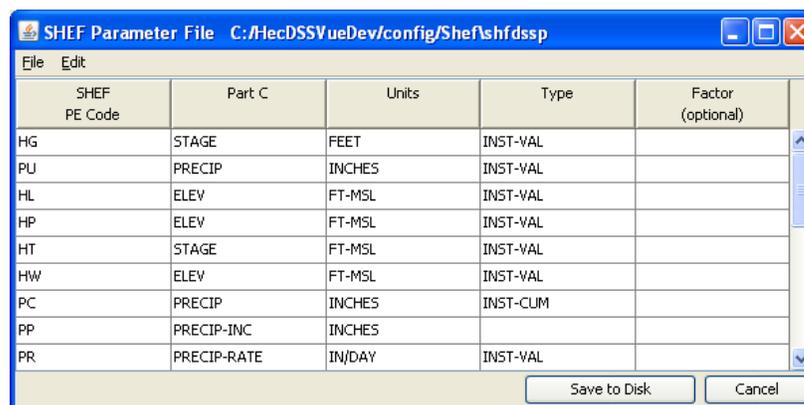
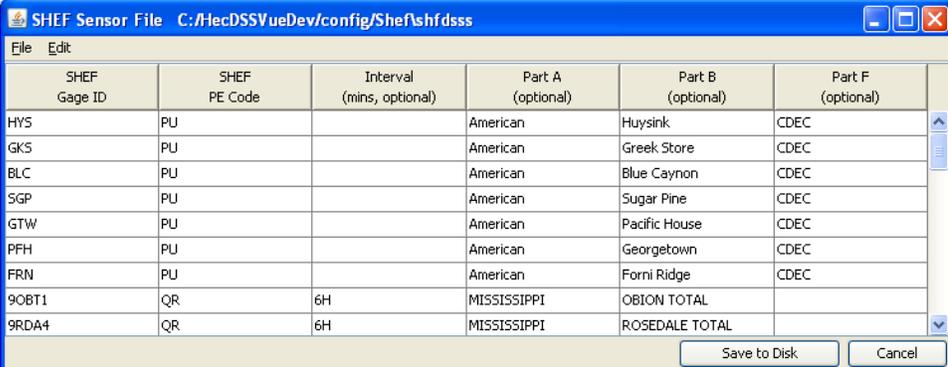


Figure 5.16 SHEF Parameter File Dialog Box

table edit the PE code; from the **Part C** column (see Figure 5.15, page 5-13) edit the C Part of the DSS pathname, the units for the PE code can be edited in the **Units** column, the type of for the PE code can be edited in the **Type** column, and from the **Factor** column, an optional factor to multiply the data by (e.g., kilo-cfs might have a factor of 1000.0 and store the data in HEC-DSS as cfs) can be entered. The sample parameter file that is distributed with HEC-DSSVue should be relatively complete.

Sensor File – shfdsss

The SHEF sensor file links the SHEF gage ID to the HEC-DSS A, B, and F parts. To edit the parameter file, from the **Options** dialog box, with the SHEF tab clicked (see Figure 5.14, page 5-12), click **Edit** that is next to the **Sensor File** box. The **SHEF Sensor File** dialog box will open (Figure 5.17), which will allow the user to edit the sensor file. For each Gage ID and PE code, a row should exist with the Gage ID in column 1, the PE



SHEF Gage ID	SHEF PE Code	Interval (mins, optional)	Part A (optional)	Part B (optional)	Part F (optional)
HYS	PU		American	Huysink	CDEC
GKS	PU		American	Greek Store	CDEC
BLC	PU		American	Blue Caynon	CDEC
SGP	PU		American	Sugar Pine	CDEC
GTW	PU		American	Pacific House	CDEC
PFH	PU		American	Georgetown	CDEC
FRN	PU		American	Forni Ridge	CDEC
9OBT1	QR	6H	MISSISSIPPI	OBION TOTAL	
9RDA4	QR	6H	MISSISSIPPI	ROSEDALE TOTAL	

Figure 5.17 SHEF Sensor File Dialog Box

code in column 2, an optional time interval in column 3, the A part (basin) in column 4, the B part (location) in column 5, and the F part (version) in column 6. If no time interval is given, the data interval is assumed to be irregular. If a time interval is provided, it should end with "M" for minutes (e.g. 15M), or "H" for hours (e.g., 6H). If an entry does not exist for the data type being imported, default values are used.

5.3.2 Importing SHEF Data

Once the SHEF tables are setup, you can import SHEF data by either dragging SHEF files with an extension of ".shef" or ".shf" from Windows Explorer and dropping them into the main screen of HEC-DSSVue with an open HEC-DSS file or from the **Data Entry** menu.

To import SHEF data files into HEC-DSS:

1. From the **Data Entry** menu, point to **Import**, click **SHEF**.
2. An **Open** browser will open (see Figure 5.6, page 5-7), navigate to a directory and select the files you wish to import. Select the files to import, click **Open**. You can import multiple files at one time. The file extensions do not matter for this option (the files do not need to end with ".shef").
3. A message window will open (Figure 5.18); this window will display how many values were stored from the SHEF data sets. You can view the SHEF process log by clicking **View Log**.

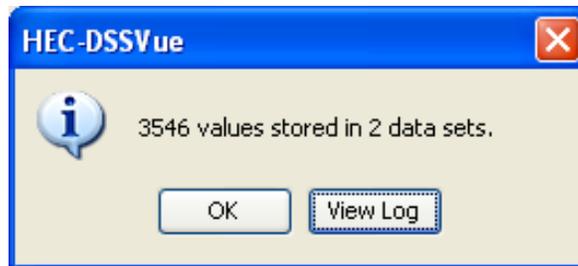


Figure 5.18 SHEF Import Status Message Window

Or, alternatively you can import SHEF files if they have the extension ".shef" or ".shf" by:

1. From Windows Explorer, select the ".shf" or ".shef" files that you wish to import (Figure 5.19).

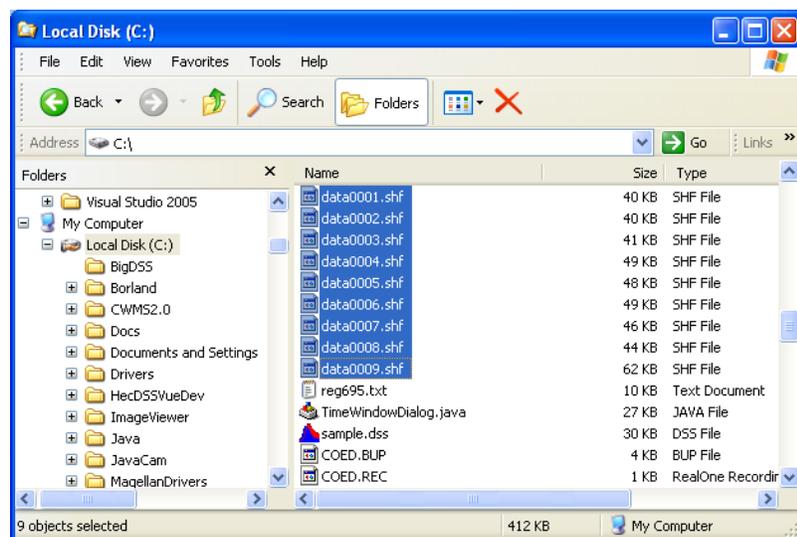


Figure 5.19 Selection of .shf or .shef Files to Drag and Drop into DSSVue

2. "Drag" the files onto the main HEC-DSSVue screen (with your HEC-DSS file that you want to import to opened.)
3. The data is imported and a message window will open (Figure 5.18), this window will display how many values were stored from the SHEF data sets. You can view the SHEF process log by clicking **View Log**.

5.3.3 Exporting SHEF

You can export SHEF data by:

1. Select the pathnames for the data sets that you want to export, then from the **Data Entry** menu, point to **Export**, click **SHEF**.
2. A **Save** browser will be open (Figure 5.20), navigate to the directory where you want the exported SHEF data to be, type the name of file in the **File name** box, click **Save**. All data will be saved in one file.

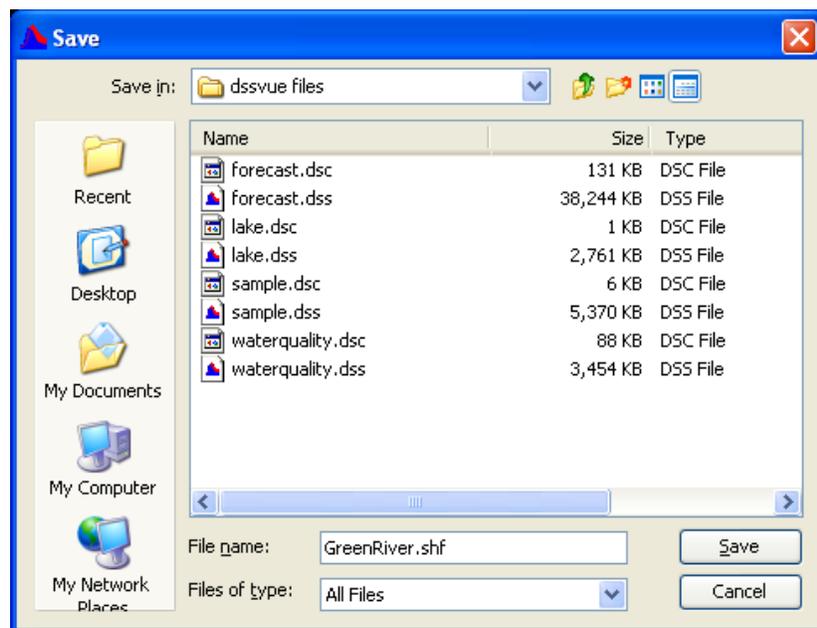


Figure 5.20 Save Browser - SHEF Data

5.4 Importing and Exporting Microsoft Excel and ".csv" Data

Importing, exporting and editing data with Microsoft Excel is accomplished in HEC-DSSVue by the "plug-in *Excel.jar*", stored in the HEC-DSSVue **Plugins** directory. Plug-ins can be updated without having to update the HEC-DSSVue program itself. Refer to the HEC-DSSVue plug-ins web page for updates at:

<http://www.hec.usace.army.mil/software/hec-dss/plug-ins.htm>.

At this time, only time-series data can be imported into HEC-DSS. Check the web site above for updates. Both time series and paired data can be exported to Excel but only time-series data can be edited in Excel.

You can also import time-series data in a comma separated format (.csv) or data separated by blank spaces, using the same procedure with the "Time Series Wizard". This plug-in is in a development stage; check the plug-ins web page for updates.

Note: Excel uses beginning of period dates, whereas HEC-DSS uses end of period. Thus, the average data for a day will show at 0000 hours in Excel and 2400 hours in HEC-DSS. This can cause a time shift by a day if the data is not imported or exported carefully; Check your data after the operation. You can shift data to the correct times by using the **Time Functions** tab in the **Math Functions** screen.

5.4.1 Exporting Data to Microsoft Excel

To export data to Excel, simply select the data sets you want to export and then press the Excel Icon  on the tool bar, or from the **Display** menu, click **Tabulate in Excel**. An example of data tabulated in Excel is shown in Figure 5.21. You can then save the Excel file to the name that you desire. Currently you cannot format the data in a different manner.

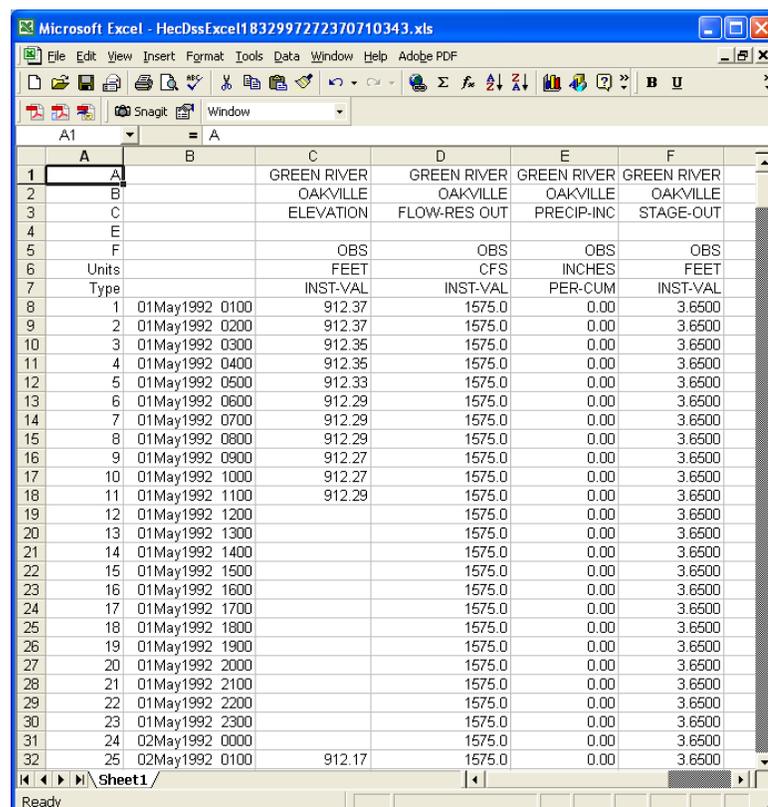


Figure 5.21 Tabulating Data in Excel

If the Excel icon is not displayed, then you need to download the *Excel.jar* file from the web page listed above and save it in the *HEC-DSSVue*

Plugins directory. This capability assumes that you have Microsoft Excel loaded on your computer or another program that is associated with ".xls" files.

5.4.2 Editing Data in Microsoft Excel

You can edit data in Microsoft Excel by selecting the pathnames that need to be edited. From the **Edit** menu, click **Edit in Excel**, an **Excel Data** dialog box will open (Figure 5.22), as well as Microsoft Excel. The data associated with the selected pathnames will be display in the spreadsheet.

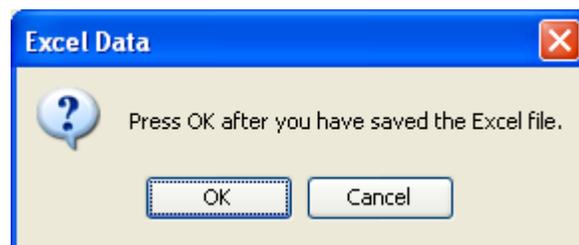


Figure 5.22 Excel Data Dialog Box

After you have made your changes, save the Excel file, and close Microsoft Excel. From the **Excel Data** dialog box click **OK**, the dialog box will close and the edits made to the data for those selected pathnames will be stored in the DSS file. If you do not want to save your changes back to HEC-DSS, click **Cancel**.

Note: You can only change data in Excel when you are editing - you cannot add or delete data. The data must remain in the same format with the same number of rows and columns to be stored back to HEC-DSS.

5.4.3 Importing Data from Microsoft Excel or ".csv" files using Data Entry

You can import time-series data from Excel, a ".csv" file, or a blank separated file using the **Data Entry** dialog box. At this time, you can only import time-series data (both regular interval and irregular interval data). Check the HEC-DSSVue plug-ins web page for updates.

1. From the HEC-DSSVue main window open a DSS file, from the **Data Entry** menu, point to **Import**, click **Excel** (see Figure 5.23, page 5-18).
2. If your data is in a ".csv" or blank separated file, select **Time Series Data** instead of **Excel**. An example of the browsing window is shown in Figure 5.24 (page 5-18).

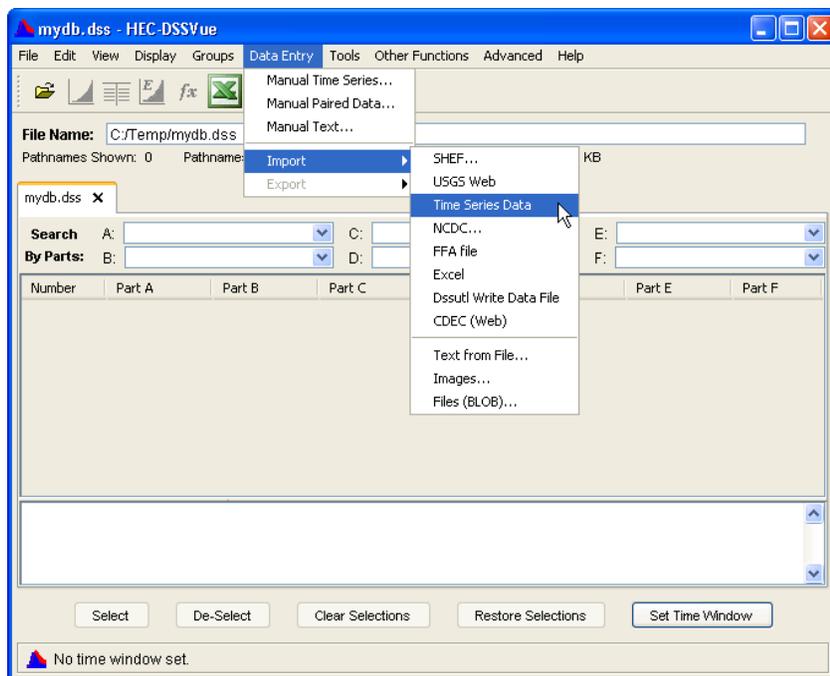


Figure 5.23 Importing Excel or .csv Files

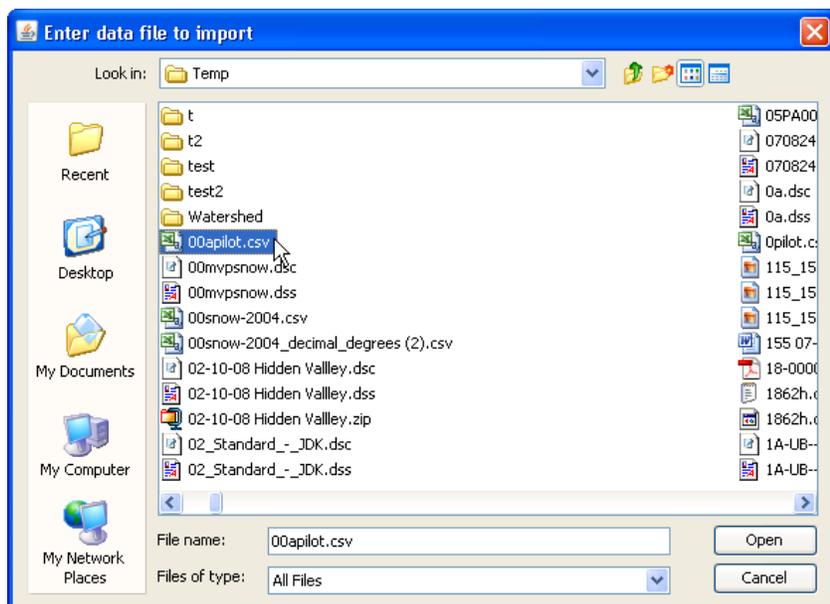


Figure 5.24 Selection of an Excel or .csv File to import into HEC-DSSVue

3. Select your file to import. Data should be in columns, separated by comma or spaces. Ideally, a row should contain a location or parameter, and a column should contain date/time.
4. The file will be read into an editable table as shown in Figure 5.25 (page 5-20).
5. For regular-interval time series data, select the column cells that you wish to import. For irregular-interval data, you need to select date/time column cells also.

Row \ Col	1	2	3	4	5	6	7	8	9
1	Date	Cannonsvill...	Cannonsvill...	Hale_Eddy	Pepacton_...	Pepacton_Loc	Harvard	Cooks_Falls	EB
2	01/01/1990	0.2720212...	0.9583496...	0.1057679...	0.1977362...	0.1518734...	0.8480854...	0.1979043...	0.
3	01/02/1990	0.2071692...	0.7787844...	0.8069580...	0.1623684...	0.1238917...	0.7233786...	0.1491335...	0.
4	01/03/1990	0.1724640...	0.6025687...	0.6923772...	0.1244597...	0.9604487...	0.5293021...	0.1245722...	0.
5	01/04/1990	0.1502901...	0.5024237...	0.6154787...	0.1023794...	0.7970587...	0.4218180...	0.1089046...	0.
6	01/05/1990	0.1439117...	0.4788691...	0.6124672...	0.9446376...	0.7536506...	0.3897295...	0.1038861...	0.
7	01/06/1990	0.1305215...	0.4301590...	0.5540781...	0.8452076...	0.6667305...	0.3456926...	0.9454150...	0.
8	01/07/1990	0.1221705...	0.3980389...	0.5192869...	0.7792450...	0.6158618...	0.3147904...	0.8880525...	0.
9	01/08/1990	0.1164005...	0.3776819...	0.4946181...	0.7373125...	0.5834322...	0.2961869...	0.8482175...	0.
10	01/09/1990	0.1123354...	0.3643946...	0.4768562...	0.7100672...	0.5623094...	0.2847310...	0.8199797...	0.
11	01/10/1990	0.1279986...	0.4268697...	0.5415524...	0.8314705...	0.6567504...	0.3409188...	0.9324525...	0.
12	01/11/1990	0.1435780...	0.4953259...	0.6119698...	0.9807919...	0.7548439...	0.4024815...	0.1049132...	0.
13	01/12/1990	0.1429657...	0.5019500...	0.6070792...	0.9656932...	0.7619302...	0.4126247...	0.1033879...	0.
14	01/13/1990	0.1280681...	0.4402253...	0.5392115...	0.8636758...	0.6787944...	0.3613237...	0.9438596...	0.
15	01/14/1990	0.1193026...	0.3993102...	0.5052408...	0.7846928...	0.6172832...	0.3207739...	0.8764584...	0.
16	01/15/1990	0.1134263...	0.3744597...	0.4815491...	0.7328138...	0.5787608...	0.2967269...	0.8323476...	0.
17	01/16/1990	0.1095868...	0.3730120...	0.4863718...	0.7005711...	0.5654937...	0.2859636...	0.8022546...	0.
18	01/17/1990	0.1155381...	0.3977622...	0.5003648...	0.7841191...	0.6096471...	0.3232146...	0.8526495...	0.
19	01/18/1990	0.1428269...	0.4896343...	0.5755652...	0.9566166...	0.7673901...	0.4167479...	0.1022417...	0.
20	01/19/1990	0.1287979...	0.4368536...	0.5214408...	0.8585724...	0.6881925...	0.3699852...	0.9197552...	0.
21	01/20/1990	0.1186455...	0.3938497...	0.4876674...	0.7742949...	0.6180724...	0.3237937...	0.8538720...	0.
22	01/21/1990	0.1121575...	0.3731963...	0.4670284...	0.7209345...	0.5796547...	0.2963318...	0.8116342...	0.
23	01/22/1990	0.1900961...	0.6805094...	0.6592942...	0.1758676...	0.1278266...	0.6638460...	0.1452964...	0.
24	01/23/1990	0.2325017...	0.8127097...	0.7746632...	0.2036380...	0.1476901...	0.8127000...	0.1792647...	0.

Figure 5.25 Editable Import Table of an Excel or .csv File

6. Press the **Import** button and your selected cells will be entered into the time series data entry dialog, as shown in Figure 5.26.

Row \ Col	1	2	3	4	5	6	7	8	9	10
1	Date	Cannonsvill...	Cannonsvill...	Hale_Eddy	Pepacton_...	Pepacton_Loc	Harvard	Cooks_Falls	EB_Beaver...	Fish
2	01/01/1990	0.2720212...	0.9583496...	0.1057679...	0.1977362...	0.1518734...	0.8480854...	0.1979043...	0.5705389...	0.2
3	01/02/1990	0.2071692...	0.7787844...	0.8069580...	0.1623684...	0.1238917...	0.7233786...	0.1491335...	0.4727288...	0.1
4	01/03/1990	0.1724640...	0.6025687...	0.6923772...	0.1244597...	0.9604487...	0.5293021...	0.1245722...	0.3593155...	0.1
5	01/04/1990	0.1502901...	0.5024237...	0.6154787...	0.1023794...	0.7970587...	0.4218180...	0.1089046...	0.2948111...	0.1
6	01/05/1990	0.1439117...	0.4788691...	0.6124672...	0.9446376...	0.7536506...	0.3897295...	0.1038861...	0.2788722...	0.1
7	01/06/1990	0.1305215...	0.4301590...	0.5540781...	0.8452076...	0.6667305...	0.3456926...	0.9454150...	0.2491358...	0.9
8	01/07/1990	0.1221705...	0.3980389...	0.5192869...	0.7792450...	0.6158618...	0.3147904...	0.8880525...	0.2282385...	0.8
9	01/08/1990	0.1164005...	0.3776819...	0.4946181...	0.7373125...	0.5834322...	0.2961869...	0.8482175...	0.2152451...	0.8
10	01/09/1990	0.1123354...	0.3643946...	0.4768562...	0.7100672...	0.5623094...	0.2847310...	0.8199797...	0.2069444...	0.7
11	01/10/1990	0.1279986...	0.4268697...	0.5415524...	0.8314705...	0.6567504...	0.3409188...	0.9324525...	0.2438071...	0.9
12	01/11/1990	0.1435780...	0.4953259...	0.6119698...	0.9807919...	0.7548439...	0.4024815...	0.1049132...	0.2869898...	0.1
13	01/12/1990	0.1429657...	0.5019500...	0.6070792...	0.9656932...	0.7619302...	0.4126247...	0.1033879...	0.2883526...	0.1
14	01/13/1990	0.1280681...	0.4402253...	0.5392115...	0.8636758...	0.6787944...	0.3613237...	0.9438596...	0.2538793...	0.9
15	01/14/1990	0.1193026...	0.3993102...	0.5052408...	0.7846928...	0.6172832...	0.3207739...	0.8764584...	0.2285215...	0.8
16	01/15/1990	0.1134263...	0.3744597...	0.4815491...	0.7328138...	0.5787608...	0.2967269...	0.8323476...	0.2131053...	0.8
17	01/16/1990	0.1095868...	0.3730120...	0.4863718...	0.7005711...	0.5654937...	0.2859636...	0.8022546...	0.2085117...	0.8
18	01/17/1990	0.1155381...	0.3977622...	0.5003648...	0.7841191...	0.6096471...	0.3232146...	0.8526495...	0.2249676...	0.8
19	01/18/1990	0.1428269...	0.4896343...	0.5755652...	0.9566166...	0.7673901...	0.4167479...	0.1022417...	0.2889824...	0.1
20	01/19/1990	0.1287979...	0.4368536...	0.5214408...	0.8585724...	0.6881925...	0.3699852...	0.9197552...	0.2579780...	0.9
21	01/20/1990	0.1186455...	0.3938497...	0.4876674...	0.7742949...	0.6180724...	0.3237937...	0.8538720...	0.2291259...	0.8
22	01/21/1990	0.1121575...	0.3731963...	0.4670284...	0.7209345...	0.5796547...	0.2963318...	0.8116342...	0.2116117...	0.8
23	01/22/1990	0.1900961...	0.6805094...	0.6592942...	0.1758676...	0.1278266...	0.6638460...	0.1452964...	0.4262794...	0.1
24	01/23/1990	0.2325017...	0.8127097...	0.7746632...	0.2036380...	0.1476901...	0.8127000...	0.1792647...	0.5228332...	0.1

Figure 5.26 Selecting and Importing Data

7. Enter the pathname parts, units and type, and then press **Save**. An example of the **Time Series Data Entry** window that appears after data has been imported is shown in Figure 5.27 (page 5-21).

Time Series Data Entry

Pathname Parts

A: B: C:

D: E: 1DAY F:

Pathname:

Start Date: Units:

Start Time: Type:

Paste

Manual Entry Automatic Generation

Ordinate	Date	Time	Value
Units			
Type			
1	03 Jan 1990	24:00	69.238
2	04 Jan 1990	24:00	61.548
3	05 Jan 1990	24:00	61.247
4	06 Jan 1990	24:00	55.408
5	07 Jan 1990	24:00	51.929
6	08 Jan 1990	24:00	49.462
7	09 Jan 1990	24:00	47.686
8	10 Jan 1990	24:00	54.155
9	11 Jan 1990	24:00	61.197
10	12 Jan 1990	24:00	60.708
11	13 Jan 1990	24:00	53.921
12	14 Jan 1990	24:00	50.524
13	15 Jan 1990	24:00	48.155
14	16 Jan 1990	24:00	48.637
15	17 Jan 1990	24:00	50.036
16	18 Jan 1990	24:00	57.557

Plot Graphically Edit Save Cancel

Figure 5.27 Time Series Data Entry Dialog Box

Note: Excel uses beginning of period dates, whereas HEC-DSS uses end of period. Thus, the average data for a day will show at 0000 hours in Excel and 2400 hours in HEC-DSS. This can cause a time shift by a day if the data is not imported or exported carefully; Check your data after the operation. You can shift data to the correct times by using the **Time Functions** tab in the **Math Functions** screen.

5.4.4 Importing Data from Microsoft Excel or ".csv" files using Time Series Wizard

You can import multiple columns of time-series data from Excel, a ".csv" file, or a blank separated file using the **Time Series Wizard**. The **Time**

Series Wizard is a plug-in that is distributed in a development stage; check the HEC-DSSVue plug-ins web page for updates.

1. Open your DSS file from the **Data Entry** menu, point to **Import**, click and click **Excel** (see Figure 5.23, page 5-19).
2. If your data is in a ".csv" or blank separated file, click **Time Series Data** instead of **Excel**.
3. Select your file to import (see Figure 5.24, page 5-19). Data should be in columns, separated by comma or spaces. Ideally, a row should contain a location or parameter, and a column should contain date/time.
4. The file will be read into an editable table as shown in Figure 5.25 (page 5-20).
5. Select any location, parameter, units, or version, etc. rows by right clicking on the header row in the first column and selecting the item, as shown in Figure 5.28. You may also skip any rows that are not to be imported or used.

Row \ Col	1	2	3	4	5	6	7	8	9	
1			Cannonsvill...	Cannonsvill...	Hale_Eddy	Pepacton_...	Pepacton_Loc	Harvard	Cooks_Falls	EB
2		720212...	0.9583496...	0.1057679...	0.1977362...	0.1518734...	0.8480854...	0.1979043...	0.	
3			0.7787844...	0.8069580...	0.1623684...	0.1238917...	0.7233786...	0.1491335...	0.	
4			0.6025687...	0.6923772...	0.1244597...	0.9604487...	0.5293021...	0.1245722...	0.	
5	01/04/1990	0.	0.5024237...	0.6154787...	0.1023794...	0.7970587...	0.4218180...	0.1089046...	0.	
6	01/05/1990	0.	0.4788691...	0.6124672...	0.9446376...	0.7536506...	0.3897295...	0.1038861...	0.	
7	01/06/1990	0.1305215...	0.4301590...	0.5540781...	0.8452076...	0.6667305...	0.3456926...	0.9454150...	0.	
8	01/07/1990	0.1221705...	0.3980389...	0.5192869...	0.7792450...	0.6158618...	0.3147904...	0.8880525...	0.	
9	01/08/1990	0.1164005...	0.3776819...	0.4946181...	0.7373125...	0.5834322...	0.2961869...	0.8482175...	0.	
10	01/09/1990	0.1123354...	0.3643946...	0.4768562...	0.7100672...	0.5623094...	0.2847310...	0.8199797...	0.	
11	01/10/1990	0.1279986...	0.4268697...	0.5415524...	0.8314705...	0.6567504...	0.3409188...	0.9324525...	0.	
12	01/11/1990	0.1435780...	0.4953259...	0.6119698...	0.9807919...	0.7548439...	0.4024815...	0.1049132...	0.	
13	01/12/1990	0.1429657...	0.5019500...	0.6070792...	0.9656932...	0.7619302...	0.4126247...	0.1033879...	0.	
14	01/13/1990	0.1280681...	0.4402253...	0.5392115...	0.8636758...	0.6787944...	0.3613237...	0.9438596...	0.	
15	01/14/1990	0.1193026...	0.3993102...	0.5052408...	0.7846928...	0.6172832...	0.3207739...	0.8764584...	0.	
16	01/15/1990	0.1134263...	0.3744597...	0.4815491...	0.7328138...	0.5787608...	0.2967269...	0.8323476...	0.	
17	01/16/1990	0.1095868...	0.3730120...	0.4863718...	0.7005711...	0.5654937...	0.2859636...	0.8022546...	0.	
18	01/17/1990	0.1155381...	0.3977622...	0.5003648...	0.7841191...	0.6096471...	0.3232146...	0.8526495...	0.	
19	01/18/1990	0.1428269...	0.4896343...	0.5755652...	0.9566166...	0.7673901...	0.4167479...	0.1022417...	0.	
20	01/19/1990	0.1287979...	0.4368536...	0.5214408...	0.8585724...	0.6881925...	0.3699852...	0.9197552...	0.	
21	01/20/1990	0.1186455...	0.3938497...	0.4876674...	0.7742949...	0.6180724...	0.3237937...	0.8538720...	0.	
22	01/21/1990	0.1121575...	0.3731963...	0.4670284...	0.7209345...	0.5796547...	0.2963318...	0.8116342...	0.	
23	01/22/1990	0.1900961...	0.6805094...	0.6592942...	0.1758676...	0.1278266...	0.6638460...	0.1452964...	0.	
24	01/23/1990	0.2325017...	0.8127097...	0.7746632...	0.2036380...	0.1476901...	0.8127000...	0.1792647...	0.	

Figure 5.28 Assigning Locations, Parameters, Units, Versions, etc. to Rows

6. From the top header row, select any columns that contain dates or times, as shown in Figure 5.29 (page 5-23).
7. You can also select individual data columns from the header popup.
8. Alternatively, you can enter all data into DSS at one time by right-clicking the upper left cell and selecting **Set All Data Columns**, as shown in Figure 5.30 (page 5-23). The resulting window will look like the example in Figure 5.31 (page 5-24).

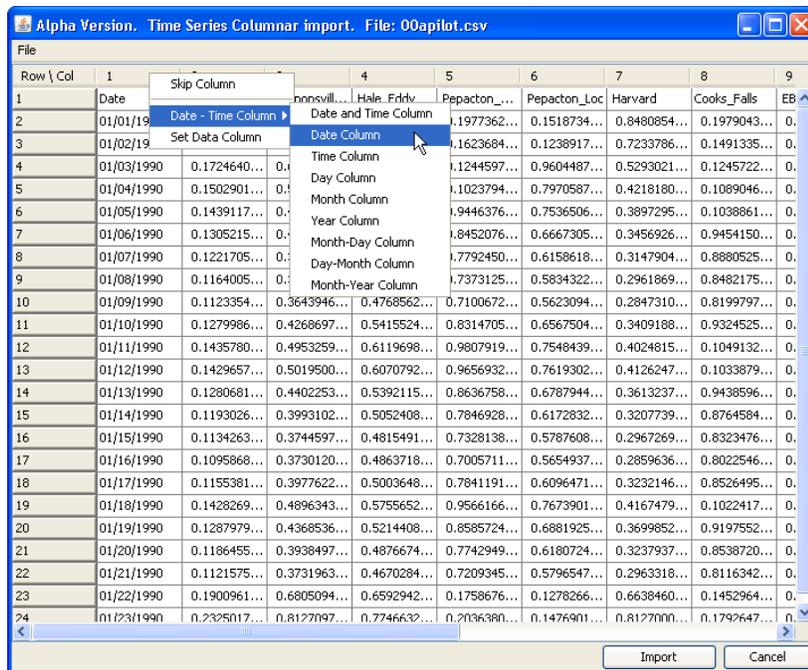


Figure 5.29 Assigning Data and Time to Columns

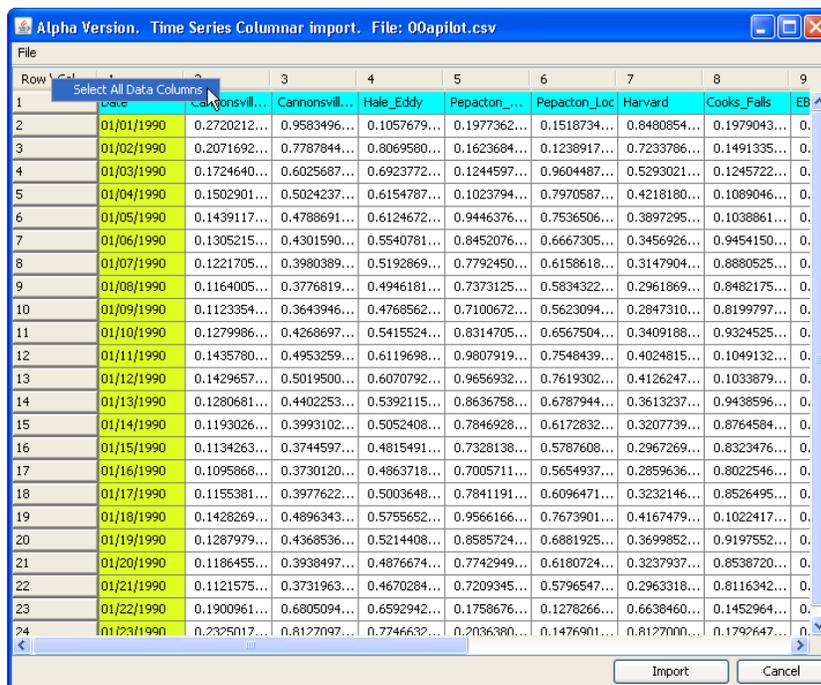


Figure 5.30 Select all Data and Columns to Import

9. This will bring up a dialog to set additional pathname parts or units, as shown in Figure 5.32 (page 5-24).
10. Enter additional information desired. To import all the data sets, click **Import Now**. A confirmation window will appear, see Figure 5.33 (page 5-24).
11. Alternatively, if all columns are not to be imported, individual data set columns can be imported by right clicking on the header row of

Row \ Col	1	2	3	4	5	6	7	8	9
1	Date	Cannonsvill...	Cannonsvill...	Hale_Eddy	Pepacton_...	Pepacton_Loc	Harvard	Cooks_Falls	EB
2	01/01/1990	0.2720212...	0.9583496...	0.1057679...	0.1977362...	0.1518734...	0.8480854...	0.1979043...	0.
3	01/02/1990	0.2071692...	0.7787844...	0.8069580...	0.1623684...	0.1238917...	0.7233786...	0.1491335...	0.
4	01/03/1990	0.1724640...	0.6025687...	0.6923772...	0.1244597...	0.9604487...	0.5293021...	0.1245722...	0.
5	01/04/1990	0.1502901...	0.5024237...	0.6154787...	0.1023794...	0.7970587...	0.4218180...	0.1089046...	0.
6	01/05/1990	0.1439117...	0.4788691...	0.6124672...	0.9446376...	0.7536506...	0.3897295...	0.1038861...	0.
7	01/06/1990	0.1305215...	0.4301590...	0.5540781...	0.8452076...	0.6667305...	0.3456926...	0.9454150...	0.
8	01/07/1990	0.1221705...	0.3980389...	0.5192869...	0.7792450...	0.6158618...	0.3147904...	0.8880525...	0.
9	01/08/1990	0.1164005...	0.3776819...	0.4946181...	0.7373125...	0.5834322...	0.2961869...	0.8482175...	0.
10	01/09/1990	0.1123354...	0.3643946...	0.4768562...	0.7100672...	0.5623094...	0.2847310...	0.8199797...	0.
11	01/10/1990	0.1279986...	0.4268697...	0.5415524...	0.8314705...	0.6567504...	0.3409188...	0.9324525...	0.
12	01/11/1990	0.1435780...	0.4953259...	0.6119698...	0.9807919...	0.7548439...	0.4024815...	0.1049132...	0.
13	01/12/1990	0.1429657...	0.5019500...	0.6070792...	0.9656932...	0.7619302...	0.4126247...	0.1033879...	0.
14	01/13/1990	0.1280681...	0.4402253...	0.5392115...	0.8636758...	0.6787944...	0.3613237...	0.9438596...	0.
15	01/14/1990	0.1193026...	0.3993102...	0.5052408...	0.7846928...	0.6172832...	0.3207739...	0.8764584...	0.
16	01/15/1990	0.1134263...	0.3744597...	0.4815491...	0.7328138...	0.5787608...	0.2967269...	0.8323476...	0.
17	01/16/1990	0.1095868...	0.3730120...	0.4863718...	0.7005711...	0.5654937...	0.2859636...	0.8022546...	0.
18	01/17/1990	0.1155381...	0.3977622...	0.5003648...	0.7841191...	0.6096471...	0.3232146...	0.8526495...	0.
19	01/18/1990	0.1428269...	0.4896343...	0.5755652...	0.9566166...	0.7673901...	0.4167479...	0.1022417...	0.
20	01/19/1990	0.1287979...	0.4368536...	0.5214408...	0.8585724...	0.6881925...	0.3699852...	0.9197552...	0.
21	01/20/1990	0.1186455...	0.3938497...	0.4876674...	0.7742949...	0.6180724...	0.3237937...	0.8538720...	0.
22	01/21/1990	0.1121575...	0.3731963...	0.4670284...	0.7209345...	0.5796547...	0.2963318...	0.8116342...	0.
23	01/22/1990	0.1900961...	0.6805094...	0.6592942...	0.1758676...	0.1278266...	0.6638460...	0.1452964...	0.
24	01/23/1990	0.2325017...	0.8127097...	0.7746632...	0.2036380...	0.1476901...	0.8127000...	0.1792647...	0.

Figure 5.31 Window after Selecting Select All Data Columns

Pathname Parts

A: B: * C:

D: E: 1DAY F:

Pathname: //*/1 DAY//

Start Date: 01Jan1990 Units:

Start Time: 24:00 Type: INST-VAL

Import Now Cancel OK

Figure 5.32 Import Data Window

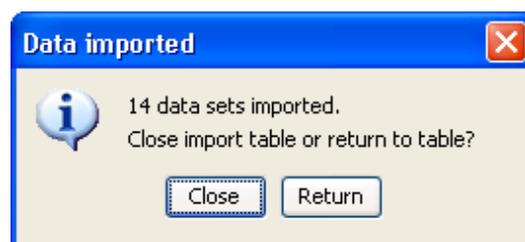


Figure 5.33 Import Data Confirmation Window

the column and selecting **Set Data Column**. This will bring up the window shown in Figure 5.32.

12. Fill in the additional information and click **Import Now** if you are finished importing data from this file, or click **OK** to select other columns. When you have selected all the columns you want to import, click **Import Now**, or click **Import** at the bottom of the table. A confirmation window will appear (see Figure 5.33, page 5-24).

5.5 Retrieving and Importing USGS (NWIS) Data

You can retrieve and import time-series data from the USGS NWIS database via the web using the **USGS** plug-in tool. The USGS occasionally updates the NWS database with more information and the **USGS** plug-in may be updated to reflect changes; check the HEC-DSSVue plug-ins web page for updates.

The **USGS** data retrieval plug-in will retrieve daily, hourly and annual peak flows from the NWIS web site. Daily, real-time and peak data availability can be obtained from the USGS water web site at: <http://waterdata.usgs.gov/nwis>. Hourly data information can be obtained from the USGS IDA (Instantaneous Data Archive) at <http://ida.water.usgs.gov>. The IDA is in a developmental phase and only a limited number of stations have historical short-term data available.

To use the USGS plug-in, you must be connected to the internet and the file *USGS.jar* must be located in the **Plugins** directory for HEC-DSSVue.

1. Open your DSS file, from the **Data Entry** menu, point to **Import**, click **USGS Web**. This will open the USGS Download plug-in interface with an empty station identifier table.
2. You can either open a previously saved table, manually enter the station information for the stations that you want, or automatically populate the table with a list of stations available on a state by state basis. An example of the **USGS Download** window can be seen in Figure 5.34.

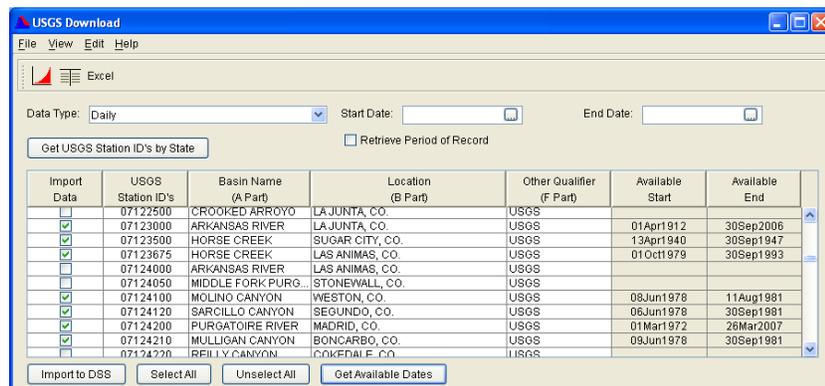


Figure 5.34 USGS Download Window

3. To open a previously saved table, from the **File** menu, click **Open Station Table**. Browse to the directory and file that you want to access and then click **Open**. Optionally, you can select a file from the most recently used file list at the bottom of the **File** menu. To save a table, from the **File** menu, click **Save Station Table**. Browse to the directory where you want to save your table and then enter the file name and click **Save**. Tables are in text format and are saved with an extension of ".usgs".
4. To manually enter station information, select the USGS Station ID cell on a blank row. Enter the USGS station ID number and then fill in the basin or river name, location name, parameter and version in the subsequent columns or accept the defaults provided after entering the station ID. If you need to add additional rows, select the **Edit** menu and then **Insert Rows**. Fill in the identifiers for any remaining stations that you want. Once you have completed your table, save it using **Save Station Table** from the **File** menu.
5. You can sort the station table by pressing on the column header of the column that you want to sort by. A second press of the column header will perform an inverse sort.
6. You may find the list of stations easier to use if you delete those stations that you are not interested in. To do this, highlight the rows in the table that you want to delete and then select **Delete Checked Rows** from the **Edit** menu. You can save your table by selecting **Save Station Table** from the **File** menu.
7. You can query for the starting date and ending date of available data for selected stations. To do this, select the check boxes for the stations that you want and then press the **Get Available Dates** button. Each station has to be queried independently, so select only those stations that you are interested in. The date range for the selected stations will be displayed in the two right most columns of the table.
8. To retrieve data from the USGS web site and import into HEC-DSS, select the **Data Type** you want (either Daily, Instantaneous (Hourly), Real Time or Annual Peak Data) from the drop down selector near the top panel of the screen. If you want daily, you can enter a start date and end date for the time frame that you are interested in or select the **Retrieve Period of Record** check box to retrieve the period of record data. The date should be entered in the form of DDMMYYYY (e.g., 03FEB2005). Selecting the small box in the date field will provide a calendar tool to aid in setting the date. Even though you may specify dates, only data that is available within those dates from the web site can be retrieved. If you want real time data, enter the number of days back that you want to retrieve data for. The USGS offers data for the last thirty-one days for real time data.

9. Use caution when selecting a time period for instantaneous historical data, as you might unintentionally request excessive number of values. For example, if data is given in 15 minute intervals, a year's worth of data will be 35,040 values, which can take a long time to retrieve.
10. After the data type and time span have been set, select the stations from the table that you want data for by checking the box in the **Import Data** column for those stations. If you want to retrieve data for all stations in your table, press the **Select All** button. The data retrieval process will begin when you press the **Import** button. This operation will take some time, depending on your connection speed to the internet and how much data you have requested. A **Retrieve Progress** dialog box will display the progress of the process. After data has been retrieved, the main catalog screen in HEC-DSSVue will be automatically updated.
11. Daily data is stored with an E part of "1DAY". The interval for real-time data will be set based on the frequency of the data retrieved. If the frequency varies, the data will be store in an irregular interval format. You may want to use the interval modification functions available from the **Time Functions** tab in the **Math Functions** screen to change the data to a desired interval.
12. Data can be directly plotted, tabulated or sent to Microsoft Excel from the plug-in by selecting the desired data sets and then pressing the appropriate tool bar button. You do not need to import the data first; it will be automatically imported and stored in the HEC-DSS file for you. To send the data to Microsoft Excel, you must have installed the Excel plug-in, available from the HEC-DSSVue plug-in web page, or you must have an Excel capable version (currently under development) of the program.
13. Some offices require proxy information to be set to access the internet. Proxy information can be set by selecting the **Options** item from the **Edit** menu. This will display the screen shown in Figure 5.35. Fill in the appropriate values and then click **OK**. The information will be retained between sessions.

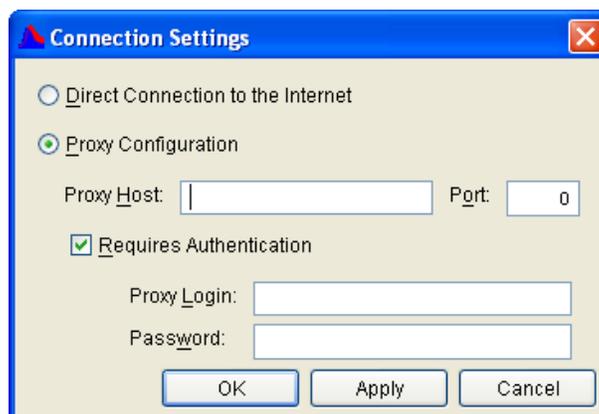


Figure 5.35 Connection Settings Dialog Box

14. The USGS plug-in currently has limited error detection capabilities. If you think that there are problems, you should check the HEC-DSSVue log screen for messages. The log screen is usually minimized in your task bar.

The USGS plug-in will indicate when data cannot be retrieved, but it may not give the reason why. You should check the USGS web page with a browser to ensure that what you are requesting is available. The web address is: <http://waterdata.usgs.gov/nwis> for daily and real-time data, or <http://ida.water.usgs.gov/ida> for hourly data.

5.6 Importing NCDC Data

You can optionally import climatic data from the National Climatic Data Center using the **NCDC** plug-in tool. It cannot retrieve data from NCDC; NCDC provides climatic data via ftp. This tool will import data in the ftp file that you received.

The **NCDC** data import plug-in will import data in the following formats: 3200 and 3210 (Daily Climatic Data), 3220 (Monthly Surface Data), 3240 (Hourly Precipitation Data), 3260 (15-minute precipitation data), LCD and 3505 (Local Climatic Data), and the GSOD (Global Surface Summary of Day). The plug-in will import all data from the data file provided using default names and units. Users may want to rename parts of pathname and/or delete unwanted data sets.

5.6.1 Obtaining NCDC Data

Data can be obtained via an ftp download from the NCDC web site at: <http://www.ncdc.noaa.gov/oa/ncdc.html>. The 3240 data is found at the address:

<http://ols.nndc.noaa.gov/plolstore/plsql/olstore.prodspecific?prodnum=C00313-TAP-A0001>.

You can obtain a list of the available stations (near the bottom of the page) after you click the link in the page above to enter the NCDC store. We have found it more useful to select stations in the county you are interested in and allow it to return the data that it has. To do this, select the Country. In that page, select the state and then select Counties and then select your county(ies) and the date range that you are interested in. We recommend a comma delimited format with station name.

Check the "Inventory Review" box, enter your email address and then press "Submit Request". The server will generate a data file and email

you when it is ready. Click on the link in your email (or the one in the last page you were on, if you waited long enough). This should display the data file in your internet browser. Save this file to disk and select it from the NCDC import plug-in. The plug-in will remove any of the html format that might be present. Data may be free for some government and educational internet addresses.

5.6.2 Recognized NCDC Formats

The plug-in has been tested with NCDC 3200, 3210, 3220, 3240 and 3260 formats in all forms. It has also been tested with LCD, GSOD and 3505 delimited formats. It will not import data from non-delimited LCD, GSOD and 3505 formats. If you have a choice for your format, we recommend comma delimited with station names. Many of the parameter types in 3200, 3220, LCD, GSOD and 3505 formats do not have the units or type assigned by the importer and they may need to be edited in later, if needed.

Examples of these formats are:

1. 3240 Comma Delimited:

```
COOPID,CD,ELEM,UN, YEAR,MO,DA, TIME, HOUR01, F, F, TIME, HOUR02...
-----,--,-----,--,-----,--,-----,--,-----,-----
041112,00,HPCP,HI,1970,09,01,0100, 00000,g, ,0200, 00000,...
041112,00,HPCP,HI,1970,09,04,0100, 00000, , ,0200, 00000,...
041112,00,HPCP,HI,1970,10,01,0100, 00000,g, ,0200, 00000,...
...
```

2. 3240 Space Delimited with Station Name:

```
COOPID STATION NAME                CD ELEM UN YEAR MO DA TIME
HOUR01
-----
---041112 BROOKS FARNHAM RANCH      00 HPCP HI 1970 09 01
0100 00000
041112 BROOKS FARNHAM RANCH        00 HPCP HI 1970 09 04 0100
00000 041112 BROOKS FARNHAM RANCH  00 HPCP HI 1970 10 01
0100 00000
...
```

3. 3240 fixed:

```
HPD04111200HPCPHI19700900010010100 00000g
HPD04111200HPCPHI19700900010012500 00000
HPD04111200HPCPHI19700900040011900 00005
HPD04111200HPCPHI19700900040012500 00005
HPD04111200HPCPHI19701000010010100 00000g
```

4. 3240 variable:

```
HPD04111200HPCPHI19701000010020100 00000g 2500 00000
HPD04111200HPCPHI19701000180080400 00003 0500 00010 0600 00012
HPD04111200HPCPHI19701000200030100 99999[ 1200 99999] 2500 00000I
...
```


10. 3210 Fixed:

```
DLY00003017F2MNMMD200401A1990310124 21018 00224 04020 00324 13023
00424 31018 00524 DLY00003017F5SCMD200401A1990310124 21023 00224
05022 00324 13025 00424 31022 00524
DLY00003017FMTMHR200401A1990310124 01810 00224 01258 00324 01341
00424 01551 00524
```

11. 3210 Fixed:

```
MLY04111202CLDD D19859999990060100 00000 0200 00003 0300 00000
0400 00032B MLY04111202DP01NA19859999990060100 00002 0200 00002
0300 00008 0400 00000 MLY04111202DP05NA19859999990060100 00000
0200 00001 0300 00001 0400 00000
```

12. 3220 Delimited:

```
COOPID,WBNID,CD,ELEM,UN,YEAR,A,S,MO,DA, JAN ,F,F,MO,DA, FEB
,F,F,MO,DA, MAR
-----
--,---,-----041112,99999,02,CLDD, D,1985,9,9,01,00, 00000, ,
,02,00, 00003, , ,03,00, 00000
041112,99999,02,DP01,NA,1985,9,9,01,00, 00002, , ,02,00, 00002, ,
,03,00, 00008
```

13. LCD Delimited:

```
Month:, 12/2004
Station Name:, "LOS ANGELES INTERNATIONAL AIRPORT" Call Sign:, LAX
Day,Time,StationType,Maint Indic,SkyConditions,Visibility,Weather
Type,Dry Bulb 01,0050,AO2 ,-,CLR ,10SM ,-,46 , , 7.8,40 ,
4.3,31 , , -.6, 56 , 3 ,VRB,-, 01,0150,AO2 ,-,CLR ,10SM ,-,46
, 7.8,38 , , 3.5,27 , , -2.8, 47 , 0 ,000,-, 01,0250,AO2 ,-,
,CLR ,10SM ,-,45 , , 7.2,36 , , 2.3,22 , , -5.6, 40 , 5
,010,-,
```

14. LCD Delimited:

```
Month:,09/2002
Station Name:, ASHEVILLE REGIONAL AIRPORT (AVL)
DT,Hr1, Hr2, Hr3, Hr4, Hr5, Hr6, Hr7, Hr8, Hr9, Hr10, Hr11, Hr12,
Hr13, Hr14, Hr15,
1,-----,T ,-----,-----,-----,-----,-----,-----,-----
-----,-----,-----
15,.05,.02,.03,.06,.01,.02,.02,T ,.01,T
,.02,.09,.06,.02,.04,.05,.01,T ,.01,T
-----,-----,-----,-----,-----,-----,-----,-----,-----,-----
-----,-----,-----
```

15. GSOD Delimited:

STN---	YEARMODA	TEMP	DEWP	SLP	STP	VISIB
WDSP	MXSPD	010010	20000501	33.2 8	29.9 8	1013.4 8
1012.3 8	8.6 6	4.5 8	13.0	010010	20000502	29.4 8
26.5 8	1015.0 8	1013.8 8	4.1 6	5.7 8	12.0	010010
20000503	31.3 8	28.7 8	1015.0 8	1013.8 8	6.0 6	
2.2 8	5.1	010010	20000504	32.3 8	29.8 8	1000.4 8
999.2 8	2.4 5	8.3 8	13.0			

16. 3505 Delimited:

```

      AWS  WBAN  YR--MODAHRMN  DIR  SPD  GUS  CLG  SKC  L  M  H  VSB  WW  WW  WW  W
TEMP  DEWP      SLP    722280 13876 200301010053 140 11 *** 49 OVC *
* * 10.1 00 ** * * * 59 54 1003.8 722280 13876 200301010153 140
13 *** 25 OVC * * * 2.5 63 10 * * * 57 54 1003.7 722280 13876
200301010253 170 14 21 14 OVC * * * 3.0 63 10 * * * 57 55
1003.7

```

5.6.3 Importing

You use the NCDC plug-in after you have retrieved your NCDC data files. The file NCDC.jar must be located in the **Plugins** directory for HEC-DSSVue. You can import NCDC data by either dragging NCDC files with an extension of ".ncdc" from Windows Explorer and drop them into the main screen of HEC-DSSVue with an opened HEC-DSS file or by selecting **NCDC** from the **Import** menu under the **Data Entry** men

To import NCDC data files into HEC-DSS:

1. Open your DSS file, from the **Data Entry** menu, point to **Import**, click **NCDC**. An **Open** browser will open (Figure 5.36).

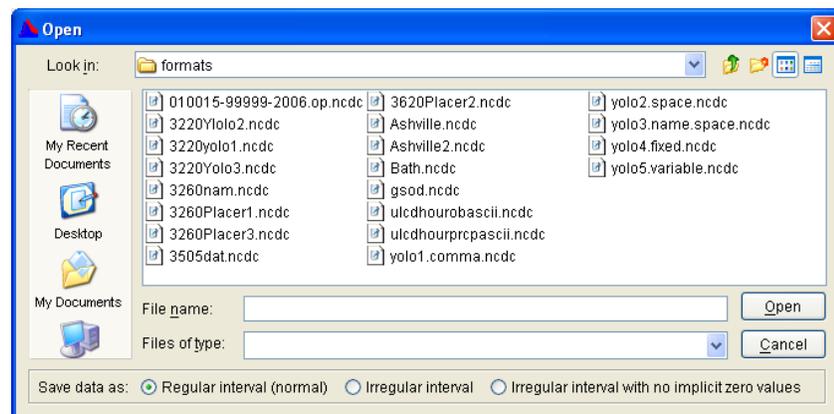


Figure 5.36 Open Browser - Import NCDC Files

2. Navigate to the directory with your data file, select the file and then click **Open**.
3. The plug-in will read the file, parse the data and store it into the opened DSS file. This process may take several seconds to complete, depending on the amount of data and speed of your machine. After the import is complete, a confirmation window will appear, see Figure 5.37 (page 5-33).

Or, alternatively you can import NCDC files if they have the extension ".ncdc" by:



Figure 5.37 Import NCDC File(s) Confirmation

1. From Windows Explorer, select the "ncdc" files that you wish to import.
2. "Drag" the files onto the main HEC-DSSVue screen (with your HEC-DSS file that you want to import to opened).
3. The data is imported and a message dialog will show how many values were stored.

5.7 Retrieving and Importing CDEC Data

You can optionally retrieve and import time-series data from the CDEC (California Data Exchange Center) database via the web using the **CDEC** plug-in tool. It can retrieve a variety of hydro-meteorological and environmental data from CDEC for stations throughout the state of California. You must enter the station information (station ID, sensor, duration code, and time window) manually into the plug-in table. The plug-in has no capability to identify which stations and what data is available from CDEC. Station ID and data availability can be obtained from the CDEC web site at: <http://cdec.water.ca.gov>.

To use the **CDEC** plug-in you must be connected to the internet and the file *CDEC.jar* must be located in the **Plugins** directory for HEC-DSSVue.

1. Open your DSS file, from the **Data Entry** menu, point to **Import**, click **CDEC (Web)**, this will open the **CDEC Download** dialog box (Figure 5.38) with an empty station identifier table.

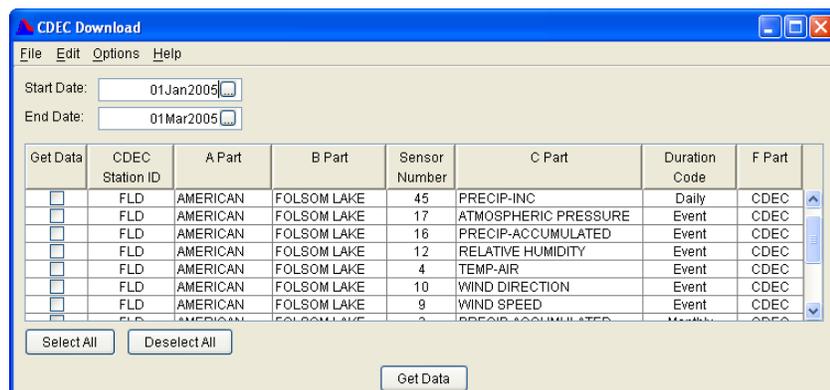
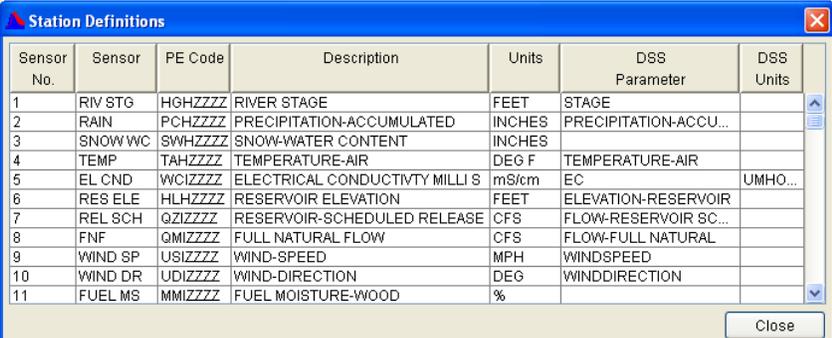


Figure 5.38 CDEC Download Dialog Box

2. You can either open a previously saved table or manually enter the station information for the stations that you want. The CDEC plug-in cannot populate the table; you must manually enter the station information.
3. To open a previously saved table, select the **File** menu and then **Open**. Browse to the directory and file that you want to access and then press the **Open** button. Optionally, you can select a file from the most recently used file list at the bottom of the **File** menu. To save a table, select the **File** menu and then **Save**. Browse to the directory where you want to save your table and then enter the file name and press the **Save** button. Tables are in text format and are saved with an extension of ".cdec".
4. To manually enter station information, select the CDEC Station ID cell on a blank row. Enter the ID and then fill in the basin or river name, location name and sensor number. For each sensor, a default C part will be provided; you can change the C part, if desired. Enter the duration code, which may be "Monthly", "Hourly", "Daily" or "Event". The duration code must match the data set offered by CDEC for that location and sensor; it will not retrieve data that does not have that duration code. (You need to access the CDEC web site at <http://cdec.water.ca.gov> to determine what data sets are offered with what duration codes.) A default F part of "CDEC" will be set but you can change that, if desired. If you need to add additional rows, select the **Edit** menu and then **Insert Rows**. Fill in the identifiers for any remaining stations that you want. Once you have completed your table, save it using **Save** from the **File** menu.
5. You can sort the station table by pressing on the column header of the column that you want to sort by. A second press of the column header will perform an inverse sort.
6. You can get a list of all sensor numbers, PE Codes and other information that CDEC has available by selecting **Stations Definitions** from the **Options** menu, as shown in Figure 5.39. These are the codes that CDEC uses, not necessarily what is available for each station.



Sensor No.	Sensor	PE Code	Description	Units	DSS Parameter	DSS Units
1	RIV STG	HGHZZZZ	RIVER STAGE	FEET	STAGE	
2	RAIN	PCHZZZZ	PRECIPITATION-ACCUMULATED	INCHES	PRECIPITATION-ACCU...	
3	SNOW WC	SWHZZZZ	SNOW-WATER CONTENT	INCHES		
4	TEMP	TAHZZZZ	TEMPERATURE-AIR	DEG F	TEMPERATURE-AIR	
5	EL CND	WCIZZZZ	ELECTRICAL CONDUCTIVITY MILLI S	mS/cm	EC	UMHO...
6	RES ELE	HLHZZZZ	RESERVOIR ELEVATION	FEET	ELEVATION-RESERVOIR	
7	REL SCH	QZIZZZZ	RESERVOIR-SCHEDULED RELEASE	CFS	FLOW-RESERVOIR SC...	
8	FNF	QMIZZZZ	FULL NATURAL FLOW	CFS	FLOW-FULL NATURAL	
9	WIND SP	USIZZZZ	WIND-SPEED	MPH	WINDSPEED	
10	WIND DR	UDIZZZZ	WIND-DIRECTION	DEG	WINDDIRECTION	
11	FUEL MS	MMIZZZZ	FUEL MOISTURE-WOOD	%		

Figure 5.39 List of Station Definitions

7. To retrieve data from the CDEC web site and import into HEC-DSS, open or fill-in the station table as describe above, and then enter the start date and end date for the time frame that you want data for. (The date boxes cannot be empty like they can for the USGS plug-in.) The date should be entered in the form of DDMMYY (e.g., 03FEB2005). Selecting the small box in the date field will provide a calendar tool to aid in setting the date. Even though you may specify dates, only data that is available within those dates from the web site can be retrieved. You should check the CDEC web site (at <http://cdec.water.ca.gov>) to verify what data is available for the stations that you are interested in.
8. After the data type and time span have been set, select the stations from the table that you want data for by checking the box in the **Get Data** column for those stations. If you want to retrieve data for all stations in your table, press the **Select All** button. The data retrieval process will begin when you press the **Get Data** button. This operation will take some time, depending on your connection speed to the internet and how much data you have requested. A **Retrieve Progress** dialog box will display the progress of the process. After data has been retrieved, the main catalog screen in HEC-DSSVue will be automatically updated.
9. Monthly, daily and hourly data will be stored with an E part of "1MON", "1DAY", or "1HOUR", respectively. Event data will be stored in an irregular-interval format with an E part of "IR-MONTH". You may want to use the interval modification functions available from the **Time Functions** tab in the **Math Functions** screen to change the data to a desired interval.
10. The CDEC plug-in currently has limited error detection capabilities. If you think there are problems, you should check the HEC-DSSVue log screen for messages. The log screen is usually minimized in your task bar.

The CDEC plug-in will indicate when data cannot be retrieved, but it may not give the reason why. You should check the CDEC web page with a browser to ensure that what you are requesting is available. The web address is: <http://cdec.water.ca.gov>.

5.8 Importing and Exporting DSSUTL Format

You can import HEC-DSS data from the legacy DSSUTL program that was created using the "Write Data" **WD** command and export data from HEC-DSSVue to the DSSUTL "Write Data" format so that it can be read into DSSUTL with the "Read Data" **RD** command. Refer to the DSSUTL documentation for more information. The function is supplied as a plug-in and the file *Dssutl.jar* must be located in the **Plugins** directory for HEC-DSSVue.

An example of the data format from DSSUTL is:

```

/MY BASIN/RIVERSIDE/FLOW/01MAY1990/1HOUR/OBS/
RTS Ver: 44 Prog:GOES LW:02JUN90 10:09:33 Tag:RIV-FLOW Prec:0
Start: 01MAY1990 at 0100 hours; End: 04MAY1990 at 1200 hours; Number: 108
Units: CFS Type: INST-VAL
13190. 13820. 14630. 15080. 15260. 15530. 15620. 15710. 15800.
15890. 15980. 14540. 14990. 15530. 15170. 14630. 14360. 14000.
13010. 12200. 11660. 11570. 11930. 11930. 11930. 12290. 12290.
12380. 12290. 12740. 13010. 12830. 12830. 13190. 14630. 14900.
13910. 13010. 11930. 10740. 10050. 9750. 9620. 9685. 9685.
10200. 10660. 10660. 10275. 9975. 9825. 9900. 9975. 10200.
10275. 10740. 11570. 11390. 10580. 10125. 10425. 10500. 9555.
8150. 9036. 9230. 9295. 9230. 9295. 9230. 9100. 9100.
9100. 8908. 9036. 9100. 9165. 9295. 9425. 10125. 10275.
9825. 9555. 9555. 9750. 9685. 9685. 9620. 9555. 9555.
9490. 9555. 9620. 9750. 9825. 9825. 10125. 10275. 10740.
11220. 11660. 12110. 12470. 12650. 12560. 12560. 12470. 12470.
END FILE

```

5.8.1 Importing DSSUTL Data

To import data from the DSSUTL format:

1. Open your DSS file, from the Data Entry menu, point to Import, click **Dssutl Write Data File**, the Enter DSSUTL data file to import browser will open (Figure 5.40).

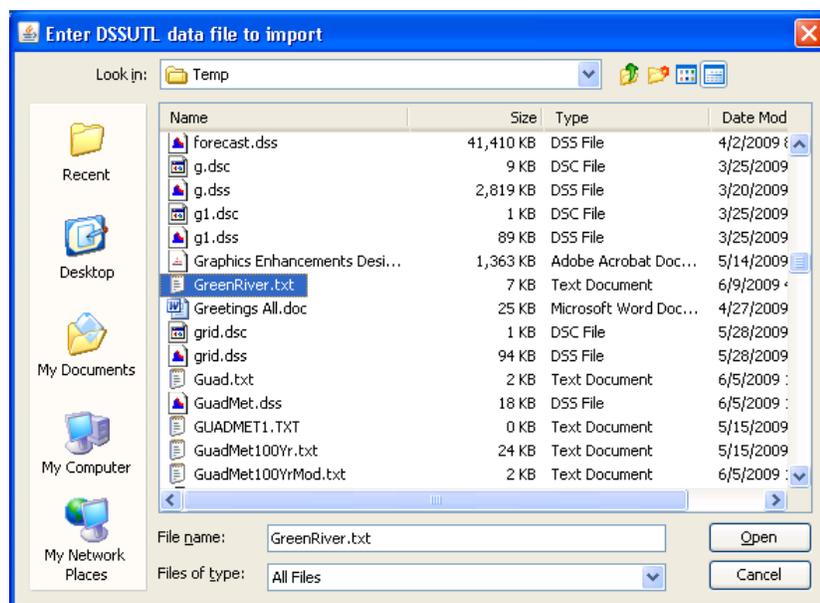


Figure 5.40 Selecting a DSSUTL Write Data File to Import

2. Select your file to import. Data must be produced by the DSSUTL WD command.

3. Navigate to the directory with your data file, select the file and then click **Open**.
4. The plug-in will read the file, parse the data and store it into the opened DSS file. This process may take several seconds to complete, depending on the amount of data and speed of your machine.

5.8.2 Exporting Data to DSSUTL

To export data from the DSSUTL format:

1. Select the pathnames for the data sets that you want to export, then from the **Data Entry** menu, point to **Export**, click **Dssutl Write Data File**.
2. A file selection browser will be displayed. Navigate to the directory you wish to export the data to, type the name of file and Click **Save**. All data will be saved in one file.

5.9 Importing North Carolina DWR CRONOS Data

The North Carolina Department of Water Resources developed a plug-in to import data from the CRONOS database into HEC-DSS. This plug-in is supported by North Carolina DWR. For questions, please contact them directly. The web site is <http://www.newater.org/wrisars/dss>.

The CRONOS Plug-in, developed by NC DWR, can search and retrieve the water and weather data for North Carolina and the surrounding states from NC Climate Retrieval and Observations Network of the Southeast Database (CRONOS) and store the data into a HEC-DSS file. The map and table search engine in [Water Resources Information, Storage, Analysis, and Retrieval System \(WRISARS\)](#) can be used with the CRONOS Plug-in to enhance the search capability. An example of the **NC DWR CRONOS Download** dialog box is shown in Figure 5.41 (page 5-38).

To import data from CRONOS:

1. In HEC-DSSVue, create a new DSS file or open an existing one.
2. In the HEC-DSSVue main window, from the **Data Entry** menu, point to **Import**, click **NC DWR CRONOS**, as shown in Figure 5.42 (page 5-38) the **NC DWR CRONOS Download** dialog box will Open (see Figure 5.41, page 5-38).

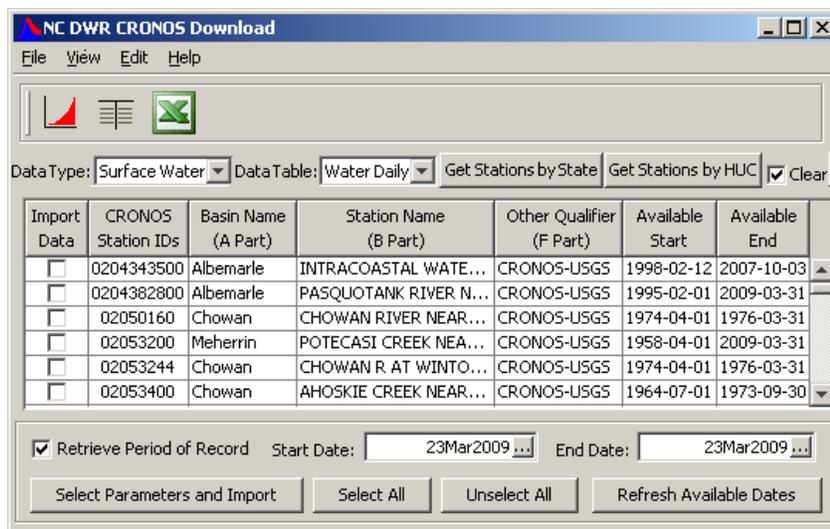


Figure 5.41 NC DWR CRONOS Download Dialog Box

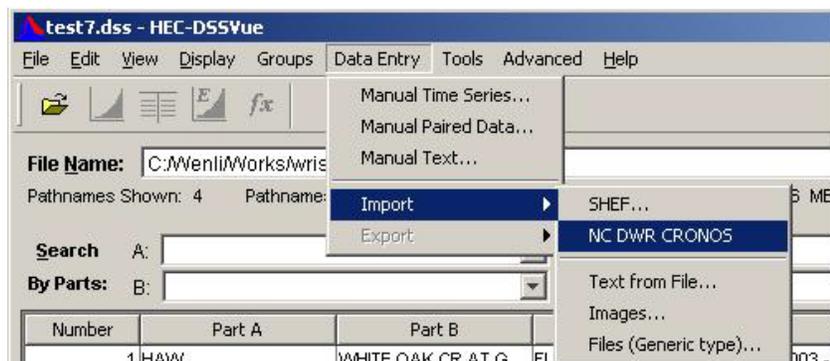


Figure 5.42 Importing ND DWR CRONOS Data

- From the **NC DWR CRONOS Download** dialog box (Figure 5.41) from the **Data Type** list (Figure 5.43), select a data type for the data to be imported.

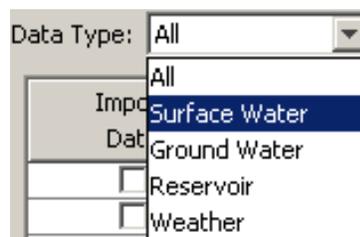


Figure 5.43 Data Type Selection

- Set the format for the data that is to be imported, from the **NC DWR CRONOS Download** dialog box (Figure 5.41), from the **Data Table** list (see Figure 5.44, page 5-39), select the data table style.

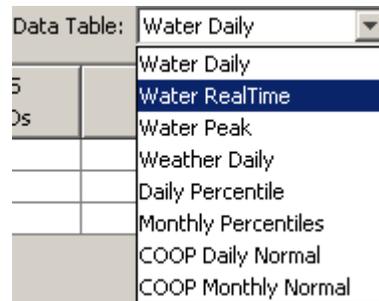


Figure 5.44 Data Table Selection

5. From the **NC DWR CRONOS Download** dialog box (see Figure 5.41, page 5-38), click **Get Stations by State**, then select a state from the **Select State** list, or click **Get Stations by HUC**, and then select a HUC. Click **OK** to search the stations and you will see the selected stations in the station table.
6. If you select **Clear Stations**, then the station table will be cleared when you select another group of stations.
7. If you want to do a more specific search, click **Use WRISARS Search Tool**, this will lead you to the [WRISARS search page](#).
8. You can save the station table to a *.cronos* text file by from the **File** menu, click **Save Station Table**.
9. You can open a previously saved station table from an existing *.cronos* text file, from the **File** menu, click **Open Station Table**.
10. You can open a station table directly by clicking a file name (e.g. *StationTableC.cronos*) below the **Close** section from the **File** menu.
11. Select stations in the station table.
12. You can click the column title to sort the station table by that column, e.g. click **Available End** to sort by the available end timestamps. The columns in the table are shown in Figure 5.45.

Import Data	CRONOS Station IDs	Basin Name (A Part)	Station Name (B Part)	Other Qualifier (F Part)	Available Start	Available End
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Figure 5.45 Column Header Titles

13. To select or unselect all the rows in the station table, click **Select All** or **Unselect All**, respectively.
14. You can delete the checked rows from station table, from the **Edit** menu, click **Delete Checked Rows**.
15. You can also add rows in front of the current row, from the **Edit** menu, click **Insert Rows**.
16. If you want to use the Station IDs for B parts, from the **Edit** menu, click **Set B Part to Station ID**.
17. If you want to use the station names for B parts, from the **Edit** menu, click **Set B Part to Station Name**. The stations names are used for B parts by default.
18. If you just want to import a part of the data, then set up the **Start Date** and **End Date**, otherwise select **Retrieve Period of Record**.

(You can click **Refresh Available Date** to get the most accurate available dates information.) See Figure 5.46 for an example of this toolbar.



Figure 5.46 Setting the Time Window for Data Retrieval

19. Click **Select Parameters and Import** to open the **Select Parameters** window for the selected stations. The descriptions for the parameters are shown on the right of the window. By default, all parameters are selected. Click **Unselect All** or **Select**, or you can select a few parameters manually. If you select the upper checkbox in the **All** column, then the whole row will be selected automatically. Click **Import** to import the data from the CRONOS database to the DSS file you just opened or created. An example of the **Select Parameters** window is shown in Figure 5.47.

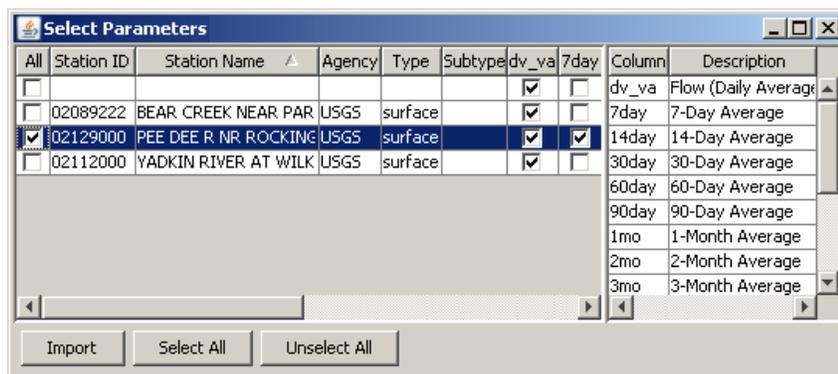


Figure 5.47 Select Parameters Dialog Box

20. You can click **Plot** , **Tabulate** , or **Tabulate in MS Excel**  to open the **Select Parameters** dialog box, select some parameters, and then import the data and show the data in a plot, table, or Excel directly.
21. From the **View** menu, click **Tabulate**, **Plot**, or **Tabulate with Excel** to import the selected station-parameters and show the data in a plot, table or Excel.
22. Examine the imported or updated data in HEC-DSSVue root window, table, plot, or Excel.