

CHAPTER 3

Displaying & Editing Data

HEC-DSSVue allows you to plot, tabulate, and edit data in HEC-DSS files. This chapter covers setting a time window to access and view time series data with, tabulating time series and paired data, editing data and displaying supplemental data associated with a data set. Plotting is covered in the chapter "Customizing Plots".

For HEC-DSSVue Version 2.0, you can "drag" data sets from the main window onto a plot or table to add that data set to the plot or table. The file that you are dragging from does not need to be the same as where the original data came from; in fact you can drag a data set from a different instance of HEC-DSSVue.

3.1 Setting a Time Window

You can specify the time window for data you want displayed in plots and tables and to perform math functions on. For example, if you have a set of HEC-DSS records ranging from October 1, 1993, to December 30, 1993, you can specify a narrower time window such as 05OCT1993 to 25OCT1993 for plots, tables, and operations with math functions.

To set the Time Window:

1. From the **Display** menu, click **Time Window**. The **Set Time Window** dialog box will open (see Figure 3.1, page 3-2).
2. You may select no time window, which will retrieve all the data for a data set, enter specific dates and times, use a time window relative to the current time, or access data by water year.
3. To access all data in a data set, select **No Time Window** (see Figure 3.1, page 3-2).
4. To set a specific time window, select **Specific Time Window**.
 - a. If you wish, you can set the fields to the current time by clicking **Set Current Time** and then change what you want manually.
 - b. To specify dates and times:
 - i. Enter the **Start Date** and **End Date** (see Figure 3.1, page 3-1). Although a variety of formats will be recognized for the date, the typical format is DDMMMYYYY.

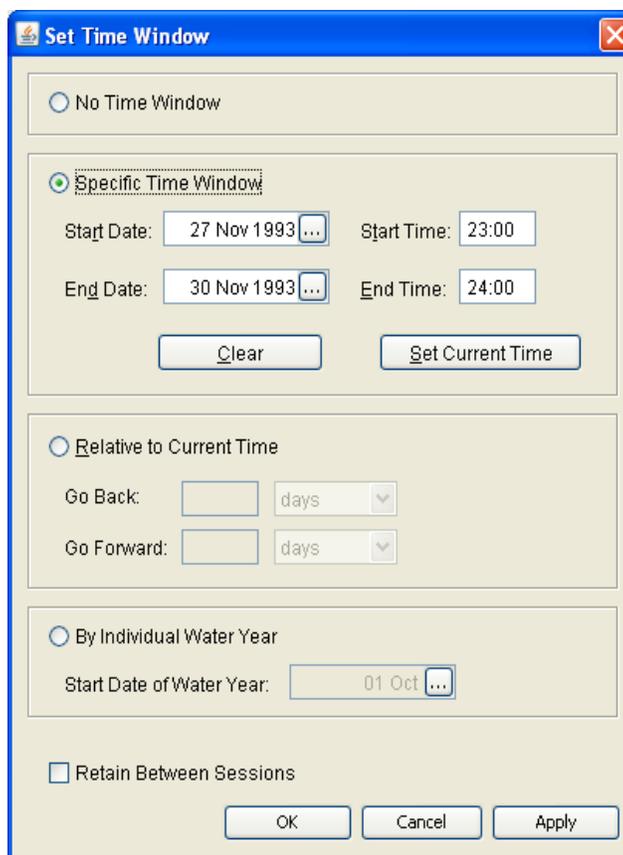


Figure 3.1 Set Time Window Dialog Box

- ii. Enter the **Start Time** and **End Time** in 24-hour format (e.g., for 2:00 PM, type "1400").
 - c. You may select the starting and ending dates from the calendar tool. From the **Start Date** box, click on **...**. The calendar tool in a monthly format will open (Figure 3.2). You may scroll through months or years by using the appropriate arrow key at the top of the box.
5. To set a time window relative to the current time, select **Relative to Current Time** (Figure 3.1).
- a. Select the units you want to go back and forward from the current time. You can select **hours, days, months, or years**.
 - b. Enter the **Go Back** and **Go Forward** units.
 - c. If you do not set a unit, **No Time Window** will be set.

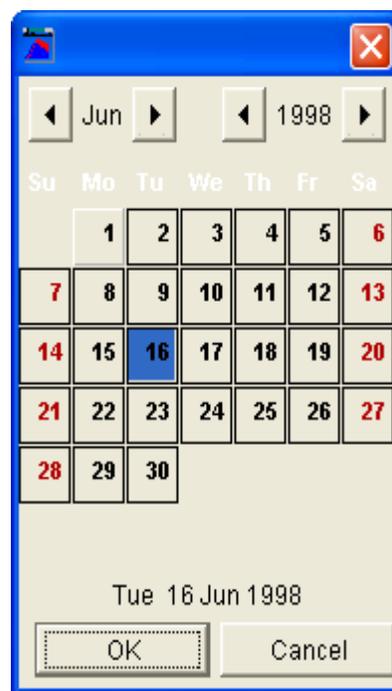


Figure 3.2 Calendar Tool

6. Accessing DSS data by water year, from the **Set Time Window** dialog box select (see Figure 3.1, page 3-2) **Individual Water Year**. You can change the default start date of the water year from October first by setting a new date in the **Start Date of Water Year** box. This will read all the data in a data set and then separate it into individual data sets by water year. This setting is primarily useful when using math functions in HEC-DSSVue. If you plot data when this setting is selected, you should choose **Plot Individual Data Sets**.
7. To keep your settings for the next time you run HEC-DSSVue, select **Retain Between Sessions**. The next time you execute HEC-DSSVue, your time window will be set.
8. Click **OK** the **Set Time Window** dialog box will close (see Figure 3.1, page 3-2), and the time window settings will be applied.

3.2 Display Data Options

Two options are provided as a quick way to compare time series data sets for different time periods or for different amounts. The options are turned on or off by selecting and un-selecting them from the **Display** menu, point to **Display Data Options**, and the two available options are - **Normalize** and **Synch data set times to first**.

Normalize will subtract the differences between the values of first and the second or subsequent data sets from the corresponding data set, so that the curves all start at the same value (which is the value of the first data point in the first data set). This is often used to compare cumulative precipitation curves, which usually start at different values.

Synch data set times to first will subtract the differences between the times of first and the second or subsequent data sets from the corresponding data set, so that the curves all start at the same time (which is the time in the first data set). This is often used to directly compare hydrographs for different years or time periods.

Each option will remain on until you turn it off or the program exits. The options can be used in combination with each other. For example, if you want to compare cumulative precipitation curves for different years, set each option to on. Figure 3.3 shows such an example of normalized cumulative precipitation for years 1986 and 1995, synched to the same start time.

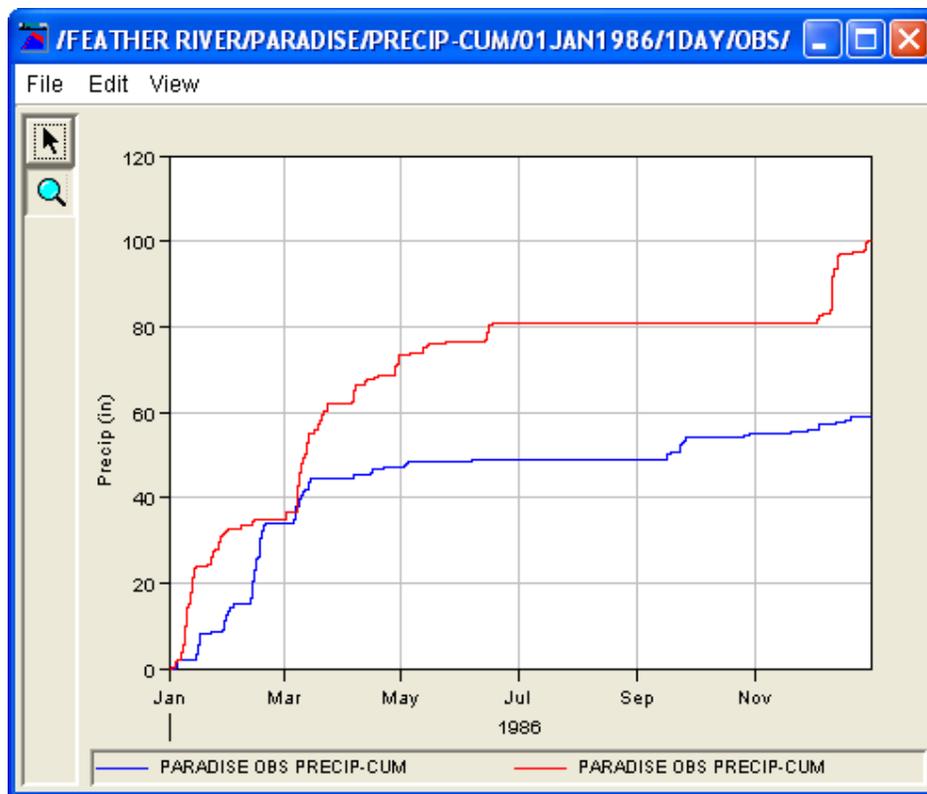


Figure 3.3 Normalized and Time Synchronized Precipitation Data for Years 1986 and 1995

3.3 Viewing Tabular Data

An example table produced using HEC-DSSVue is shown in Figure 3.4. Tables allow you to view and edit HEC-DSS data in a vertical scrolling

Ordinate	Date / Time	BALDE FLOW CALIBRATED	SPRCR FLOW BB
Units		CFS	CFS
Type		INST-VAL	INST-VAL
1	27 Nov 93, 23:00	205.7	40.8
2	27 Nov 93, 24:00	322.9	49.6
3	28 Nov 93, 01:00	471.0	91.8
4	28 Nov 93, 02:00	641.6	195.9
5	28 Nov 93, 03:00	850.6	387.7
6	28 Nov 93, 04:00	1,109.5	711.0
7	28 Nov 93, 05:00	1,414.7	1,118.3
8	28 Nov 93, 06:00	1,694.9	1,517.5
9	28 Nov 93, 07:00	1,914.0	1,872.3
10	28 Nov 93, 08:00	2,072.2	2,131.0
11	28 Nov 93, 09:00	2,190.5	2,284.4
12	28 Nov 93, 10:00	2,289.6	2,357.4

Figure 3.4 Example Tabulation from HEC-DSSVue

window that shows the ordinate (starting from the start date/time), the date and time stamp, and the values for the selected data sets. From the **File** menu of a table dialog box (see Figure 3.4, page 3-4), you can view the tabular data in plot format by clicking **Plot**. Respectively, you can tabulate data displayed in a plot dialog box, from the **File** menu, click **Tabulate**.

3.3.1 Accessing Tables

To access tables, first select the pathnames of the records you wish to view. There are several ways to select pathnames:

- Double-click on an individual pathname in the **HEC-DSS Pathname** list.
- Highlight a pathname in the **HEC-DSS Pathname** list then click **Select**. Until you select a pathname, the **Select** button remains inactive.
- Click and drag your mouse to select a series of pathnames, and then click **Select**. You can also use **Ctrl+click** to select multiple, non-consecutive pathnames.
- If you wish to select all of the pathnames, click **Select All** from the **Edit** menu.
- If no pathnames are in the selection list, individual pathnames can just be highlighted for quick selection.
- Drag additional datasets from the main screen onto the table to add them to the table.

Once you have selected the pathnames you want to visualize, you can open a table by clicking the **Tabulate**  button from the **Tool Bar**, or from the **Display** menu click **Tabulate**.

3.3.2 Customizing the Display of Tabular Data

From a tabular data dialog box, from the **View** menu, you can choose to display commas in numbers by clicking **Commas**. You can reverse the order of the table by clicking **Reverse Order**. For time series data, this option will show the latest values first. The date and time of the data can be tabulated in separate columns by clicking **Date and Time Separately**. To have the dates display the years with four digits, click **Date With 4 Digit Years**. You can set the precision of decimal places for your data by pointing to **Show Decimal Places** and then clicking the number of decimal places you wish to display (see Figure 3.5, page 3-6). You can also change how missing values are displayed by pointing to **Show Missing As** and then by clicking **blanks** (the default), **-901.0, M**, or **-M-**.

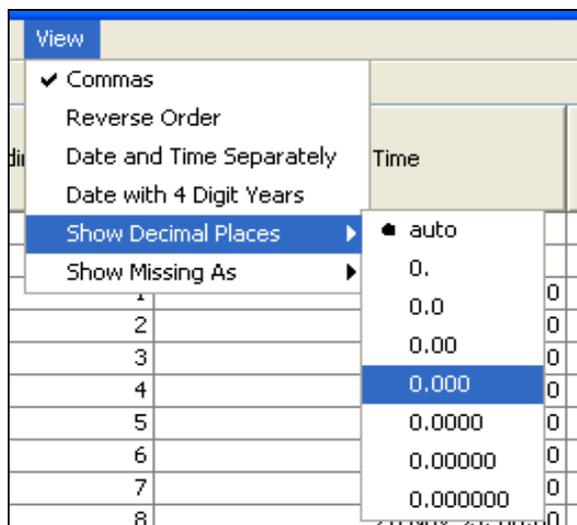


Figure 3.5 HEC-DSSVue Tables have Several Options for Displaying Data

3.3.3 Searching for Values

You can search for specific values in your dataset, from a tabulate dialog box (see Figure 3.4, page 3-4), from the **Edit** menu click **Find** (Figure 3.6), or press the **F3** key. Using either option will open the **Find** dialog box (Figure 3.7).

In the **Find what** box (Figure 3.7), enter the item that you are searching for in your dataset. When you click **Find Next** (Figure 3.7), the next value that matches will be highlighted. You can search up from where your cursor is, or

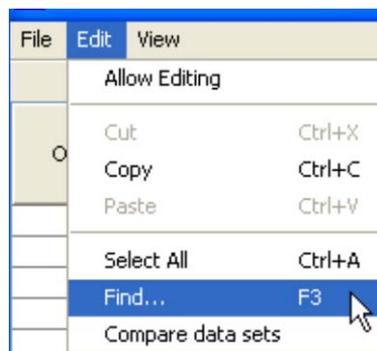


Figure 3.6 Tabulate Edit Menu

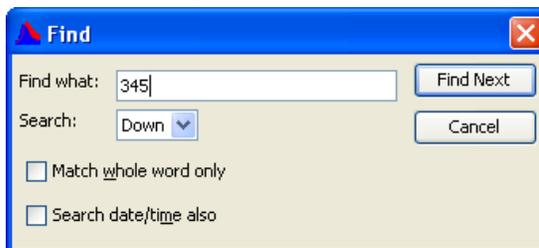


Figure 3.7 Find Dialog Box

search down. You have the option of searching for the exact number or part of that number. You can also search for a date or time.

3.3.4 Comparing Datasets

If you tabulate two or more similar time series data sets, you can compare values from both sets from the table. From a tabulate dialog box (see Figure 3.4, page 3-4), from the **Edit** menu, click **Compare data sets** (Figure 3.8)

A message will appear displaying the number of values that differ in the selected data sets (Figure 3.9) and the differences between the two data sets will be highlighted in red, as show in Figure 3.10.

For more information and options to compare datasets, see Chapter 4, Section 4.7.

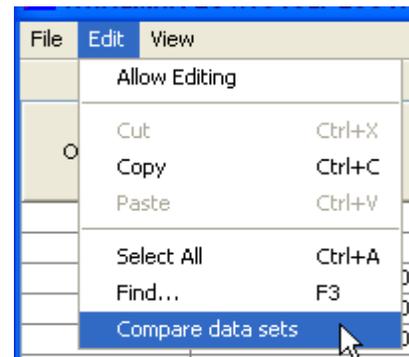


Figure 3.8 Compare Data Sets

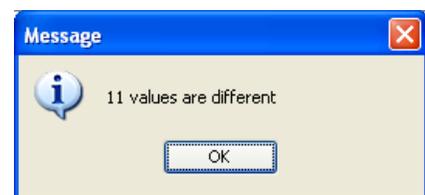


Figure 3.9 Display of the number of values that vary

The image shows a data comparison window titled '/BEECH CREEK HW/FLOW/01SEP2001/1HOUR/FOCO/'. The window contains a table with the following data:

Ordinate	Date	Time	BEECH CREEK HW FLOW FOCO	BEECH CREEK HW FLOW SOCO
134	26 Sep 2001	12:00	1,998.6	1,998.6
135	26 Sep 2001	13:00	2,375.9	2,375.9
136	26 Sep 2001	14:00	2,821.5	2,821.5
137	26 Sep 2001	15:00	3,304.1	3,304.1
138	26 Sep 2001	16:00	3,770.9	3,770.9
139	26 Sep 2001	17:00	4,243.0	4,103.6
140	26 Sep 2001	18:00	4,310.4	4,353.0
141	26 Sep 2001	19:00	4,377.8	4,557.5
142	26 Sep 2001	20:00	4,445.2	4,746.4
143	26 Sep 2001	21:00	4,485.6	4,892.6
144	26 Sep 2001	22:00	4,477.9	4,942.2
145	26 Sep 2001	23:00	4,470.1	4,869.3
146	26 Sep 2001	24:00	4,435.0	4,728.3
147	27 Sep 2001	01:00	4,348.5	4,567.3
148	27 Sep 2001	02:00	4,262.0	4,407.4
149	27 Sep 2001	03:00	4,175.5	4,253.0
150	27 Sep 2001	04:00	4,104.0	4,104.0
151	27 Sep 2001	05:00	3,960.3	3,960.3
152	27 Sep 2001	06:00	3,821.8	3,821.8
153	27 Sep 2001	07:00	3,688.1	3,688.1
154	27 Sep 2001	08:00	3,559.3	3,559.3
155	27 Sep 2001	09:00	3,425.8	3,425.8

Figure 3.10 Comparison of Two Data Sets

3.4 Editing Tabular Data

In HEC-DSSVue, you can edit data directly in tables, but first you must set the table to allow editing.

From a tabulate dialog box (see Figure 3.4, page 3-4), from the **Edit** menu, click **Allow Editing** (Figure 3.11). This will set the table editable and allow you to manually edit the listed data. When this option is checked, the background of non-editable table cells display grey and the **Cut**, **Paste**, **Insert Rows**, and **Delete Rows** commands become available from the **Edit** menu.

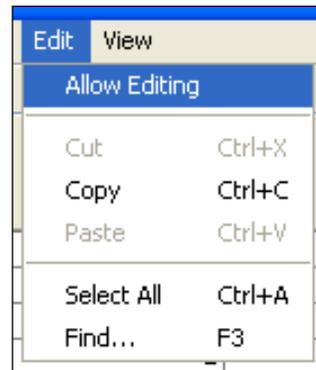


Figure 3.11 Edit Menu - Allow Editing

If the **Allow Editing** option is disabled (grayed-out), you may not have permission to write to the file or the table was started from a dialog that does not have access to write to the file (such as a plot window).

Changes made to a table can be saved, from the **File** menu, click **Save** or click **Save As**. If you do not save your data before you close the table window, HEC-DSSVue will prompt you to save your changes before it closes the window.

3.4.1 Selecting Table Cells

To select an individual table cell, simply click on it.

To select several consecutive cells, click, hold down and drag your mouse over the cells. You can also hold down the **Ctrl** key and click to select multiple, non-consecutive records.

If you wish to select all rows in a table, from the **Edit** menu, click **Select All**.

You can also use shortcut menu items to edit multiple selected cells in tables (Figure 3.12).

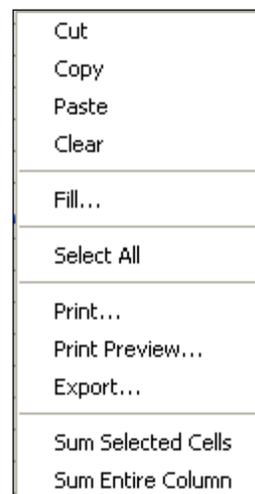


Figure 3.12 Shortcut Menu

3.4.2 Cutting and Pasting Data

The **Cut** command removes data from the cell and places it on the computers clipboard in ASCII format. For regular-interval time series data, the **Cut** command will set the emptied cell to the missing data flag.

You can cut data from one set of cells and paste it into another set of cells (in the same table or another table). To do a cut and paste:

1. From the **View** menu, click **Allow Editing**.
2. Select the cells you want to **Cut** the data from.
3. From either the **View** menu or the shortcut menu (see Figure 3.12, page 3-8), click **Cut**.
4. Select the cells where you want to **Paste** the data.
5. From either the **View** menu or the shortcut menu (see Figure 3.12, page 3-8), click **Paste**.

*Tip: The keyboard shortcut keys, **Ctrl + x** and **Ctrl + v** also work for cut and paste.*

3.4.3 Copying and Pasting Data

The **Copy** command copies selected cell data and places it on the computer's clipboard in ASCII format.

You can copy data from one set of cells and paste it into another set of cells (in the same table or another table). To do a copy and paste:

1. From the **View** menu, click **Allow Editing**.
2. Select the cells you want to **Copy** the data from.
3. From either the **View** menu or the shortcut menu (see Figure 3.12, page 3-8), click **Copy**.
4. Select the cells where you want to **Paste** the data.
5. From either the **View** menu or the shortcut menu (see Figure 3.12, page 3-8), click **Paste**.

*Tip: The keyboard shortcut keys, **Ctrl + x** and **Ctrl + v** also work for cut and paste.*

3.4.4 Clearing Table Cells

To delete and remove data from table cells use the **Clear** command. Cleared data is not saved to the computer's clipboard, so you will not be able to paste the data back into the table. However, for time series data, the **Clear** command will remove the data from the cell and add a missing flag to the emptied cell. To clear table cells:

1. From the **View** menu, click **Allow Editing**.
2. Select the cells you want to clear.
3. From the shortcut menu (see Figure 3.12, page 3-8), click **Clear**.

3.4.5 Adding and Inserting Rows

Depending on what type of data is being edited in a table, rows can be inserted, appended, or added to the beginning or end of the table.

Appending rows is automatic when **Allow Editing** is set. When **Allow Editing** is selected, two blank rows automatically appear at the end of the table. When ever you enter data in a row at the bottom of the table, an additional blank row will be appended. When you save the data, any blank rows at the end of the table are removed automatically.

For regular interval time series data, rows can only be inserted at the beginning or end of the data set. For irregular interval time series data and paired data, rows can be inserted between any existing table rows. To insert a row into the table:

1. Using your mouse pointer, click on the row you would like to insert rows next to and then from the **Edit** menu, click **Insert Rows**.
2. The **Extend Data Set** dialog box will open (Figure 3.13). This dialog may be different from what's pictured in Figure 3.13 depending on what type of data is displayed in the table.

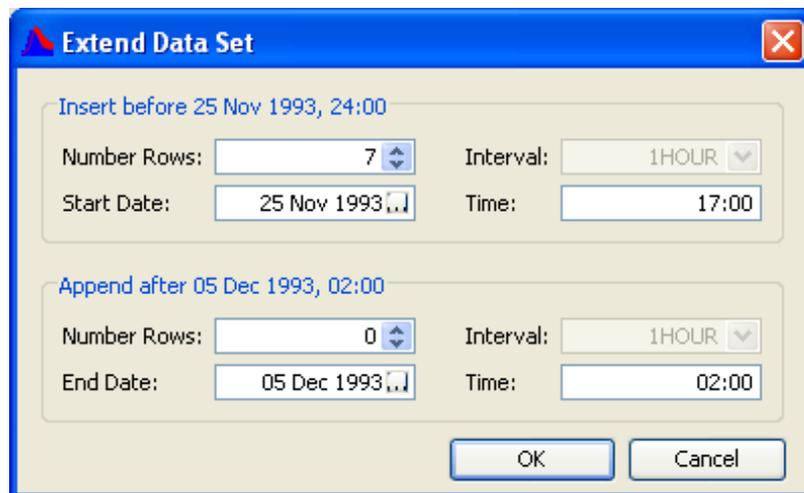


Figure 3.13 Extend Data Set Dialog Box for Regular Interval Data

3. For irregular interval time series data (see Figure 3.14, page 3-11), you have the option to **Insert between the selected dates**, **Insert before the first date**, and **Append after the last date**. Regular interval data can only have data inserted before and after the existing time steps. Each choice requires you to enter the number of rows that will be added. From the **Number Rows** list, enter or select the number of rows that will be added to the table at the given area.

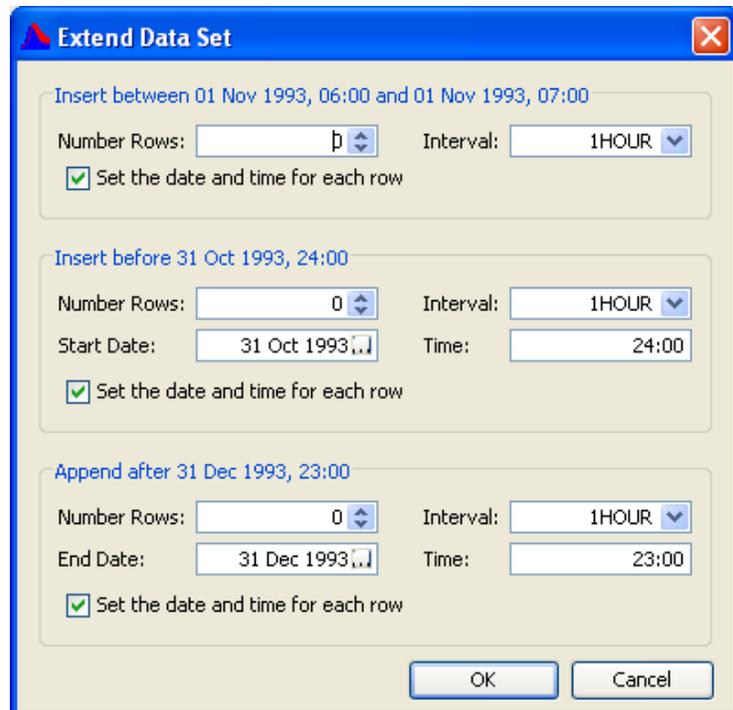


Figure 3.14 Extend Data Set Dialog Box for Irregular Interval Data

4. Irregular interval time series data requires an interval to be selected. From the **Interval** list, select an interval, default is *1HOUR*. If you would like the data and time filled for each inserted row, be sure **Set the data and time for each row** is selected.
5. For a paired data table, all that is required is entering the number of rows you would like to insert. From the **Edit** menu, click **Insert Rows**, the **Insert Rows** dialog box will open (Figure 3.15). In the **Number to insert** box, enter the number of rows you would like to add. Paired data tables also allow you to add additional columns, from.

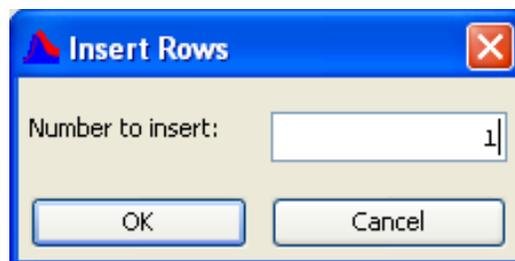


Figure 3.15 Insert Rows Dialog Box

6. Once you are done entering information for the insert, click **OK**.
7. The entered number of blank rows will be inserted at that row, moving the original row that you selected down.

3.4.6 Deleting Rows and Columns

You may delete rows from a table when working with irregular-interval time series data and paired data. To delete a row from a table, select the row and then from the **Edit** menu, click **Delete Rows**.

If you are working with regular interval time series data, you will not be able to delete rows; instead, the **Delete Rows** function will change the data values to missing. This is the same as clicking **Clear** (see Figure 3.12, page 3-8) from the shortcut menu.

In a paired data table you can delete a column. To delete a paired data column, select the column and then from the **Edit** menu, click **Delete Column**. The **Delete Column** message box will open (Figure 3.16), requiring you to verify you would like to delete the entire column. Click **Yes** to finish deleting the column.

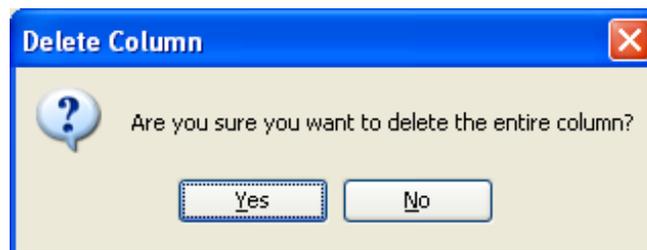


Figure 3.16 Delete Column Message Box

3.5 Printing, Copying, and Exporting Tables

HEC-DSSVue tables offer several commands that allow you to print, copy or export data and then paste tables into other applications such as Microsoft Excel and Word. The following sections describe each in detail.

3.5.1 Printing Tables

You can access the **Print** and **Print Preview** commands from either the **File** menu (Figure 3.17) or from the shortcut menu (see Figure 3.18, page 3-13) of the table window.

In a table, the **Print** and **Print Preview** commands open the **Properties** dialog box (see Figure 3.19, page 3-13), which offers options on three tabs.

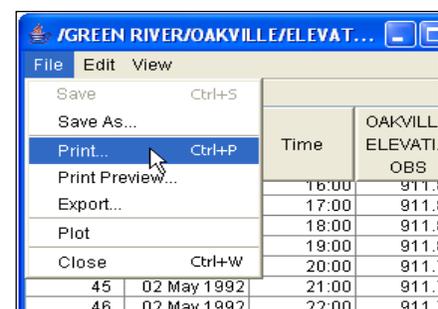


Figure 3.17 File Menu - Tabulate Dialog Box

The **Page** tab allows you to specify the page **Orientation**, **Scaling**, and **Selection**. You can also choose to print the table as **ASCII**, **Repeat Headers** on every page, and print the **Gridlines**.

On the **Header/Footer** tab you can type in the header and footer you want to appear on your printed pages.

The **Table Title** tab offers a default title for the table based on the data source, which you can change.

On the **Properties** dialog box, the **Print** command performs two functions, depending on whether you arrived at the dialog box via the **Print** command or the **Print Preview** command.



Figure 3.18 Print Shortcut Menu

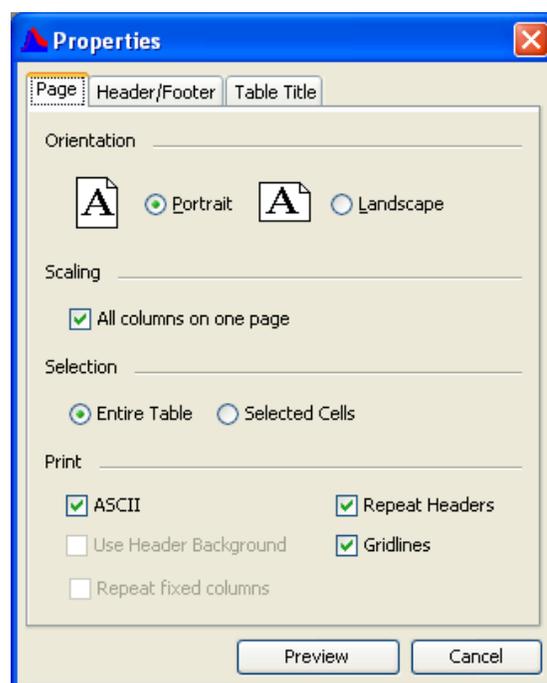
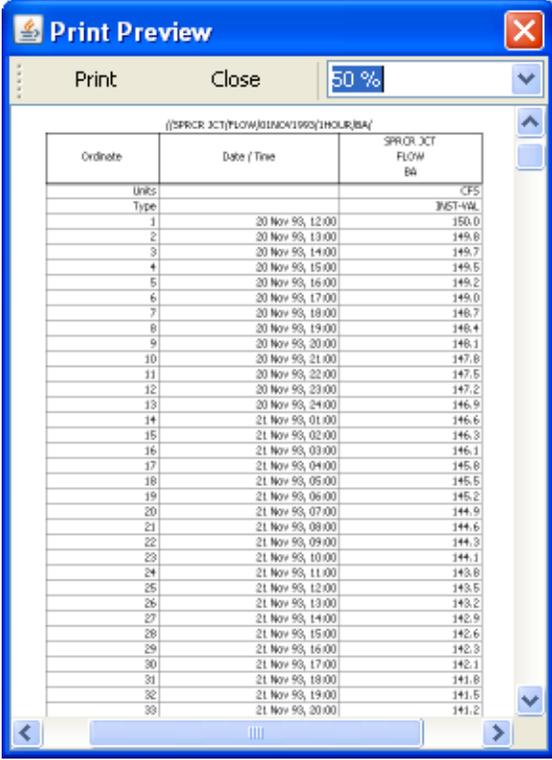


Figure 3.19 Properties Dialog Box - Printing

If the **Properties** dialog box was opened using the **Print Preview** menu, the **Preview** button on the **Properties** dialog box opens a **Print Preview** dialog box that allows you to view the table as it will look when it is printed, see Figure 3.20 (see page 3-14). You can click **Print** in the **Print Preview** dialog box to print your table.

From the **Print** command, the **Print** button on the **Properties** dialog box opens a Windows-style print dialog box where you can choose your



Ordinate	Date (Time)	SPRIOR_JCT FLOW BA
UNITS		CFS
Type		INST-WAL
1	20 Nov 95, 12:00	150.0
2	20 Nov 95, 13:00	149.8
3	20 Nov 95, 14:00	149.7
4	20 Nov 95, 15:00	149.5
5	20 Nov 95, 16:00	149.2
6	20 Nov 95, 17:00	149.0
7	20 Nov 95, 18:00	148.7
8	20 Nov 95, 19:00	148.4
9	20 Nov 95, 20:00	148.1
10	20 Nov 95, 21:00	147.8
11	20 Nov 95, 22:00	147.5
12	20 Nov 95, 23:00	147.2
13	20 Nov 95, 24:00	146.9
14	21 Nov 95, 01:00	146.6
15	21 Nov 95, 02:00	146.3
16	21 Nov 95, 03:00	146.1
17	21 Nov 95, 04:00	145.8
18	21 Nov 95, 05:00	145.5
19	21 Nov 95, 06:00	145.2
20	21 Nov 95, 07:00	144.9
21	21 Nov 95, 08:00	144.6
22	21 Nov 95, 09:00	144.3
23	21 Nov 95, 10:00	144.1
24	21 Nov 95, 11:00	143.8
25	21 Nov 95, 12:00	143.5
26	21 Nov 95, 13:00	143.2
27	21 Nov 95, 14:00	142.9
28	21 Nov 95, 15:00	142.6
29	21 Nov 95, 16:00	142.3
30	21 Nov 95, 17:00	142.1
31	21 Nov 95, 18:00	141.8
32	21 Nov 95, 19:00	141.5
33	21 Nov 95, 20:00	141.2

Figure 3.20 Print Preview Dialog Box - Table

printer, set printer properties, and specify the number of copies to print. You can also print your table to a file instead of to a printer.

3.5.2 Exporting Tables

Tables can be exported and converted into a *.txt file. Once the table is in the form of a *.txt file, it can be opened in a different application such as Microsoft Excel or Word.

From the shortcut menu or the **File** menu, click **Export**, the **Table Export Options** dialog box will open (Figure 3.21).

In the **Table Export Options** dialog box, you can choose a **Field Delimiter** (**TAB**, **SPACE**, **COMMA**, **COLON**, or **SEMI-COLON**), specify **Fixed-Width Columns**, choose to display **Quoted Strings**, **Include Column Headers**, and opt to **Print Gridlines** and a **Title**.

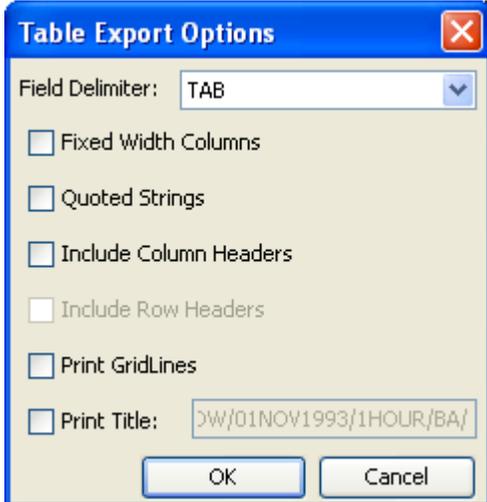


Table Export Options	
Field Delimiter:	TAB
<input type="checkbox"/>	Fixed Width Columns
<input type="checkbox"/>	Quoted Strings
<input type="checkbox"/>	Include Column Headers
<input type="checkbox"/>	Include Row Headers
<input type="checkbox"/>	Print GridLines
<input type="checkbox"/>	Print Title: DW/01NOV1993/1HOUR/BA/
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	

Figure 3.21 Table Export Options Dialog Box

3.5.3 Copying Tables to the Clipboard for Use in Other Applications

To copy a table to the clipboard, from a table dialog box, from the **Edit** menu, click **Copy** (Figure 3.22). You can also right-click inside the table and click **Copy** from the shortcut menu (Figure 3.23). To copy the entire

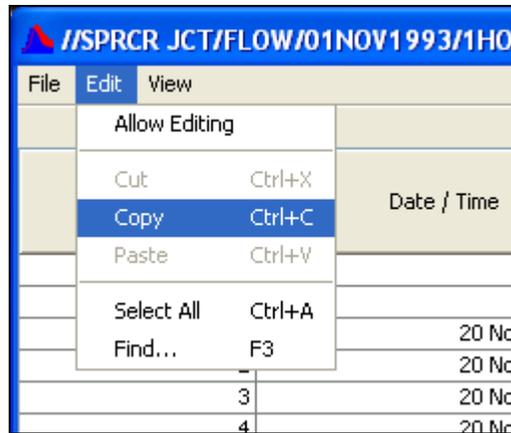


Figure 3.22 Edit Menu - Table Dialog Box

table from the shortcut menu, click **Select All** and then click **Copy**. You can then paste the table as tab-separated values into another application such as Microsoft Excel or Word. Only the data is copied to the clipboard; the table gridlines are not copied. (Use the export options when you want to copy table gridlines.)

You can also highlight a portion of the table and then click **Copy**. This will copy the portion of the table that you highlighted to the clipboard.

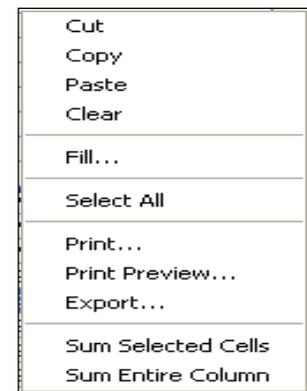


Figure 3.23 Shortcut Menu - Copy

3.5.4 Tabulate and Editing using MS Excel (Optional)

If the Excel plug-in is loaded, you can tabulate (or export) data in Microsoft Excel and edit time series data in Excel. Simply select the data sets you wish to tabulate as you normally would and then either press the **Excel** tool in the toolbar, or from the **Display** menu, click **Tabulate in Excel** (assuming you have Microsoft Excel installed). Figure 3.24 (see page 3-16) shows how the data is displayed in Excel.

To edit data in Excel, select your data sets and from the **Edit** menu, click **Edit in Excel**. This will load the selected data into an Excel spreadsheet

	A	B	C	D	E	F
1	A		MY BASIN	MY BASIN	MY BASIN	MY BASIN
2	B		RIVERSIDE	RIVERSIDE	RIVERSIDE	RIVERSIDE
3	C		FLOW	PRECIP-INC	STAGE	TEMP-AIR
4	E					
5	F		OBS	OBS	OBS	OBS
6	Units		CFS	INCHES	FEET	DEG-F
7	Type		INST-VAL	PER-CUM	INST-VAL	INST-VAL
8	1	01Mar1990 0100	33880	0.00	12.740	22.500
9	2	01Mar1990 0200	34120	0.00	12.760	21.200
10	3	01Mar1990 0300	34240	0.00	12.770	20.500
11	4	01Mar1990 0400	34240	0.00	12.770	19.800
12	5	01Mar1990 0500	34120	0.00	12.760	18.500
13	6	01Mar1990 0600	34000	0.00	12.750	17.800
14	7	01Mar1990 0700	33280	0.00	12.690	17.100
15	8	01Mar1990 0800	33280	0.00	12.690	21.200
16	9	01Mar1990 0900	32320	0.00	12.610	25.700
17	10	01Mar1990 1000	33160	0.00	12.680	29.500
18	11	01Mar1990 1100	34000	0.00	12.750	31.500
19	12	01Mar1990 1200	33880	0.00	12.740	35.200
20	13	01Mar1990 1300	33520	0.00	12.710	37.000
21	14	01Mar1990 1400	33280	0.00	12.690	40.800
22	15	01Mar1990 1500	32800	0.00	12.650	42.300
23	16	01Mar1990 1600	32320	0.00	12.610	44.100
24	17	01Mar1990 1700	31960	0.00	12.580	44.100
25	18	01Mar1990 1800	31600	0.00	12.550	41.500
26	19	01Mar1990 1900	31120	0.00	12.510	37.000
27	20	01Mar1990 2000	30560	0.00	12.460	35.800
28	21	01Mar1990 2100	30230	0.00	12.430	31.500
29	22	01Mar1990 2200	30010	0.00	12.410	29.500
30	23	01Mar1990 2300	29680	0.00	12.380	28.200
31	24	02Mar1990 0000	29790	0.00	12.390	27.000
32	25	02Mar1990 0100	29790	0.00	12.390	25.700
33	26	02Mar1990 0200	29680	0.00	12.380	24.400

Figure 3.24 Tabular Data Exported to Excel

and then read it back to DSS once you have saved it. In this mode, you may not add or delete rows or columns; you can only change the data. After you are finished, save the Excel spreadsheet and then click **OK** or **Cancel** from the dialog from HEC-DSSVue.

Note - Take caution with dates and time in Excel. Excel shows times as "Beginning of Period", while the HEC-DSS convention shows times as "End of Period". A data value for midnight will show up as 2400 hours at the end of the day in HEC-DSS, while Excel will display that as 0000 hours for the next day. For daily data, the hours might not be shown in Excel and the data can be misinterpreted to be for the following day.

3.6 Graphical Editing

You can view and edit time series data in a combined plot/table using the **Graphical Editor** (Figure 3.25) for HEC-DSSVue. To access the HEC-DSSVue **Graphical Editor**, select one or more pathnames from the main HEC-DSSVue screen, from the **Edit** menu, click **Graphical Edit** or from the toolbar click the **Graphical Edit**  button. Only time series data can be edited through the graphical editor.

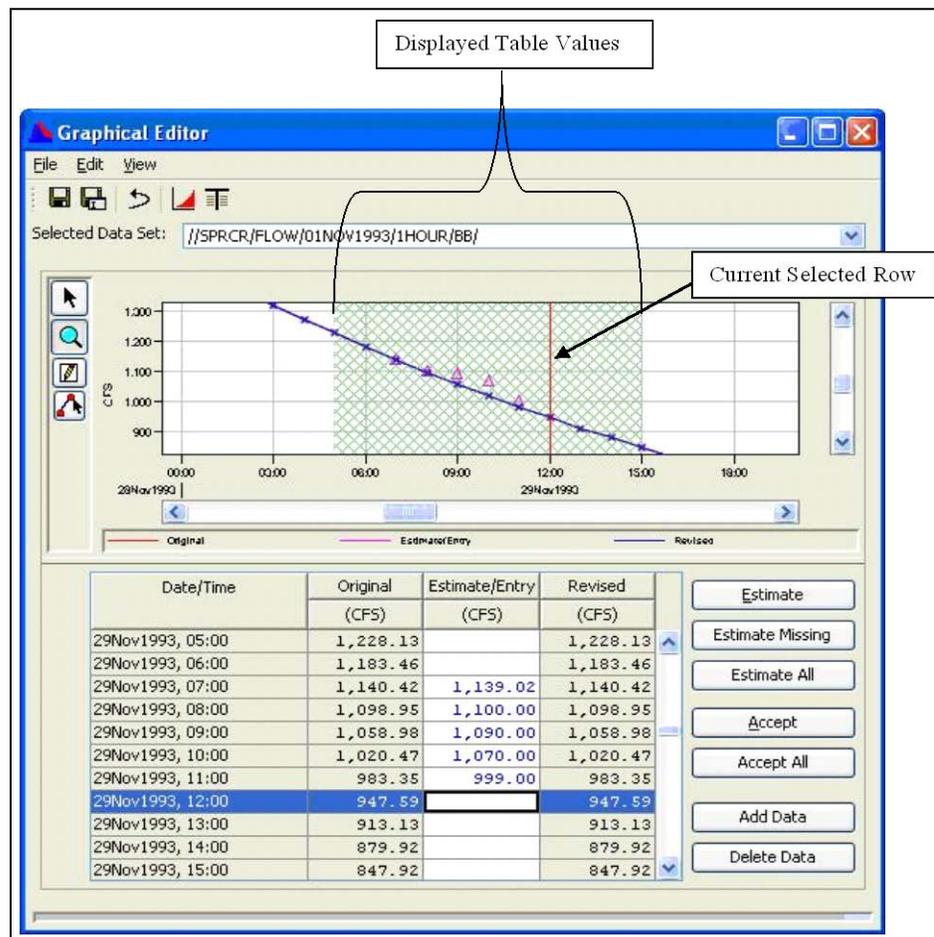


Figure 3.25 Graphical Editor

The **Graphical Editor** displays an editable plot of the data on the top of the editor and a scrollable table of the data on the bottom of the editor. The area of the data that is visible in the table is marked with a green hash region in the plot. As you scroll through the table, the green hash area moves along with the data that is displayed. When you select a point on the curve or in the table, a red vertical line is drawn at that point to show which value has been selected.

You can edit data in the **Graphical Editor** by drawing a curve with your mouse, or by selecting a point on the curve and moving that point up or

down, or by changing a value in the associated table. You can also have the editor linear interpolate missing points, or use the other fill options associated with tables.

You can only edit one curve at a time, but you can plot other data sets on the same graph for comparison purposes. You can also select multiple data sets and scroll through them as you edit. The major components of the **Graphical Editor** are shown in Figure 3.25 (page 3-17).

The components of the graphical editor are:

- **Current Selected Row** shows what data value is selected on the plot and its corresponding row in the table.
- **Displayed Table Values** indicates the area in the plot that corresponds to the data showing in the table.
- **Selected Data Set** field displays the pathname for the data set being edited.
- **Estimate** button generates a linear interpolation for selected rows for missing data or copies the original data into the editable field. The **Estimate All** button performs this for all rows in the table. Data must be in the editable field before the point editor can be used.
- The **Accept** button copies data from the **Estimate/Entry** column into the **Revised** column for the selected rows. This is for intermediate saving of the last data edited. If you want to retain all changed values, the **Accept All** button copies all data from the **Estimate/Entry** column into the **Revised** column.
- The **Add Data** button adds rows for irregular interval time series data. A dialog will be displayed to set the date and time for the row added.
- The **Delete Data** button removes rows for irregular-interval time series data. You cannot remove regular-interval data; you can only change it to missing.
- **Original** column contains the values of the original data set. The values are generally depicted with a red curve in the plot with each point marked by an 'x'. If the value is the same as the one in the **Revised** column, that point will be over drawn with the blue 'x' as well.

- **Estimate/Entry** (edit) column is an empty editable column where you enter data manually or edit with the point tool. These values show-up in the plot as magenta triangles. When you are satisfied with the changes you made in this column, press the **Accept** or **Accept All** button.
- **Revised** (edited) column contains the final values that will be saved when **Save** or **Save As** is selected. These values display as a blue 'x' in the plot.

3.6.1 Graphical Editor Tools and Buttons

The **Graphical Editor** contains mouse tools and shortcut icon buttons to help aid with the editing process. Available mouse tools:

 **Select Point** tool selects a point on the curve to edit by moving the mouse to that point and clicking the left mouse button.

 **Zoom tool** put the mouse in a zoom mode. To zoom-in, move the mouse to one corner of the area you want to zoom-in to, click and hold down the left mouse button while dragging the mouse to the opposite corner and the release the button. To zoom-out, click the right mouse button. The graph is zoomed-out in increments.

 **Single Point** edit tool puts the mouse in a point edit mode, as described in Section 3.6.3.

 **Line Draw** is a multi-point edit tool that puts the mouse in a line draw mode, as described in the next section.

Available tool bar buttons:

 **Save** button saves the data in the **Revised** column to the DSS file without changing the pathname.

 **Save As** button saves the data in the **Revised** column to the DSS file after allowing you to change one or more of the pathname parts.

 **Undo** button restores the values to the original data set, undoing all changes.

 **Plot** button plots the original and revised data in a standard plot window.

 **Tabulate** button tabulates the original and revised data in a standard table.

3.6.2 Editing a Curve with the Line Draw Tool

You can edit data by drawing a curve freehand by moving the mouse from left to right while clicking on the left mouse button at selected inflection points. To do this:

1. Select the data set from the drop down box at the top of the screen if it is not selected already.
2. Select the **Line Draw** (multi-point edit)  tool.
3. Move the mouse to the left-most position of the curve where you want to start editing.
4. Click on the left mouse button to mark the first data point.
5. Move the mouse right along your desired curve and press the left mouse button at inflection points. The **Graphical Editor** will draw a straight line between points.
6. If you make a mistake, you can move the mouse left past that point and insert a new inflection point. You can backup as many points at one time as you want.
7. When you are finished with a curve segment, press the right mouse button. (That location will not be used as part of the curve.) The line segments just given will be drawn with magenta triangles, and those data points are entered in the **Estimate/Entry** column.
8. You can draw other curve segments elsewhere on the plot using the same procedure.
9. If you need to remove a curve segment that you have drawn, select the values for it in the table and press the **Estimate** button. The original values will be copied into the **Estimate/Entry** column.
10. After completing your curve, press the **Accept** button or the **Accept All** button to accept all edits. This will copy the data from the **Estimate/Entry** column into the **Revised** column and will be ready to save to the HEC-DSS file.
11. At the end of all of your edits, press the **Save**  or **Save As**  button or select that item from the **File** menu to store your changes in the HEC-DSS file.

3.6.3 Editing a Point with the Single-Point Edit Tool

You can edit single data values by double clicking on the new point that you want or clicking on the existing point and moving it vertically. To do this:

1. Select the data set from the drop down box at the top of the screen if it is not selected already.
2. Click the  **Single-Point** edit tool.

3. Find the new value of the point on the graph that you want to edit and double click the mouse at that location. This will enter the value that you selected into the **Estimate/Entry** column.
4. Edit the remaining points that you desire to have changed and when you are complete, press the **Accept** button or the **Accept All** button to accept all edits. This will copy the data from the **Estimate/Entry** column into the **Revised** column and will be ready to save to the HEC-DSS file.
5. At the end of all of your edits, press the **Save**  or **Save As**  button or select that item from the **File** menu to store your changes in the HEC-DSS file.

You can also grab the point that you want to modify and move it vertically. To do this:

1. Click the left mouse button on the data point you want to edit. The table row containing that point will be highlighted.
2. Press the **Estimate Missing** button to provide a value to start from, unless there is already a value in the Estimate column. A magenta triangle will be drawn at that point on the curve. To edit existing points, double click the point and a magenta triangle will appear.
3. Move the mouse over the triangle and press and hold down the left mouse button. Move the mouse up or down to the desired value.
4. Edit the remaining points that you desire to have changed and when you are complete, press the **Accept** button or the **Accept All** button to accept all edits. This will copy the data from the **Estimate/Entry** column into the **Revised** column and will be ready to save to the HEC-DSS file.
5. At the end of all of your edits, press the **Save**  or **Save As**  button or select that item from the **File** menu to store your changes in the HEC-DSS file.

3.6.4 Editing Data in the Table

You can edit, add, and delete data in an irregular-interval time series table but you cannot extend the table. Regular-interval values cannot be deleted or added but you can change values to missing. To edit data within the table:

1. Select the data set from the drop down box at the top of the screen if it is not selected already.
2. Select the row in the table that you want to edit at, or select the location on the graph with the mouse after pressing the **Select**  tool.
3. Type in the new values in the **Estimate/Entry** column. To move to the next row in the column, press the **Tab** key or use the up and down arrows.

4. You can copy the original value to the **Estimate/Entry** column by selecting all data sets you want to change, right-clicking and selecting **Fill - Linear**, as shown in Figure 3.26. You can then change it by pressing the **Estimate** or **Estimate All** button.
5. When complete, press the **Accept** button or the **Accept All** button to accept all edits. This will copy the data from the **Estimate/Entry** column into the **Revised** column and will be ready to save to the HEC-DSS file.
6. At the end of all of your edits, press the **Save**  or **Save As**  button or select that item from the **File** menu to store your changes in the HEC-DSS file.



Figure 3.26 Shortcut Menu
Table Fill

You can repeat values or linearly interpolate between selected values or delete values by using the shortcut shown in Figure 3.26.

To fill multiple values in the table:

1. Select (highlight) the starting row of the data that you want to fill. For linear and repeat fill, this marks the starting value to use, which will not be changed. If the clear fill option is selected, this is the first value to be cleared.
2. Mark the ending row. You can do this by holding down the left mouse button and moving the mouse down the table, or by left-clicking the mouse on the ending row while holding down the **Shift** key.
3. Right click the mouse button to bring up the popup window in Figure 3.26 and then select either **Fill - Linear**, **Fill - Repeat**, or **Clear**. For **Linear**, the values between the first and last point will be linearly interpolated, with the first and last point remaining the same. For **Repeat**, the first value will be repeated through the last value. For **Clear**, all values within the selected rows will be set to missing.
4. When complete, press the **Accept** button or the **Accept All** button to accept all edits. This will copy the data from the **Estimate/Entry** column into the **Revised** column and will be ready to save to the HEC-DSS file.
5. At the end of all of your edits, press the **Save**  or **Save As**  button or select that item from the **File** menu to store your changes in the HEC-DSS file.

3.6.5 Printing the Table and Graph

You can print the table or graph by using the **Print Table** or **Print Graph** command under the **Graphical Editor's File** menu.

The **Print Table** command opens the **Properties** dialog (Figure 3.27), which offers options on three tabs.

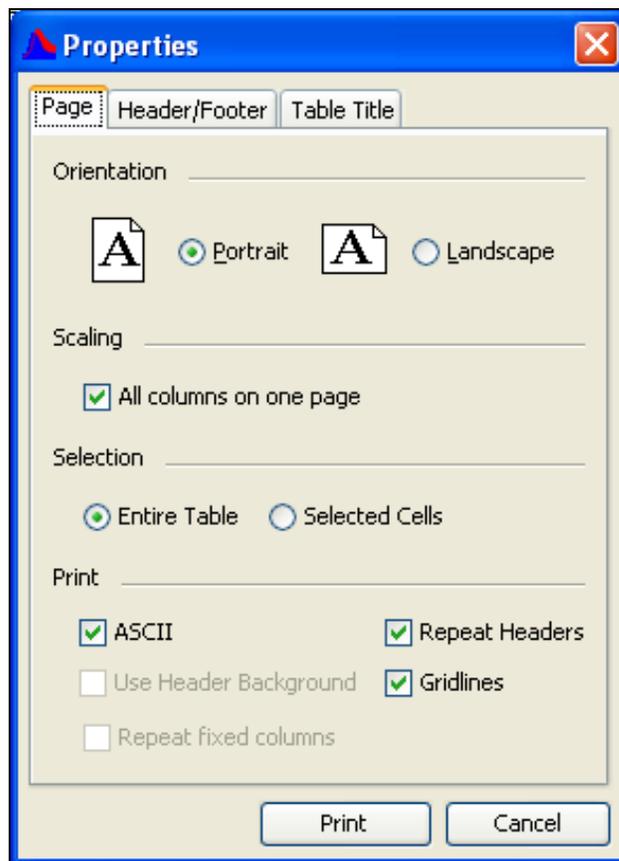


Figure 3.27 Properties Dialog Box - Printing Tables

The **Page** tab allows you to specify the page **Orientation**, **Scaling**, and **Selection**. You can also choose to print the table as **ASCII**, **Repeat Headers** on every page, and print the **Gridlines**.

On the **Header/Footer** tab, you can type in the header and footer you want to appear on your printed pages.

The **Table Title** tab offers a default title for the table based on the data source, which you can change.

When you click **Print**, a standard Windows-style print dialog box opens to select the printer and printer options.

The **Print Graph** command opens a standard Windows-style print dialog box to select the printer and printer options for printing the graph. The printed graph will include the shaded hash area and the current selected row line.

You can set the page settings for the printed graph. To do this, click **Page Setup** from the **File** menu.

From the **File** menu, click **Page Setup**. The **Page Setup** dialog will open (Figure 3.28). Here you can set the page **Orientation**, **Margins**, **Page Numbers**, and **Printer Scale** properties.

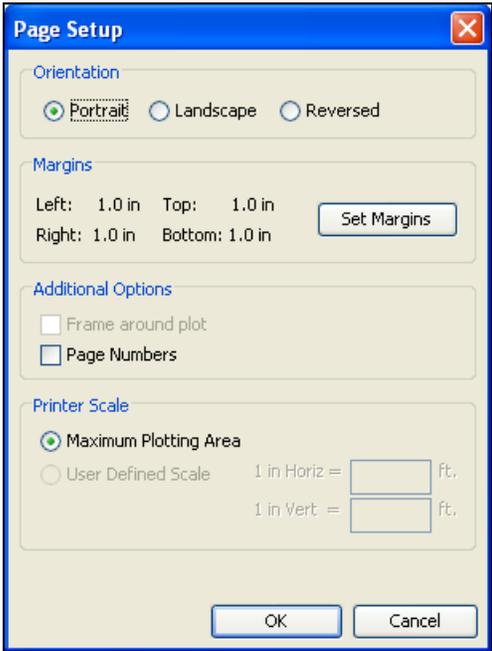


Figure 3.28 Page Setup Dialog Box

The **Set Margins** button opens the **Printer Margins** dialog (Figure 3.29).

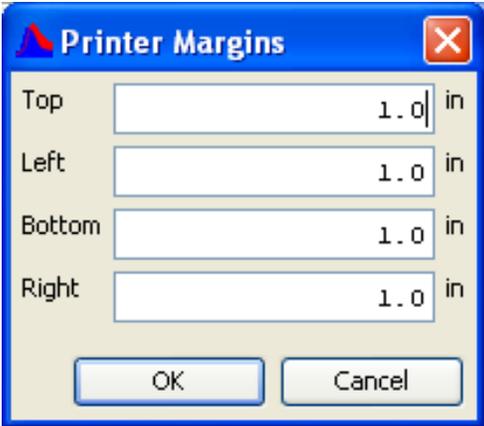


Figure 3.29 Printer Margins Dialog Box

3.6.6 Graphical Editor View Options

From the **View** menu, you can choose to plot the other data sets that you have selected on the same plot at the same time by clicking **Show Comparison Data**. If the data types are the same, the data sets will plot in the same viewport; otherwise they will be plotted in different viewports.

You cannot edit the comparison data sets. To edit comparison data sets, you must select a data set from the **Selected Data Set** list.

You can also display a standard table of the selected data, from the **View** menu, click **Tabulate**, or to display a standard plot from the **View** menu, click **Show Plot**. You can set the precision of decimal places for your data by pointing to **Decimal Places** and selecting the number of decimal places you wish to display from the list in the submenu.

3.7 Supplemental Information

To view supplemental information, from the DSSVue main window, from the **Display** menu, click **Supplemental Information**, the **Location and Supplemental Information** dialog box will open (Figure 3.30).

Supplemental information for a pathname includes the following:

Figure 3.30 Location and Supplemental Information Dialog Box

- Type:** The type of the data in the data set, such as regular-interval time series or paired data, etc. The number is the HEC-DSS internal number stored with the data.
- Last Written:** The date and time the latest data was written.
- By Program:** Displays the name of the program that last wrote this data set.
- Record tag:** Tag ID used with legacy programs.
- Version:** The number of times this data set has been written to.
- Precision:** Indicates if this data set is single (4 bytes per value) or double precision (8 bytes per value).
- Display Precision:** Precision used to view the data in tables. This number is the number of digits to the right of the decimal place to show and is automatically set when data is entered.
- Compression:** Displays the type of compression used if the data record has been compressed.
- Password Protected:** Displays **Yes** if the data is password protected.
- Supplemental Info:** Meta-data set in the user header. This can be a variety of information, dependent on the program that stored it. Often, data is given in a key: parameter format.
- Coordinate System:** Coordinate system identifying the location. Available coordinate systems include:
Lat/long, State Plane FIPS, State Plane ADS, UTM, or Local (other).
- Coordinate ID:** The UTM zone number, or FIPS SPEC number or ADS SPCS number.
- Horizontal Datum:** Horizontal datum can be either: **unset, NAD83, NAD27, WAS84, WAS72, or Local (other).**
- Datum Units:** Units of the datum, including: **Not Specified, English, SI, Decimal Degrees, or Degrees Minutes Seconds.**

X Coordinate: Longitude, Easting or decimal degrees (negative for Western Hemisphere).

Y Coordinate: Latitude, Northing or decimal degrees

Time Zone ID: Time zone identifier for this location

Time Zone Offset: Offset from UTC, in milliseconds.

