

9 Interactive Plot

The Interactive Plot program is a program module that may be started by other Warrior programs, such as Acquisition or Recalculation. It may also be used independently to generate log plots on the screen or to the hardcopy device(s). It is also used for adding individual banners (inserts) and annotations (e.g. curve labels) to a log pass. Note that multiple copies of Interactive Plot may be running at the same time, such that the system may be plotting dataset A to the screen, dataset B to one hardcopy device and dataset C to a second hardcopy device.

Double-click the Interactive Plot icon in the Warrior shortcut folder or select **Action/Screen Plot** in Warrior Logging System

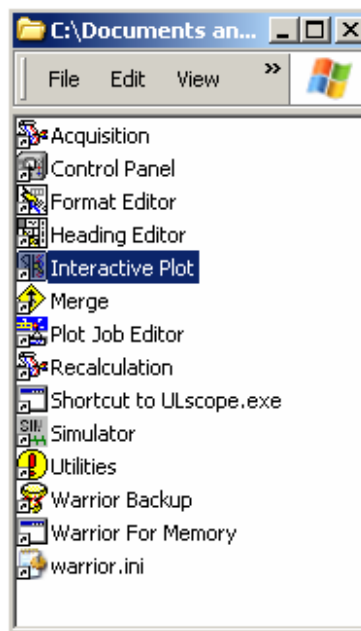


FIG: 9.1 Interactive Plot

9.1 File

Select Dataset

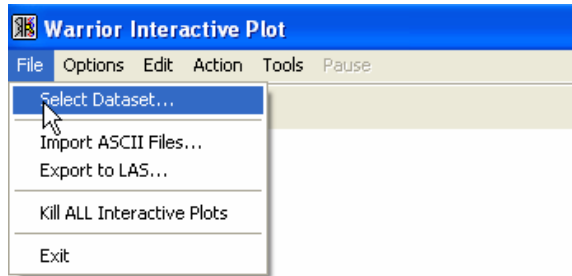


FIG: 9.2 Select Action/Screen Plot

9.1.1 Select Dataset

Select Dataset from Database for specifically Log pass

Selection of the database and dataset containing the data to be plotted. A standard Windows file selection box appears, see Figure 9.3 The required database is selected by double-clicking the selection, or highlighting it and clicking **OK**.

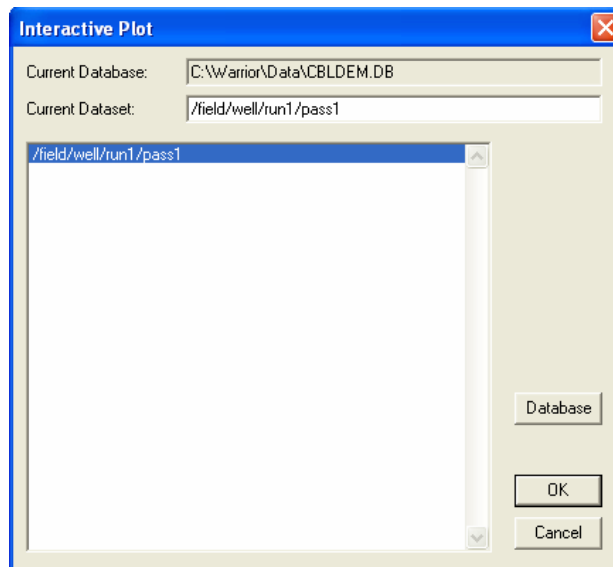


FIG: 9.3 Select Data Base

9.1.2 Import ASCII Files

See Section 12.3.1 Read ASCII data into Warrior

9.1.3 Export to LAS

See section 12.1.1 Export to LAS Format

From interactive plot select **Action->Screen Plot** menu. In addition double-clicking in the scales area of the interactive plot window will also start the Format Editor.



FIG: 9.4 Select Action/Screen Plot

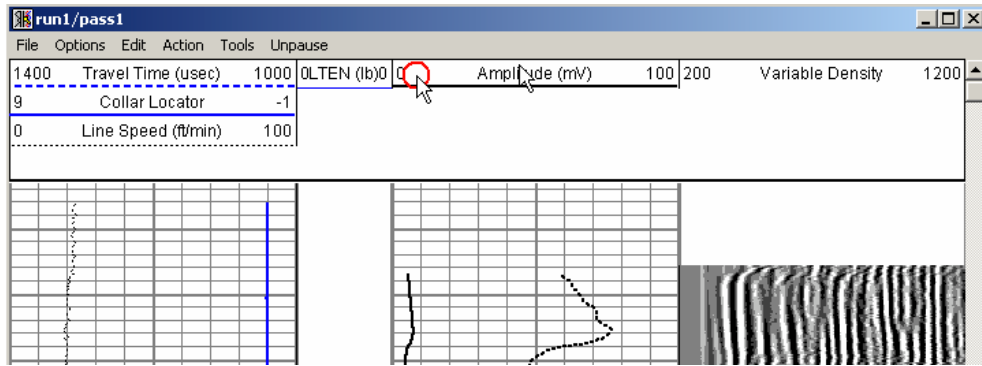


FIG: 9.5 Double Click over the header

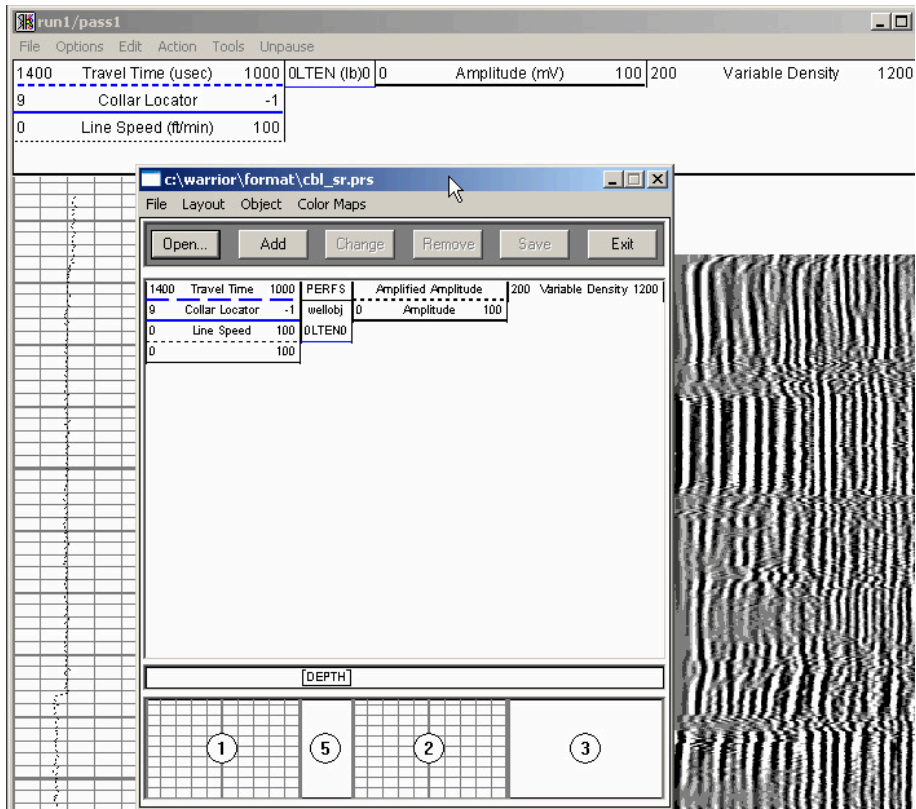


FIG: 9.6 Edit Presentation

9.2 Options

Allows selection of various presentation options as shown below.

Edit / Log Format...

Provides rapid access to the Log Format Editor. When the Format Editor is invoked from Interactive Plot, changing the log format and saving it causes the active screen plots to be repotted with the new format. Note that many screen plots may be overlaid on each other at any one time. If a large number of plots are present, a noticeable delay will occur while all are repotted.

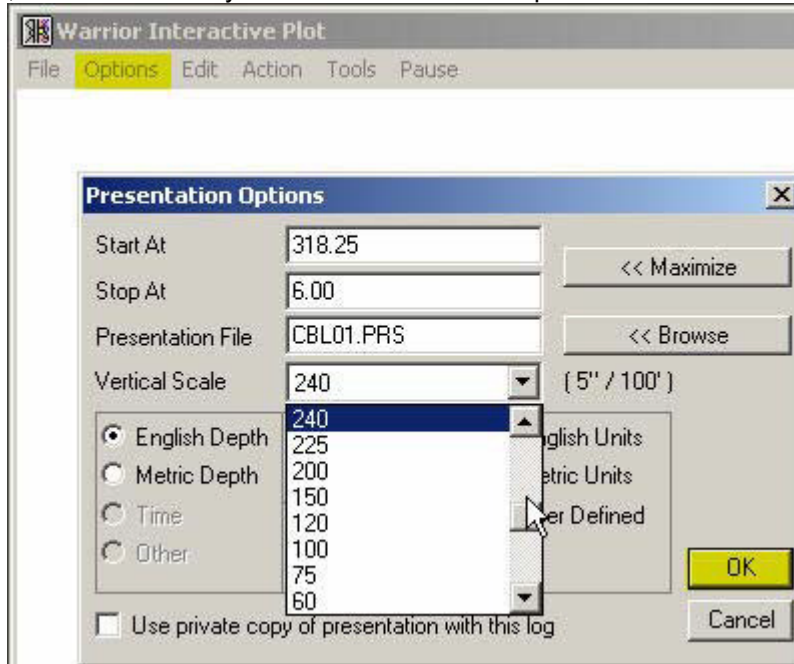


FIG: 9.7 Options

Start and Stop depths can be selected or the full range of the database can be selected using the **Maximize** button.

Alternative presentation files may be selected using the **Browse** button, which brings up a standard file selection box. Warrior log format information is contained in individual files with a prs extension. These files are created or edited using the Log Format Editor program.

Note that a selection can be made to **Use a private copy of presentation with this log**. This embeds the current presentation file in the database so that the database can be archived complete with its presentation or sent to other Warrior systems without having to remember to send the presentation file along with it. Also, if the presentation is embedded and it is subsequently edited from Interactive Plot, the edit will only take place on the embedded copy, not on the original file. **English** or **Metric** depth units may be selected, or **Time** can be used as a reference. The log may be plotted **Up** or **Down**. The log data units may be selected as **English** or **Metric**, or you may define a hybrid system. The **User Defined** units setup is done from with the **Control Panel**. Whenever a parameter in the Options window is changed, the current log screen plot(s) will be redrawn with the new option.



Warning!

When an option is changed, ALL interactive plots are redrawn. This can be a heavy load on the computer if a large number of CBL-VDL plots are currently on the screen and with a slow machine it may look as though the system has halted!

Select the depth to Start/Stop to Plot the LOG

Select presentation from the Warrior\Format (directory).

Select Vertical Scale by default is 1:240 (5" = 100') or (1' = 240')

Exit

Closes the currently selected Interactive Plot.

Annotations...

Allow you to place annotations, curve labels and graphical objects on the log.

9.3 Annotate the LOG

Scroll the log to the area where annotations are required and select Annotate from the Action menu. Note that annotations may be placed on the log even whilst logging. Simply 'Pause' the scrolling log, scroll back to the area where the annotations are to be inserted, place the required annotations and 'Unpause' to return to the current logging depth.

9.4 Create a LOG Banner (Insert)

Ensure that the pass, to which the banner is to be attached, is selected in the active plot window. Select **Edit/Log Banner**, and if required a database and dataset.

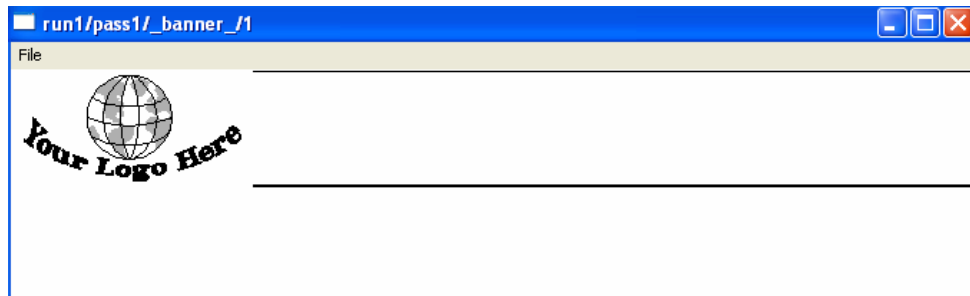


FIG: 9.8 Log Banner Insert Window

Clicking on the File menu and clicking the Select Format option can select the format of the Log Banner. There are a number of Log Banner formats (*.Wlb) to choose from. Select the most appropriate format and then edit the details by clicking on relevant areas within the window.

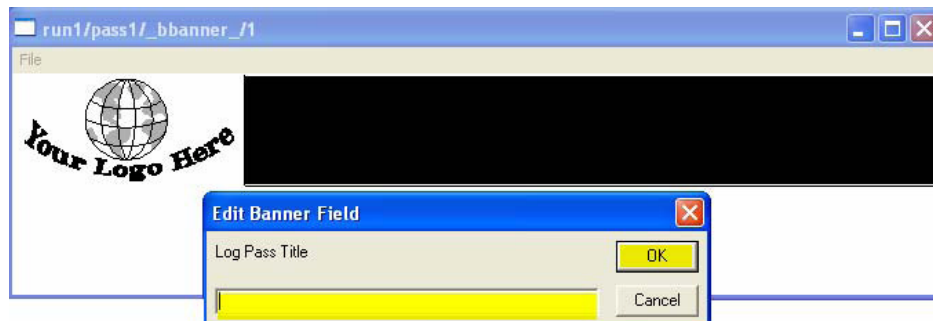


FIG: 9.9 Edit Log Annotations

9.5 Screen Plot

Select a database and dataset Go to Options and select the depth interval, plot presentation, etc.. Go to Action and select Screen Plot. The log will appear as below.

The plot may be paused by using the **Pause** button and terminated by reselecting **Screen Plot**. The plot may be paused at any time and the scroll bar, used to move back through the log to any zone of interest. When moving the scroll bar, the actual log depth, corresponding to the scroll bar position, is indicated in a box in the centre of the log plot window. A popup window opens by right-clicking on the plot, displaying all the curve's values at the mouse position

Note that the plot may be paused (or terminated) during logging without any loss of data, and subsequently returned to the current logging depth.

A plot may also be generated by directly selecting Screen Plot under the Action menu. A file selection box will be displayed.

Select a file in the standard Windows manner. If a presentation file is associated with the selected database, the plot will start immediately; otherwise a file selection box will be presented. Selecting a suitable presentation file will cause the plot to commence.

Presentations may also be selected under the **Options** menu at any time, as previously described.

9.6 Hardcopy

Generates a hard copy plot to Warrior supported scrolling plotters devices and any Windows supported printer/plotter. Hardcopy can also generate PDF and TIFF files of the log, simply select the required option from the pulldown list.

9.6.1 Plot a Hardcopy

To plot a hardcopy, select **Hardcopy...** from the **Actions** menu. The selection of the database file, the presentation file and other menu options are identical to those of the screen plot.

Selecting the **Hardcopy...** menu item brings up the following dialog box.

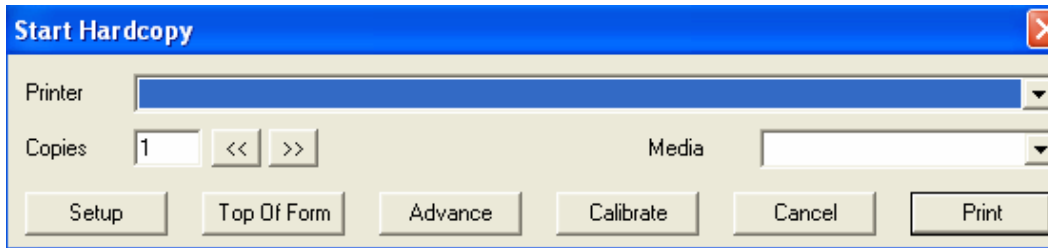


FIG: 9.10 Hardcopy dialog Box

There are normally several choices of printer. These include two classes of output. First, plotters supported by Warrior in the real-time scrolling mode, and second printers/plotters supported by Windows and installed on the system. Note that in the Windows mode, the output takes place in a paged manner, and that this mode is not suitable for use during logging.

The number of copies and the media selection, for those printers that support it, can be chosen here. For those printers that support fanfold paper, **Top of Form** moves to the next fold. On some printers this will skip a fold so that new plots will start on an outside page when folded.

9.6.2 Close the Current Plot & Select New Data

Click on the plot selection, e.g. Screen Plot, and the plot is terminated. New Database file and Dataset selection may be made from the File menu, and presentation and other options may be chosen from the Options menu.

9.6.3 Make a TIFF File

Install TIFF File as a Warrior printer with port name FILE: and driver None. You will be prompted for a file name for output.

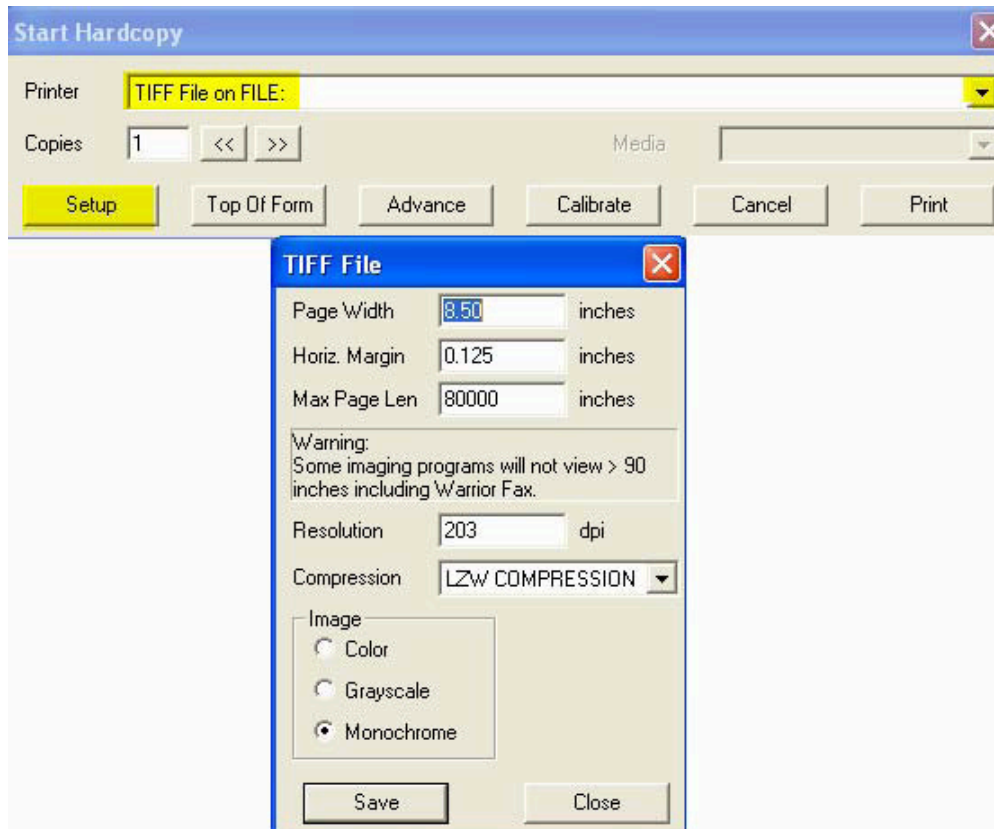


FIG: 9.11 Creating TIFF file

By clicking on the **Setup** button you can customize the page length, resolution and compression of the TIFF file.

This is an extremely useful feature that enables log presentations to be sent as e-mail attachments or used for presentation purposes as they can be inserted into Word, Excel, Powerpoint, etc.. Most common graphic file viewers can also view them.

9.6.4 Make a PDF File

Install the Adobe Acrobat reader from the Warrior Software CD or Download the Adobe Acrobat Reader <http://www.adobe.com/products/acrobat/readstep2.html> .It is a free version.

This option is exactly the same as the TIFF files procedure, although to install use PDF File, rather than TIFF File. The Setup is also slightly different as the compression options vary from those of the TIFF file.

The Output type can be Color or monochrome

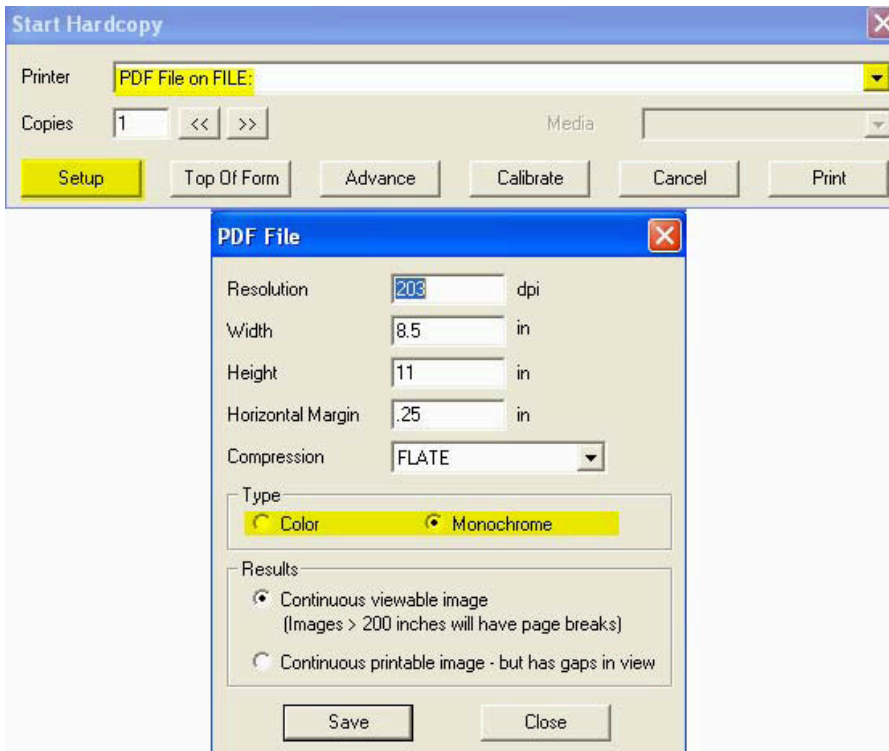


FIG: 9.12 PDF file settings

Section 10

10 Plot Job Editor

The Plot Job Editor is a program module, which enables the operator to assemble the various components (heading, log sections, etc.) of a well log into its final presentation. The resultant plot job information is saved in a well log database, usually alongside the log data. The Presentation Plot program uses the plot job information to create the graphical output to a plotter or other graphics device (fax file, etc.).

The Plot Job Editor is started from its icon in the Warrior group, the Presentation Plot File menu, or the Acquisition module Edit menu. (Video 10.1)

Double click on the program group icon, the Acquisition Edit menu or the Presentation Plot File menu

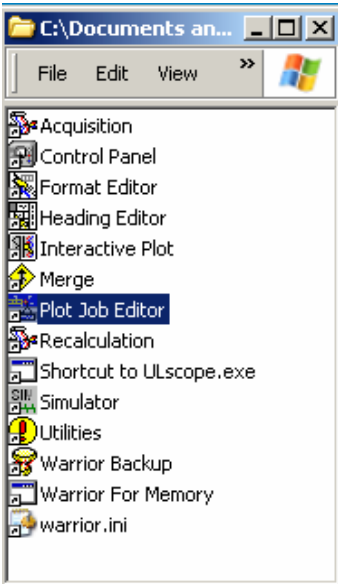


FIG: 10.1 Select Plot Job Editor

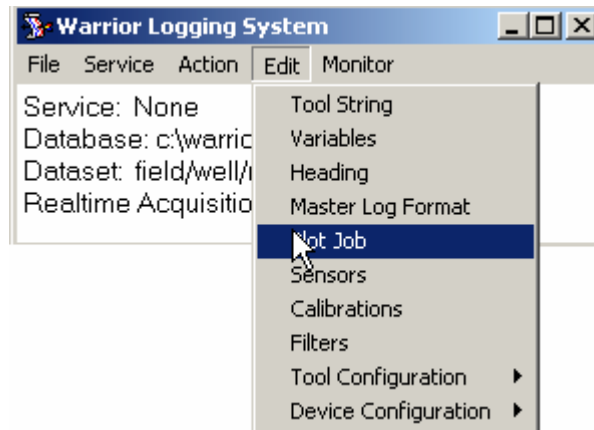


FIG: 10.2 Select Plot Job

10.1 File

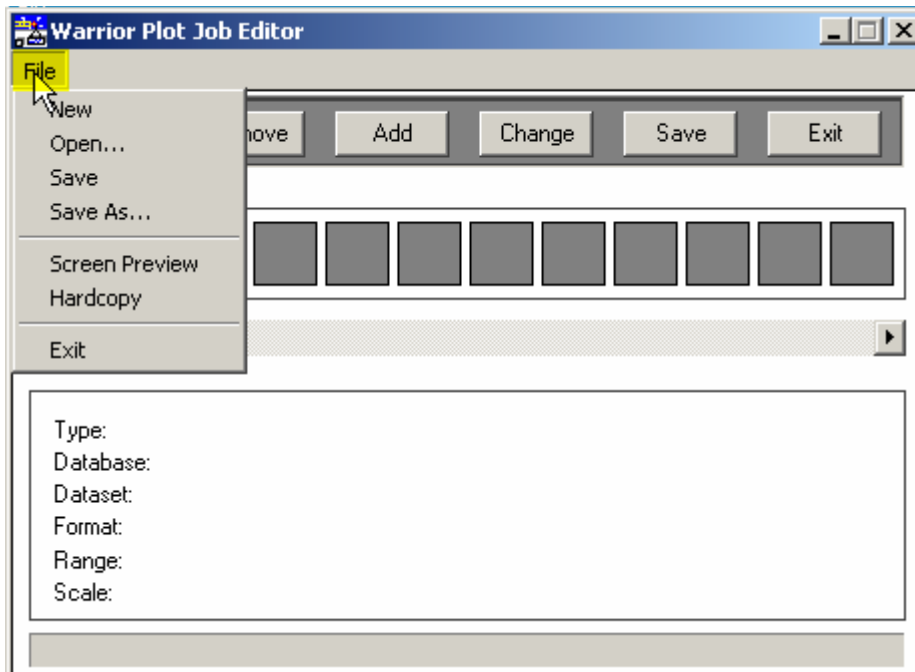


FIG: 10.3 File Menu

The menu functions are as follows:

10.1.1 New

If a plot job is currently selected, New clears the editor for a new plot job.

10.1.2 Open

Displays the file selection window to allow the operator to select the database file containing the plot job to be edited. Note that plot job information is stored in the Warrior database file at the run level.

10.1.3 Save

After creating or editing the plot job it may be saved within a Warrior database file

10.1.4 Save As

Allows a plot job to be edited and subsequently saved to new location with a different name.

10.1.5 Screen Preview

Starts Screen Preview of the selected plot job, see manual section on Presentation Plot.

10.1.6 Hardcopy

Displays a list of the plotters supported on the logging system. Selection of one of the plotters causes the plot job to be output to the hardcopy device (plotter).

10.1.7 Exit

Closes the Plot Job Editor

10.2 Start the Plot Job Editor.

When the selection of the items is complete the plot job data is saved in the Warrior database.

If the Plot Job editor is invoked from within the Acquisition module the database path and name are set to be those of the current database. If invoked from elsewhere the full path must be entered by the user. (LEAVE NO ASTERISKS / WILDCARDS) The blank plot job appears as shown above.

10.2.1 Change

Changes plot job to be edited.

10.2.2 Remove

Removes the selected file from the plot job.

10.2.3 Add

To create a new plot job start with the Add button

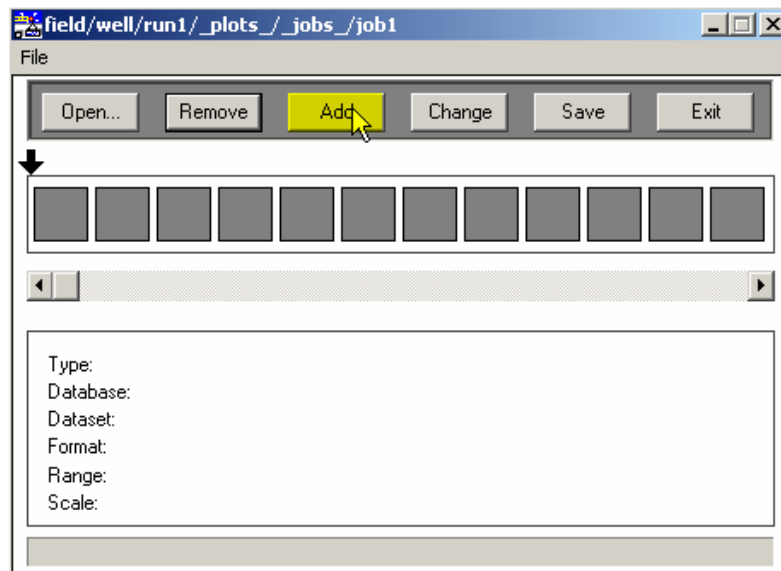


FIG: 10.4 Add File

Add Displays the selection box containing types of files, which may be included in the plot job.

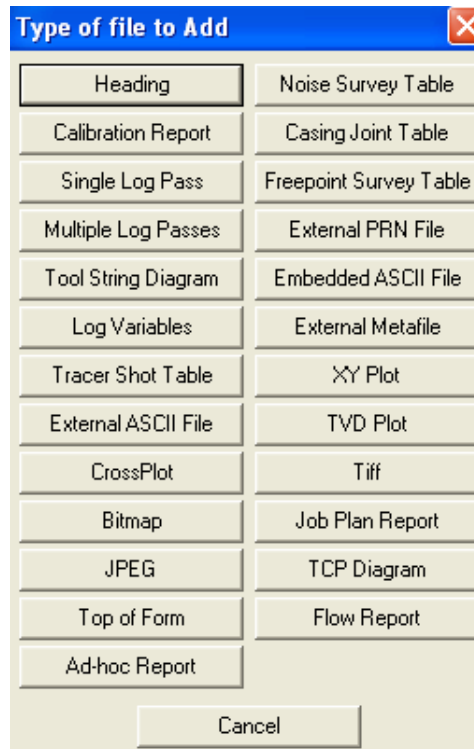


FIG: 10.5 Select the File to add

Selecting a database file causes a list of plot jobs stored within the database to be displayed.

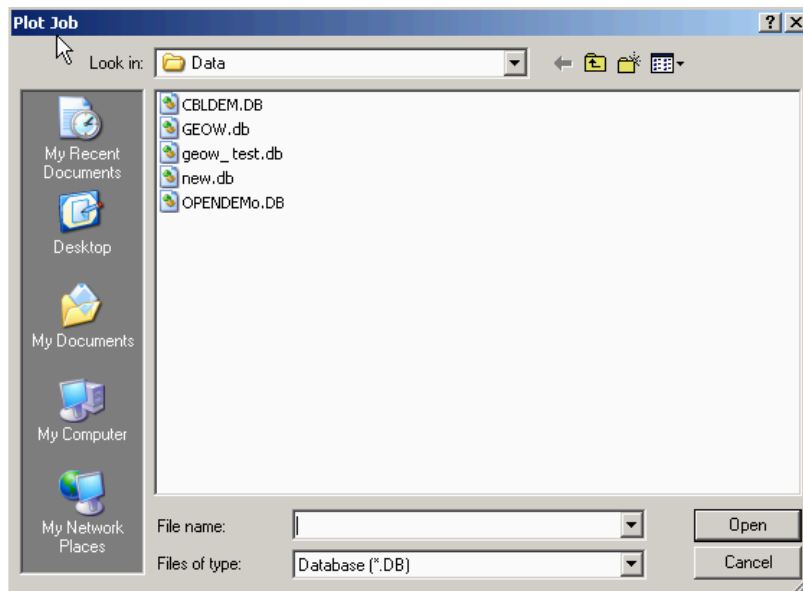


FIG: 10.6 Select Database

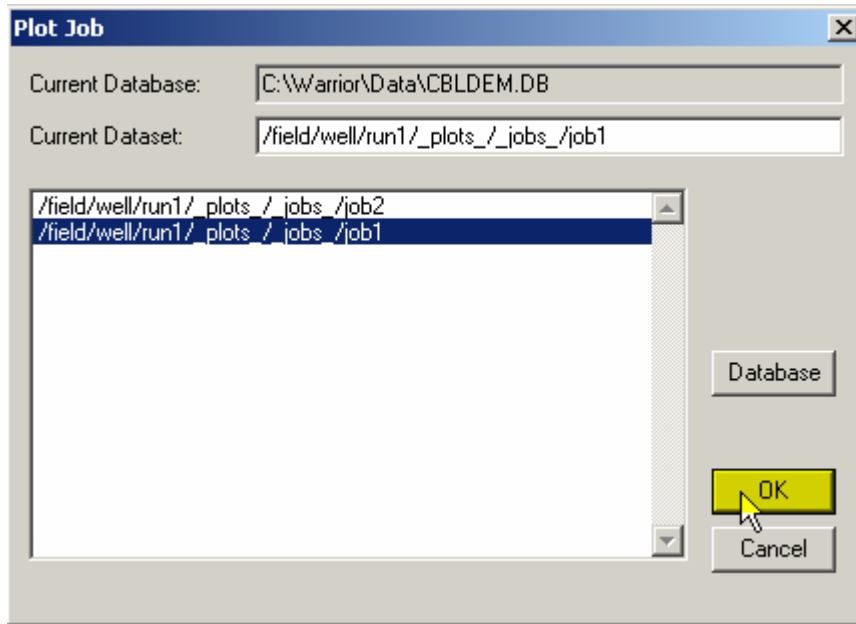


FIG: 10.7 Select Plot Job

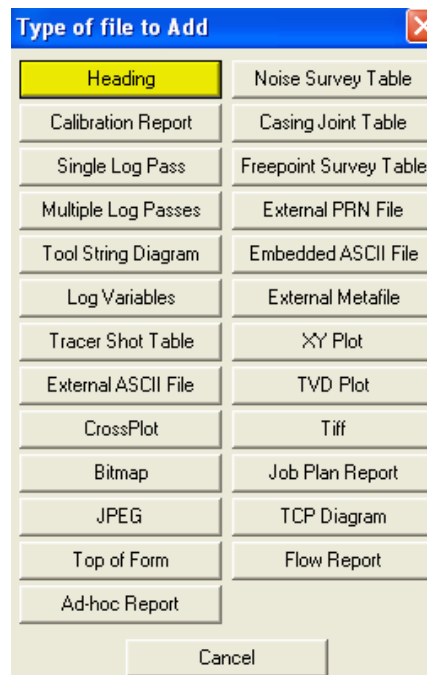


FIG: 10.8 Select Heading

Typically a log heading would be the first file to appear in the plot job. Click on Heading and, because headings are stored in the log databases, the database selection window is displayed. Select the database where the required heading is stored. A list of the headings stored in that database is displayed

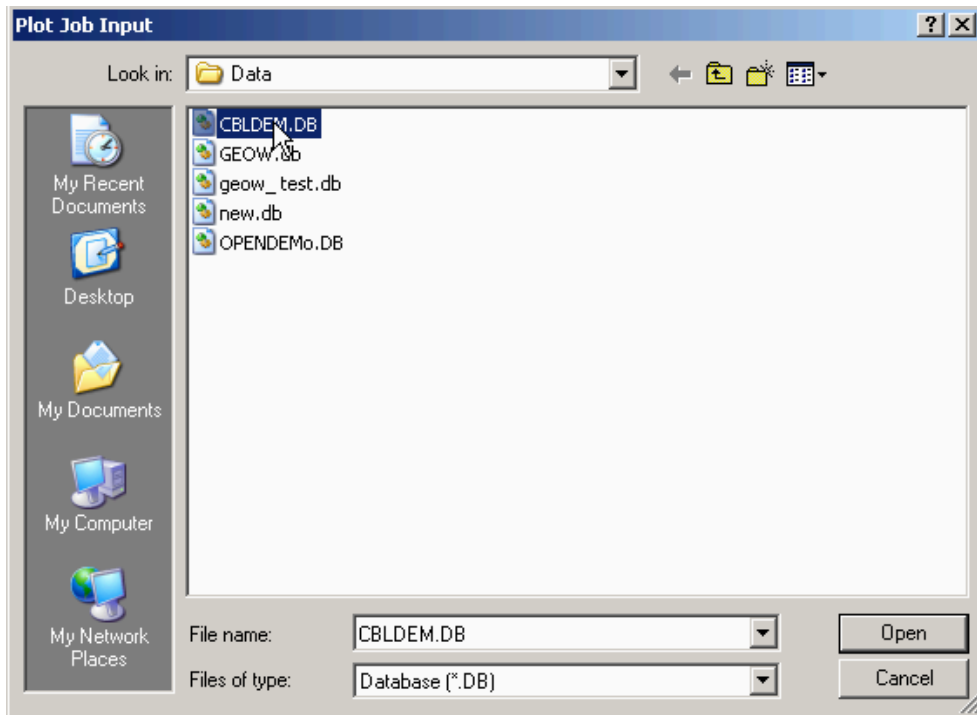


FIG: 10.9 Select Database

Select the required heading by double clicking, or highlighting and the OK button. The heading appears as an icon at the start of the plot job sequence, as shown below.

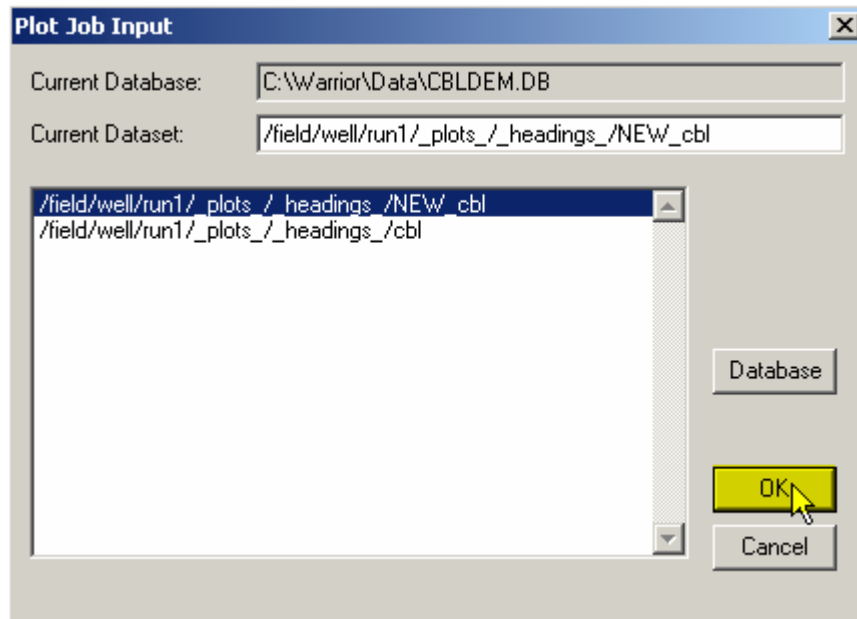


FIG: 10.10 Select Plot Job Input

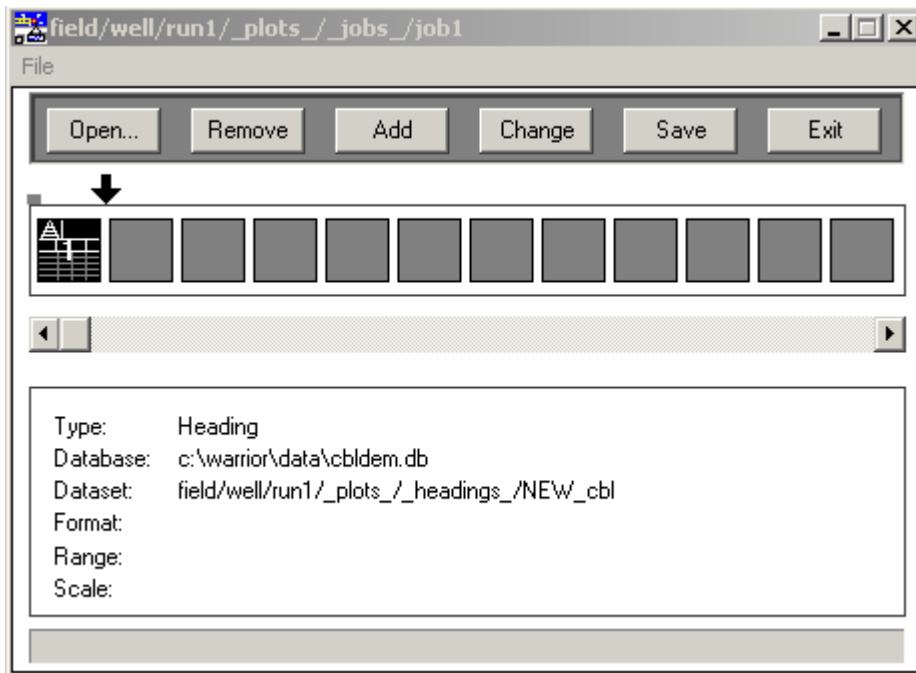


FIG: 10.11 Add Heading

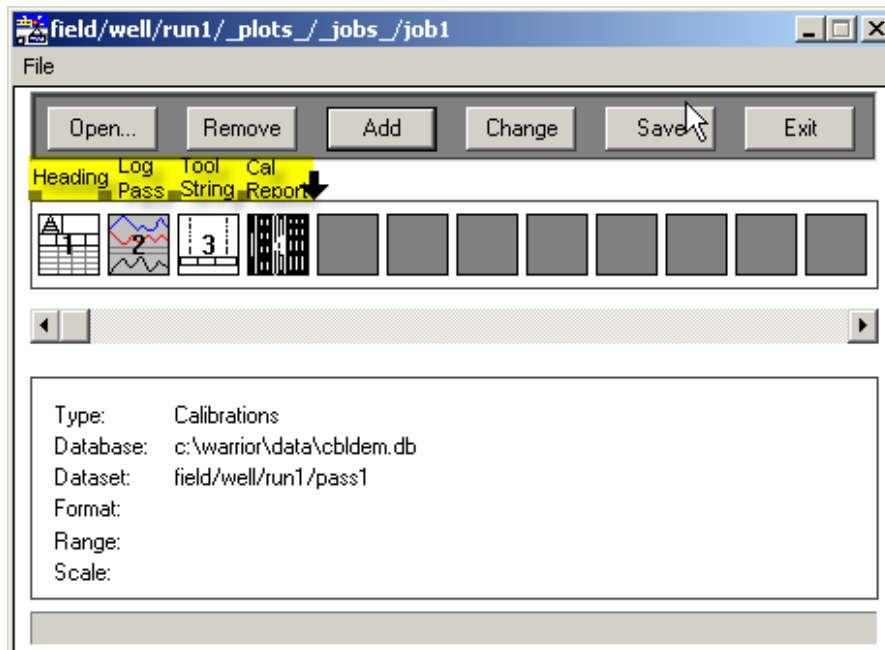


FIG: 10.12 Add Heading, Log Pass, Tool String, and Calibration Report

Other files may be added as required in the order they are to appear on the final log presentation. To add a log section click on Single Log Pass and a list of the log passes in the currently selected database is displayed.

Selecting Multiple Log Passes allows the operator to select for inclusion the plot job several log passes at the same time. This is useful when there are many passes to be included, as with production logging.

Other items from the type list may be added as required. Tool string diagrams and calibration reports are stored at the pass level, therefore when adding an item of these types, a list of the log passes is presented.

In this way the items to be presented on log print are defined together with the order in which they are to appear. Each item appears as an icon as shown below.

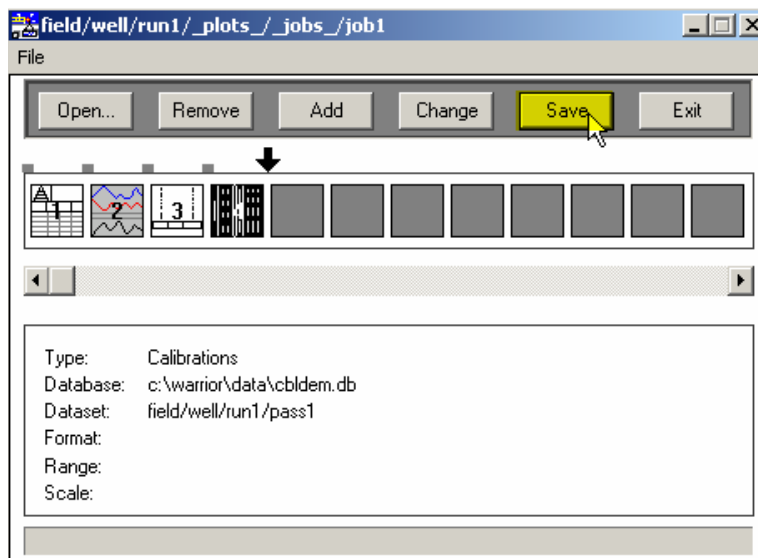


FIG: 10.13 Save

Note that the plot job contains information concerning which files are to be plotted, in which order, and with what presentation. It does not contain the files themselves, therefore the files may be modified e.g. by adding annotations, without the need to recreate or modify the plot job itself.

Selecting External PRN file allows the inclusion within the plot job of plot or print output from any Windows application. It is necessary that the material to be added to the plot job have been previously printed to a PRN file from the particular application. See Windows Help - Print to a file for details on how to do this.

Upon completion of the plot job sequence the job may be plotted by choosing the Hardcopy option from the file menu. Alternatively the Presentation Plot program may be started from the Warrior program group (particularly if a Screen Preview is required).

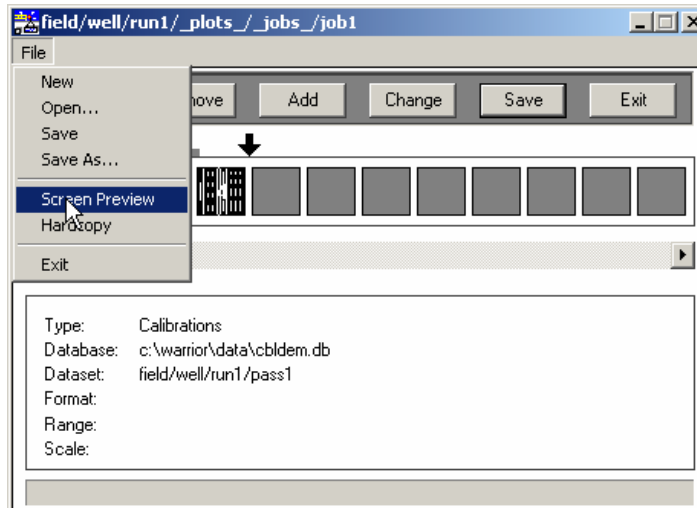


FIG: 10.14 Select Screen Preview

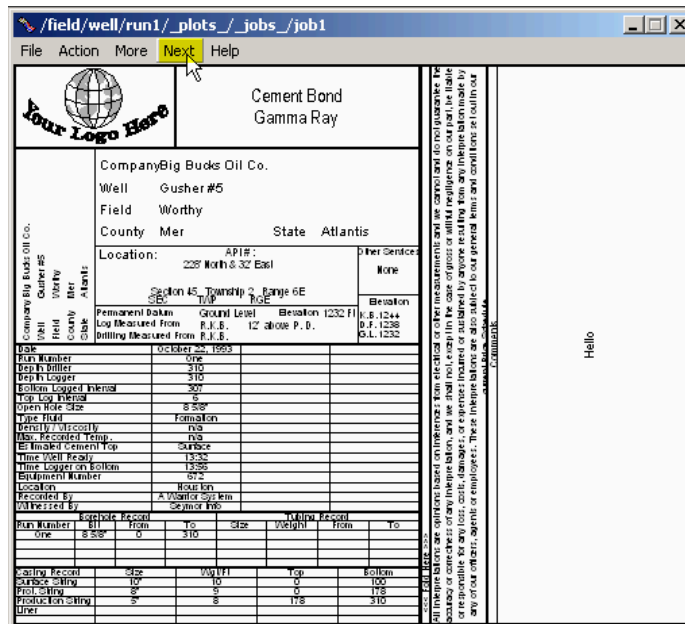


FIG: 10.15 Heading

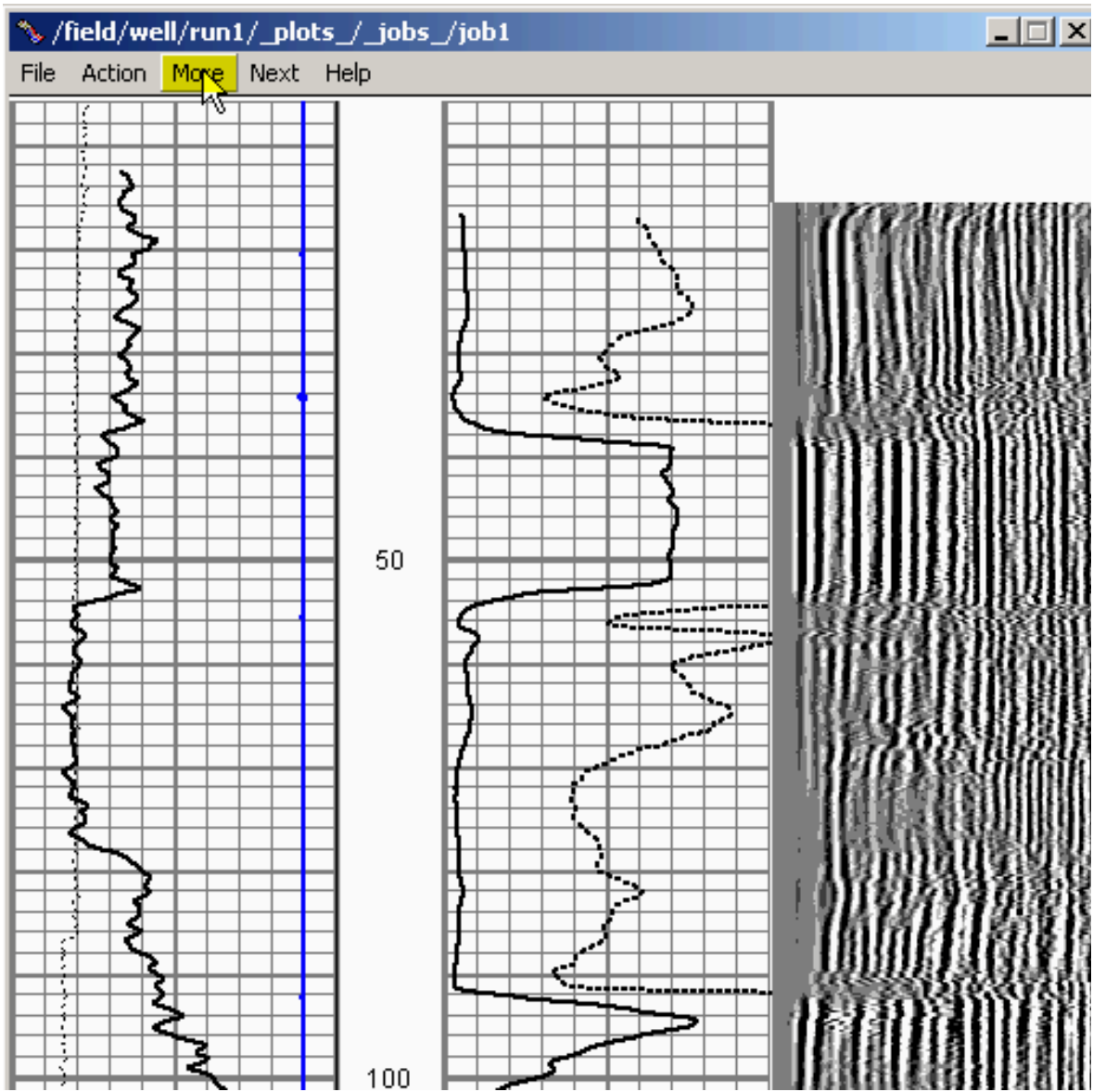


FIG: 10.16 Log Pass

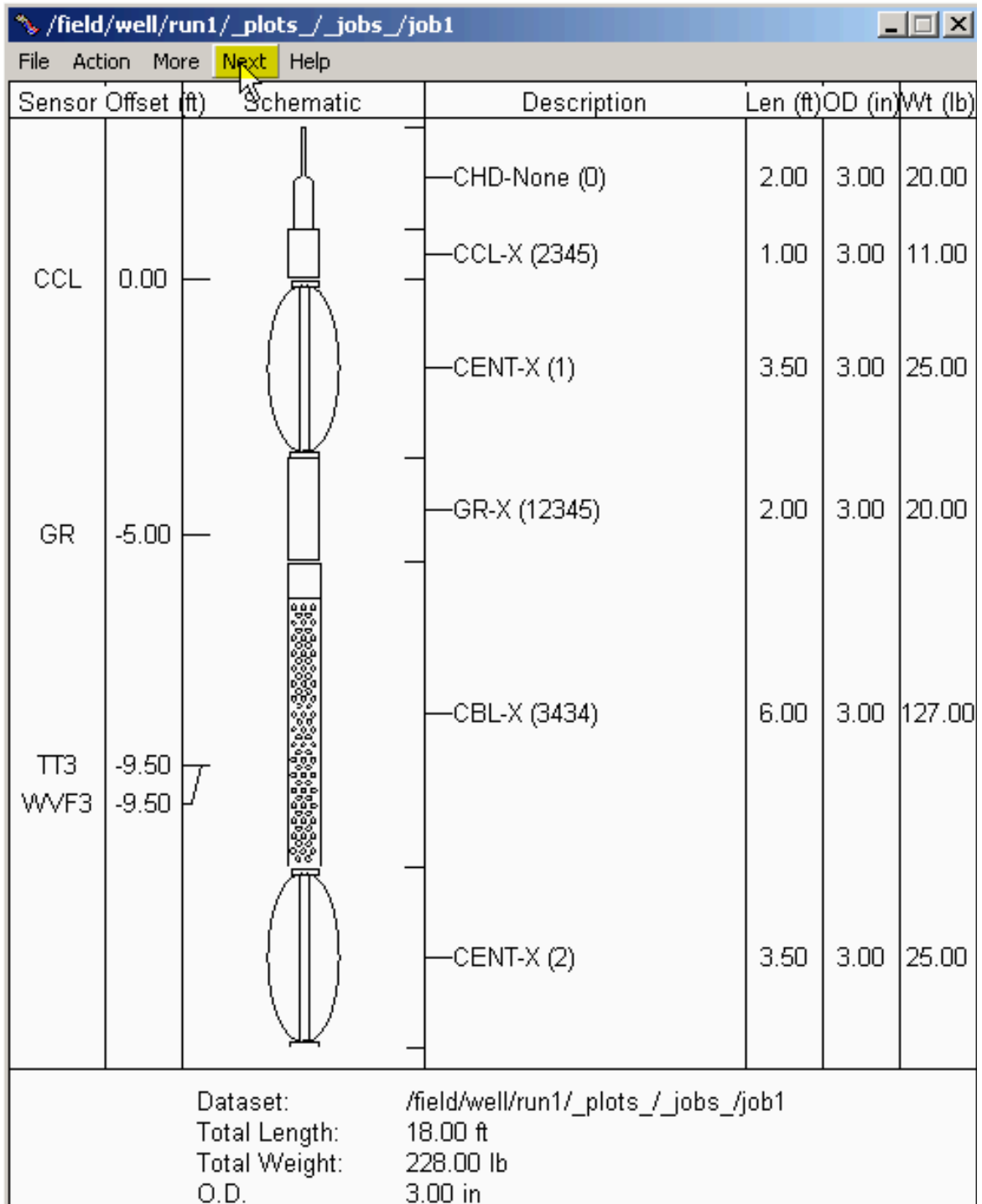


FIG: 10.17 Tool String Add

| /field/well/run1/_plots/_jobs/_job1 | | | |
|-------------------------------------|-------------------------------------|------------|-------|
| File Action More Next Help | | | |
| Dataset: | /field/well/run1/_plots/_jobs/_job1 | | |
| Total Length: | 18.00 ft | | |
| Total Weight: | 228.00 lb | | |
| O.D.: | 3.00 in | | |
| Cement Bond Log Calibration Report | | | |
| Serial Number: | 3434 | | |
| Tool Model: | X | | |
| Performed: | Sun Aug 15 15:43:24 1993 | | |
| Depth: | 0 | ft | |
| Casing Diameter: | 5 | in | |
| | 3' Spacing | 5' Spacing | |
| Signal Zero: | 0 | 0 | mw |
| Calibrated Amplitude: | 62.1651 | 62.1651 | mw |
| Reading at Signal Zero: | 0.0460073 | 0.0460073 | volts |
| Reading in Free Pipe: | 2.79531 | 0.0463004 | volts |
| Gain: | 22.6112 | 212140 | |
| Offset: | -1.04028 | -9759.97 | |
| Gamma Ray Calibration Report | | | |
| Serial Number: | 12345 | | |
| Tool Model: | X | | |
| Performed: | Sun Jun 13 15:33:21 1993 | | |
| Calibrator Value: | 100 | GAPI | |
| Background Reading: | 0.625 | cps | |
| Calibrator Reading: | 3.75 | cps | |
| Sensitivity: | 1 | GAPI/cps | |

FIG: 10.18 Calibration Report



VIDEO: 10.1 Plot Job Editor