

12 Database Utilities

The Utilities icon in the Warrior Program Group allows access to several programs, some with general, and some with more specific, applications.

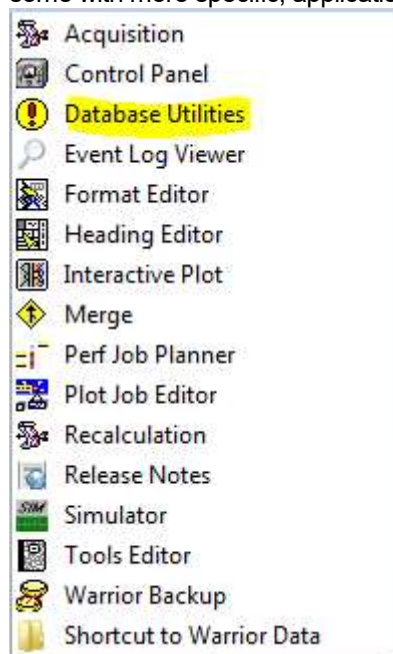


FIG: 12.0.1 Warrior Program Group

The warrior Utilities has six groups:

- 1) Data Export
- 2) Interpretation Tools
- 3) Setup Tools
- 4) Depth Correction
- 5) Data Management
- 6) Data Import

Clicking on the icon Utilities gives a menu list as shown below.



FIG: 12.0.2 Warrior Utilities

12.1 Data Export

Unlike previous versions of Warrior, Warrior 8 now has a single program to export both LAS and LIS files, although the Warrior Utilities still shows them as being separate utilities. Depending upon which utility is selected, the export format for that type will be selected upon entering the export utility, although it can be changed within the utility.

12.1.1 LAS LIS Data Exporter



FIG: 12.1.1 Export LAS Format

12.1.2 Warrior Data Exporter

This program will export to LIS or LAS, and the destination can be a file or a tape. The first step is to select the format output with the Format button.

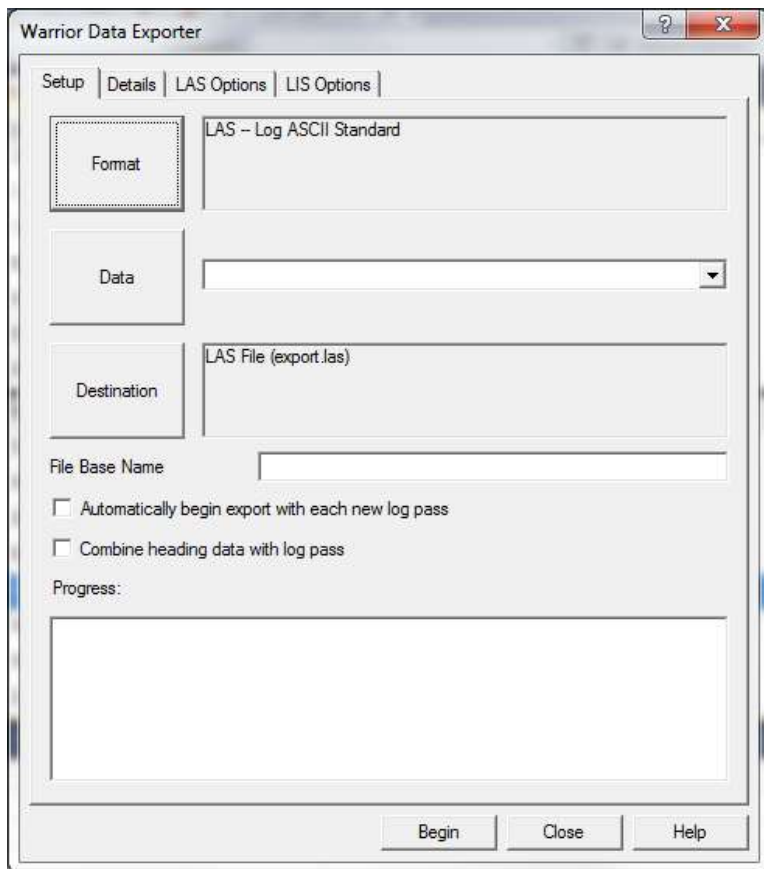


FIG: 12.1.2 Data Exporter

Clicking on the Format button will cycle through the export format options.
Once you have chosen the format type, select the Data button

After Export to LAS Format has been selected, the following window will open with LAS selected as the export format. The next step is to click on the Data Button to select the data to export.

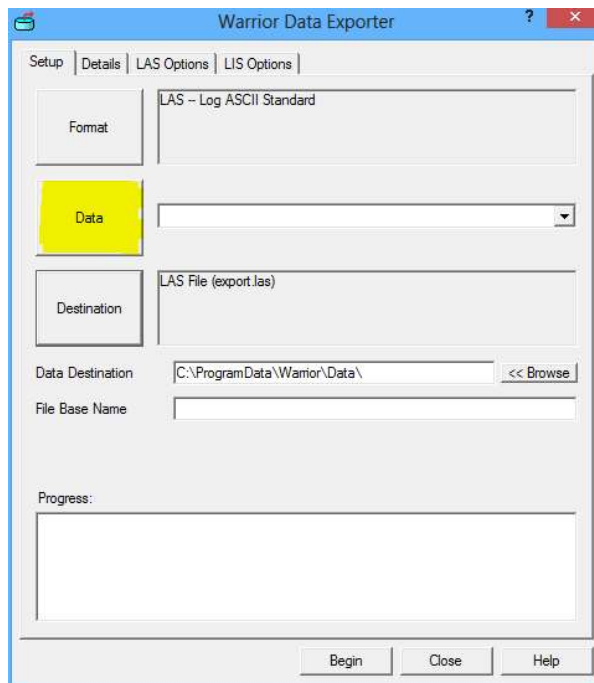


Fig. 12.1.3 Select Data to Export

A heading and log passes can be added from the Build Export File List window. Warrior 8 now uses an export template with the extension .AET to identify which curves are to be exported and sample rates for the export. The first time that you export a file, you may not have any templates. Just cancel that dialog window to set to default template and you can create and save a template later. Click the Done button after heading and all log passes have been selected.

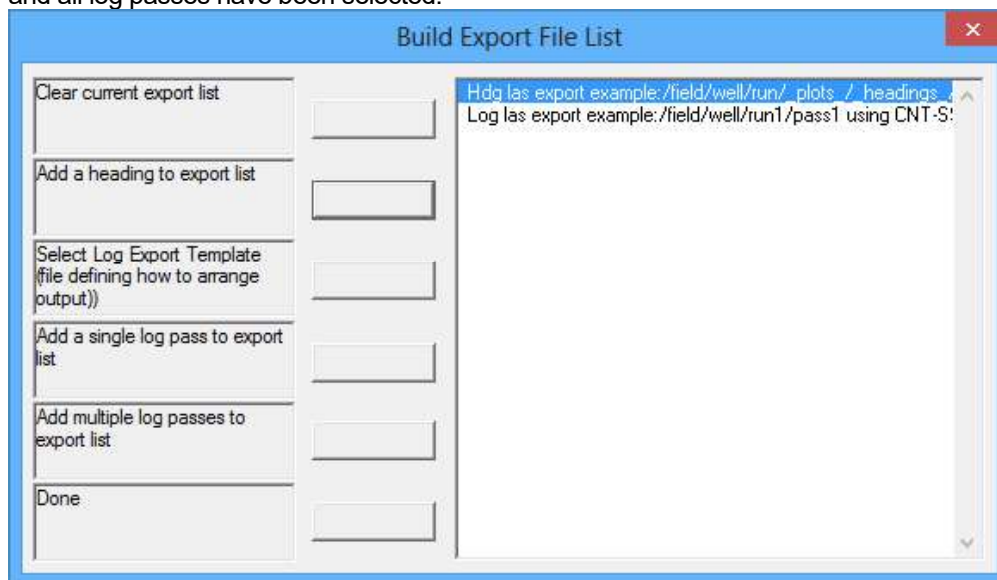


Fig. 12.1.4 Export File List

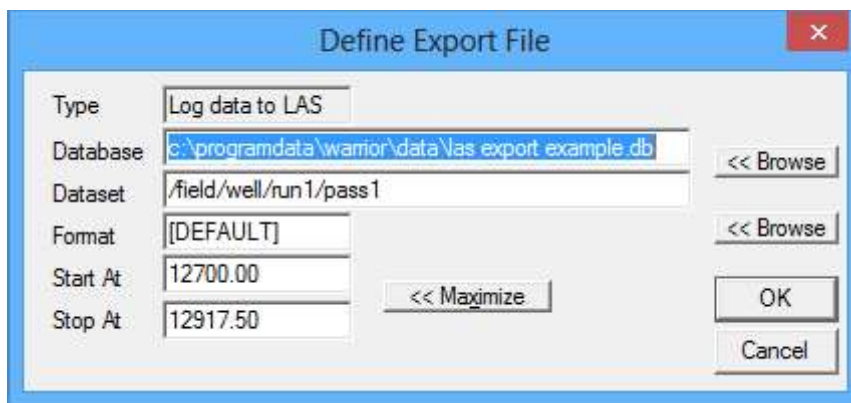


Fig. 12.1.5 Pass selected with no template selected

The default destination for the LAS file that is created is normally C:\ProgramData\Warrior\Data\ but the User may use the [<<Browse] button to select a different destination. Be sure to give a proper Windows file name for the output.

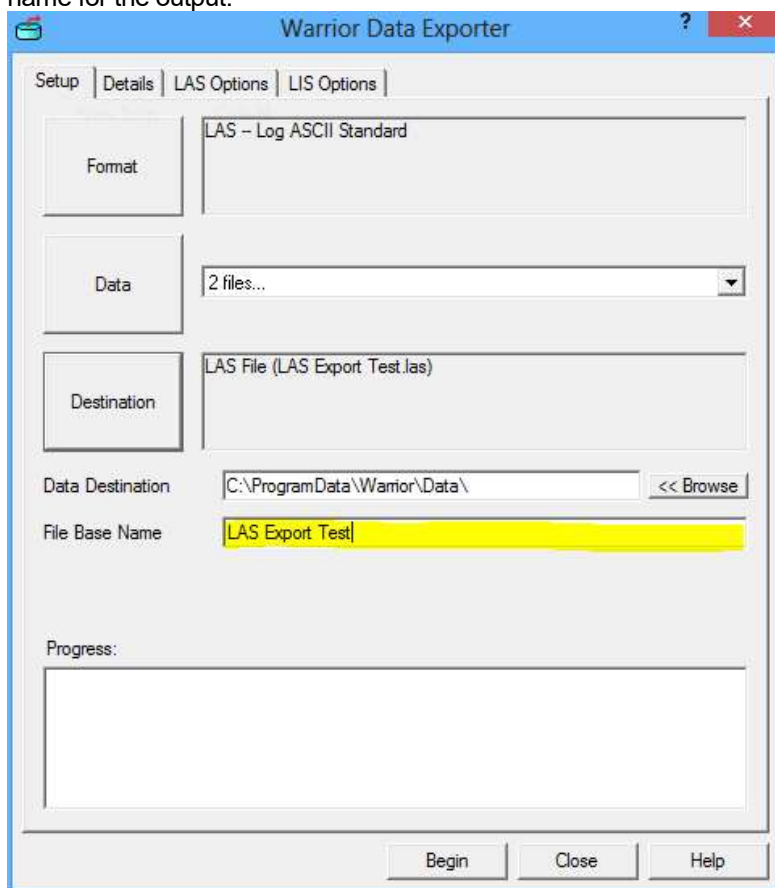


Fig. 12.1.6 File Base Name

Once the Format and Data has been selected go to the Details Tab.

The Available list just shows whether that particular curve is on the current dataset. From this dialog, you can make your own template that will contain the curves that you want to export. For LAS you can rearrange the order of the curves to be exported in the order that they are listed. If you want GR to be exported first, then click on GR and drag to the top of the list.

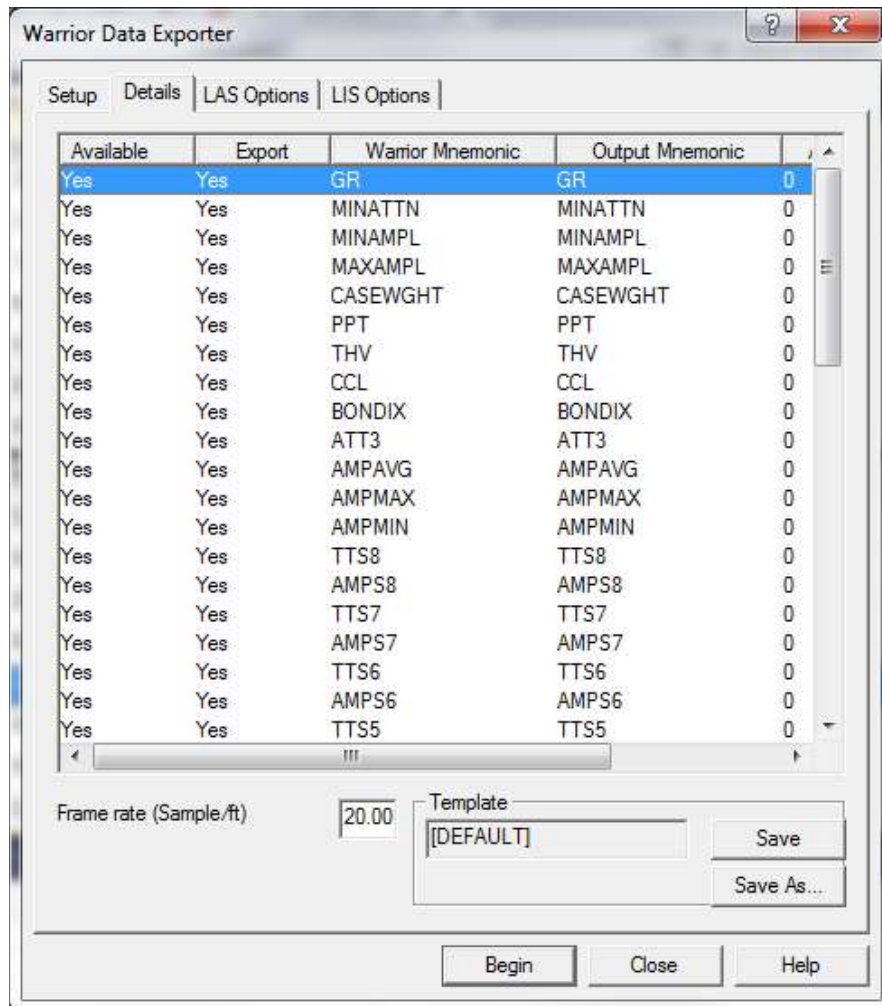


Fig. 12.1.7 Details Tab

You can double click on a curve to change the output mnemonic, API Code, or the sample rate.

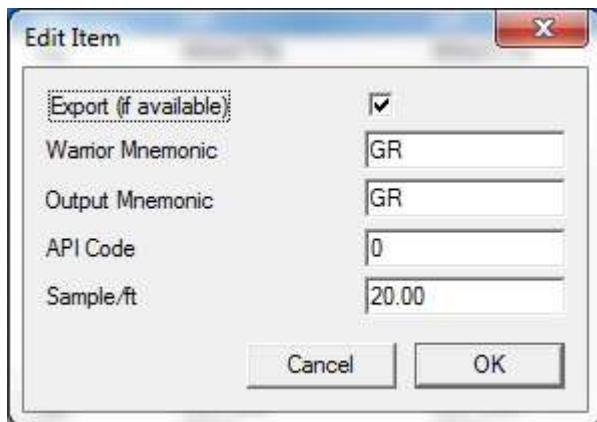


Fig. 12.1.8 Edit Item Window

You can right click on a selection of curves to bring up a context menu – from there you can toggle the curve output on or off. Right click to bring up context menu.

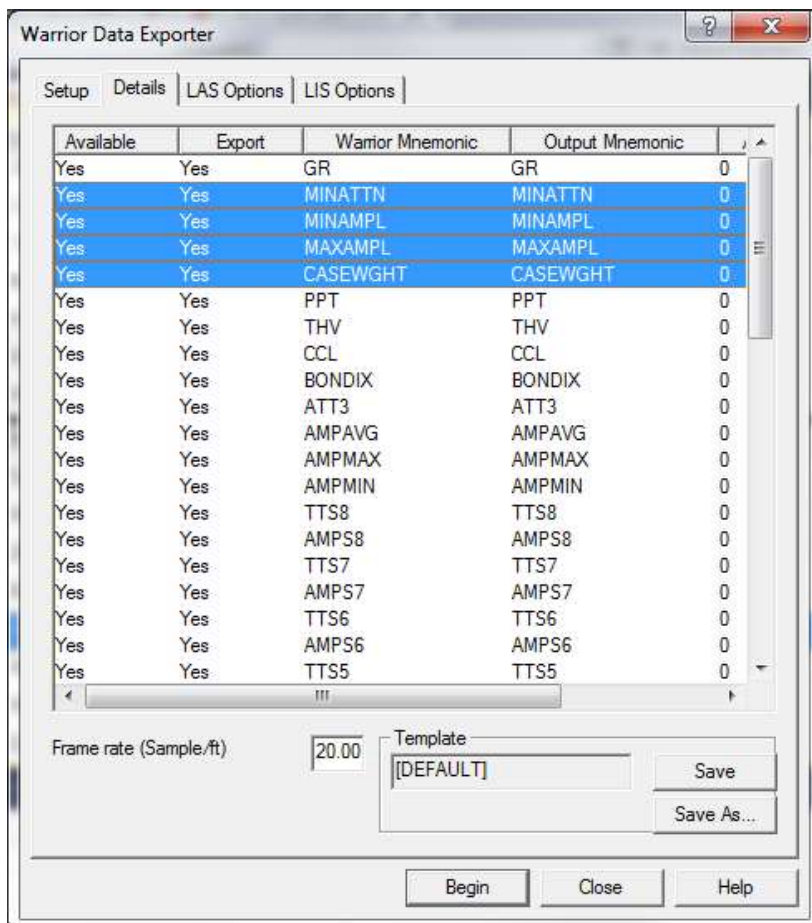


Fig. 12.1.9 Selecting Curves

Once you are satisfied, you can make your own template by selecting Save As...

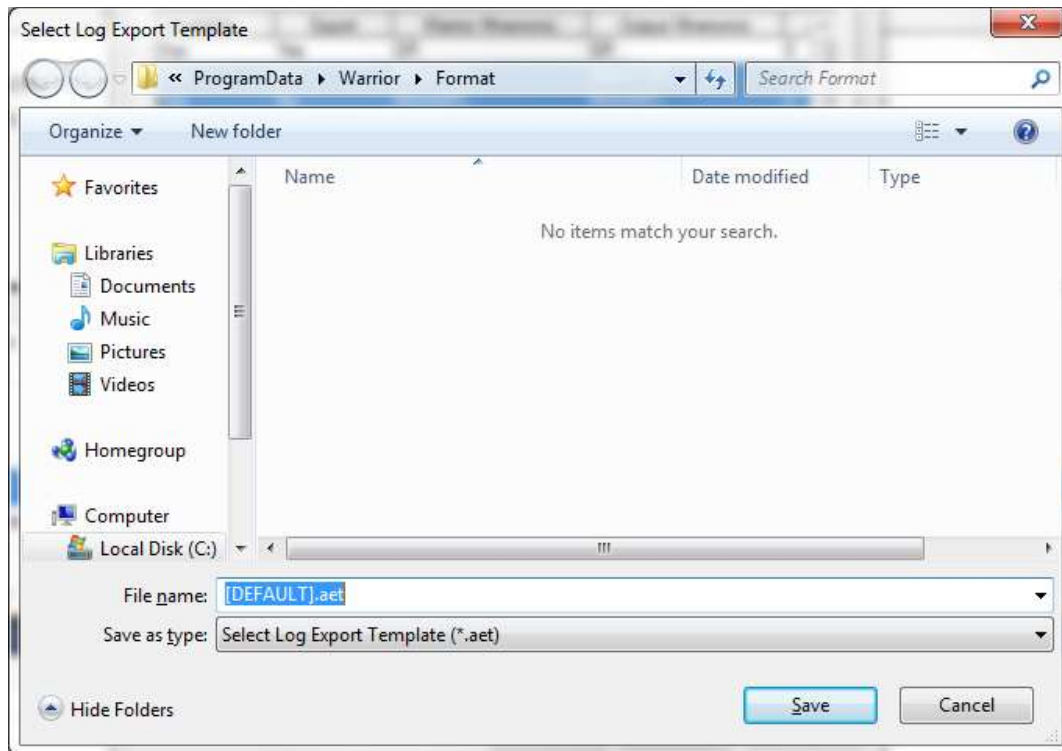


Fig. 12.1.10 Saving Template

LIS export templates have the extension 'iet', and LAS export templates have the extension 'aet'.

The next time you start an export, you can select the template you made.

12.1.3 LAS Options

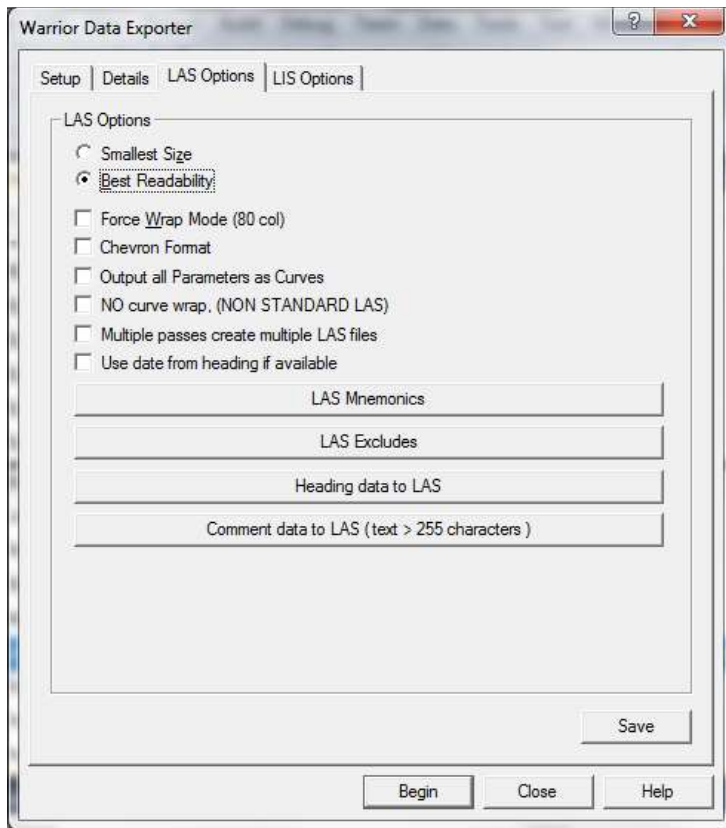


Fig. 12.1.11 LAS Options

There are two radio buttons on the LAS options tab .

Smallest Size generates the most compact LAS compatible file, it is best suited for email.

Best Readability generates a LAS with a more intuitive header for opening in a text editor such as notepad.

There are also five check boxes.

Force Wrap Mode (80 col.) will generate a LAS that is wrapped at 80 columns, this makes it easier to read in a text editor but may be less compatible with other interpretation software.

Chevron Format this will generate a LAS that follows the Chevron specific LAS format.

Output all Parameters as Curves this will treat all parameters from the pass as data and output it as LAS data

No Curve Wrap, (Non Standard LAS)

Multiple Passes Create Multiple LAS Files this will generate a separate LAS for each pass selected if checked.

Use Data From heading if available this will use heading data in the LAS header if it is present in the selected data.

12.1.4 LAS and LIS Mnemonics

The LAS Mnemonics will be the default mnemonics that are loaded without using a template. For example, if you have set up your mnemonic for LSPD to be SPED:

The LIS Mnemonics will refer to the same list.

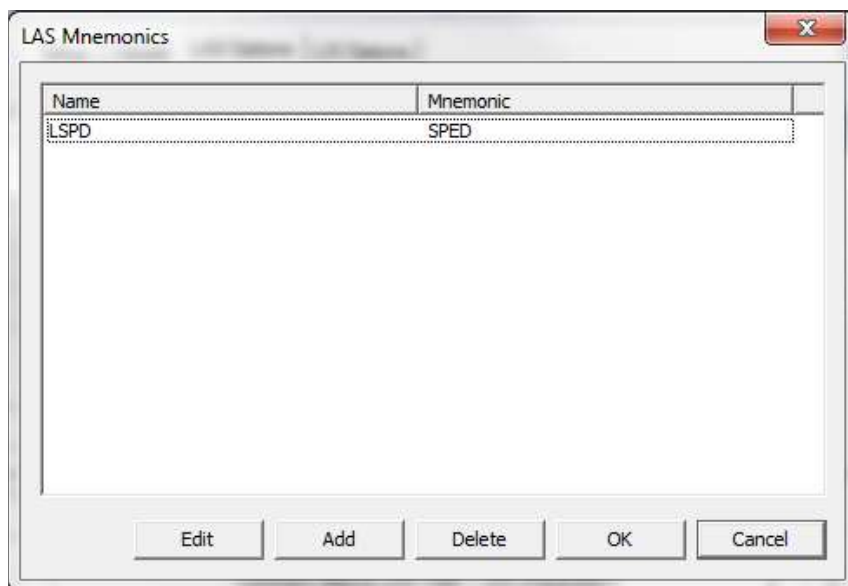


Fig. 12.1.12 LAS, LIS Mnemonics

Then when you select a pass to be exported, the default name for the output mnemonic will be SPED. That can be overwritten if you use a template file:

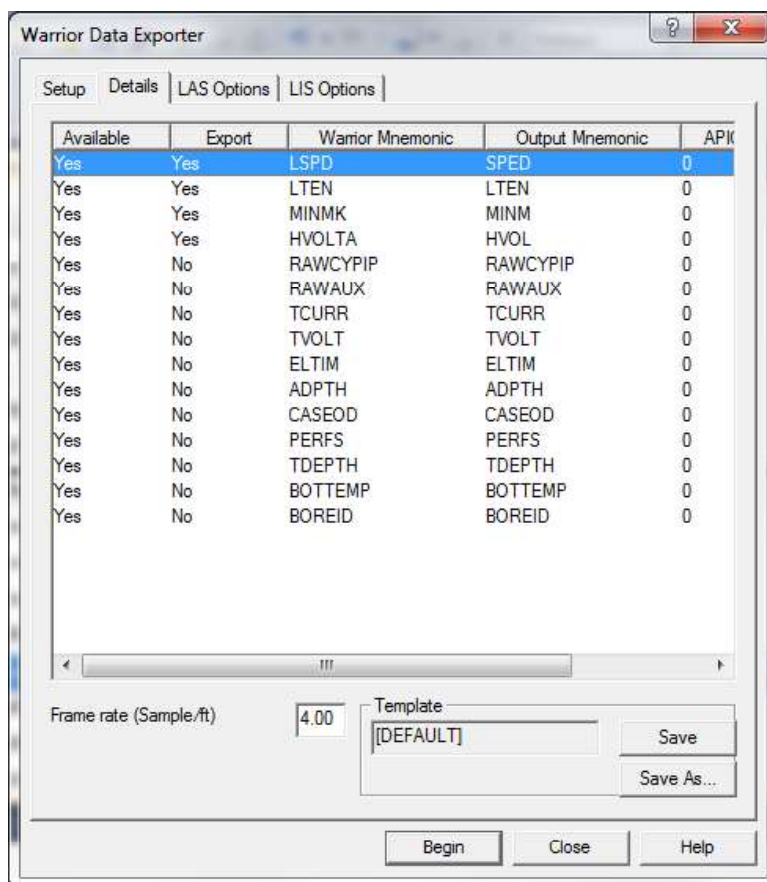


Fig. 12.1.13 LAS, LIS Mnemonics

12.1.5 LAS and LIS Excludes

Any output listed in the excludes list will not show up to be exported.

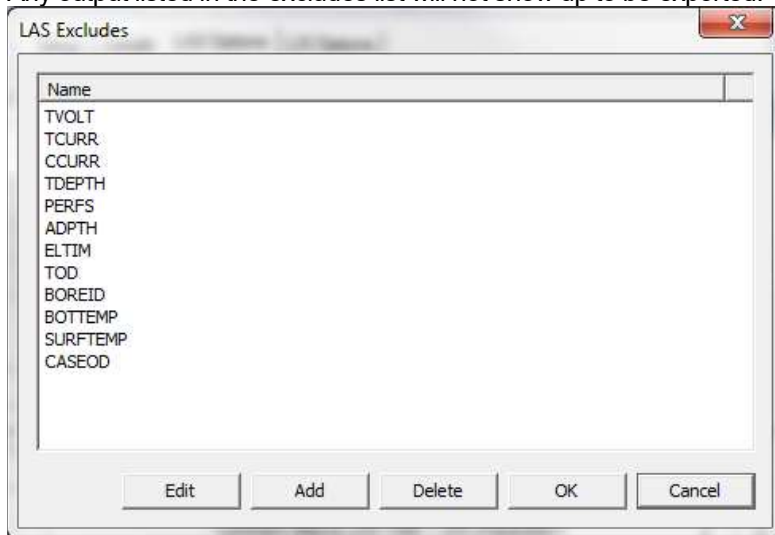


Fig. 12.1.14 LAS, LIS Excludes

12.1.6 Heading data to LAS

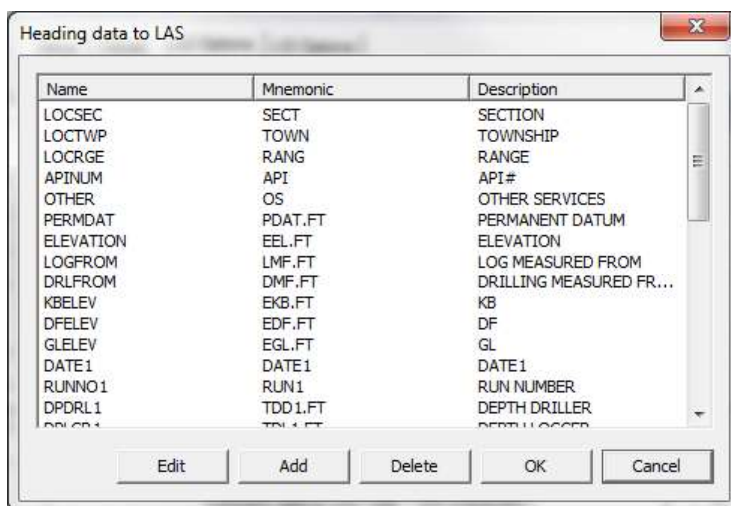


Fig. 12.1.15 Heading to LAS

The first column is the name of the heading item as saved in Warrior. Those names are defined in your heading format file (*.hdg). The Mnemonic is how that particular item will show up in the LAS file:

Mnemonic. *Name from heading information:* Description

The heading data to LIS will work in a similar manner.

12.1.7 Comment data to LAS

If your heading has some longer data you want to display in the LAS file, then add the name to this section. LAS specifications are limited to 255 characters per line. This allows multiple lines of data to be shown – each line < 255 characters. The result will end up in a LAS section labeled as *~Other Information*.

12.1.8 Exporting to LIS

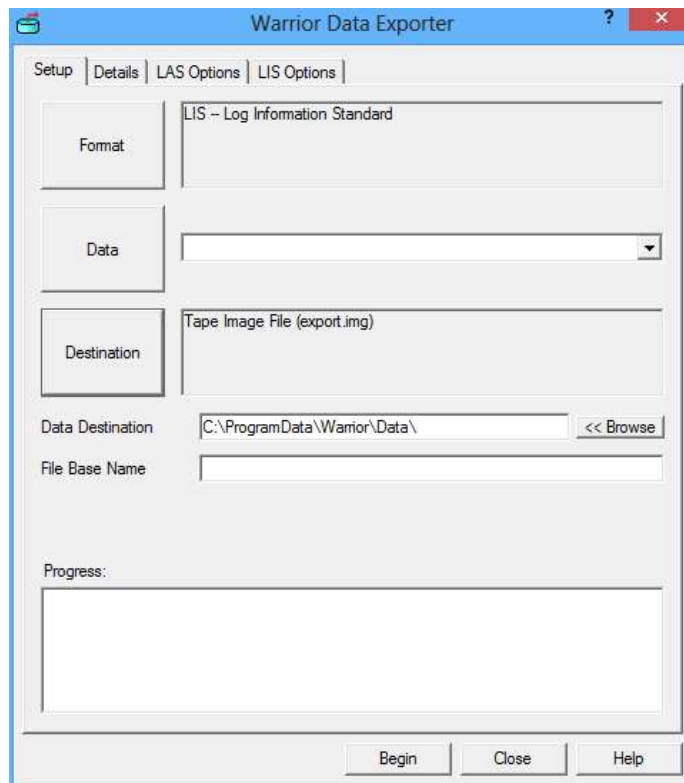


FIG: 12.1.16 LIS Data Exporter

LIS has three destination formats, tap, nti and img.

TAP is a tape compatible format.

NTI and IMG are image formats.

There are three different tape image file types that can be selected by clicking on the [Destination] button when writing LIS files. .IMG files are raw image files. .NTI files are compressed disk image files. .TAP a tape images that were originally use for the Commodore 64 computer. In addition, if the computer you are using has a tape drive installed, it will be shown as a destination.

Consult with your client or computing center to select the most compatible format to their needs.

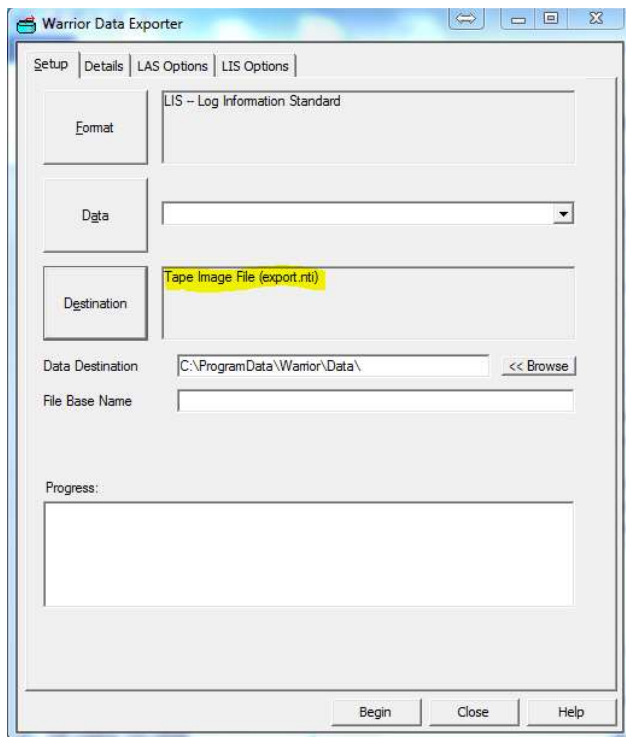


FIG: 12.1.17 LIS Data Exporter

Selecting the LIS data to export is done in a similar manner to LAS data. The main difference is that the Template that is used is an .LET file rather than an .AET file.

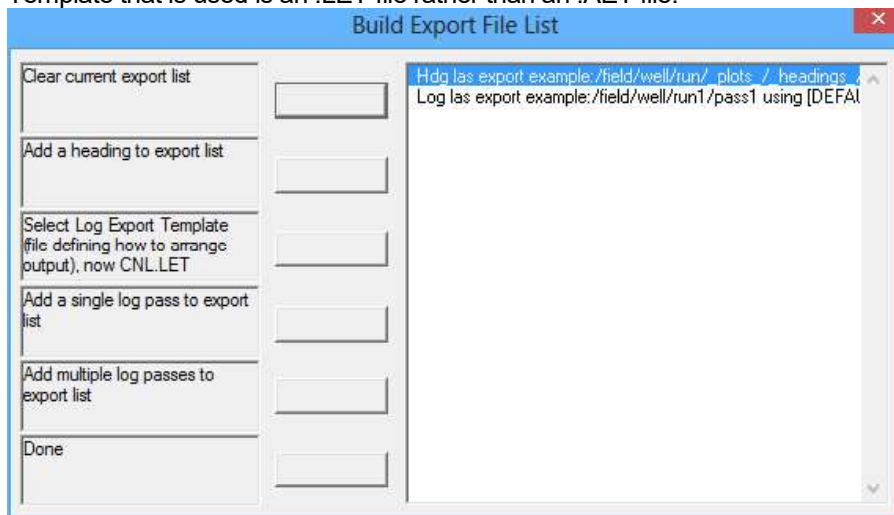


FIG: 12.1.18 Select DATA to Build the LIS File

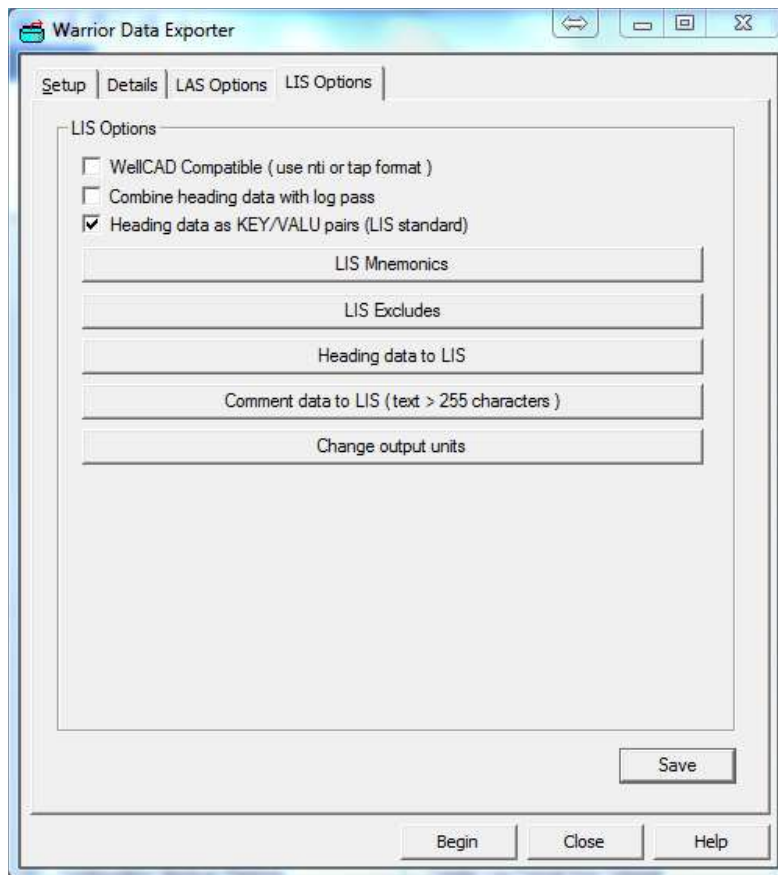


FIG: 12.1.19 LIS Options

The LIS Options has three check boxes.

WellCAD Compatible (use nti or tap format) This will generate a Well CAD software compatible LIS

Combine Heading data with log pass will generate a LIS with both Heading and log data.

Heading data as KEY/VALU pairs (LIS standard) unless otherwise instructed use this selection for LIS generation.

The LIS Mnemonics, LIS Excludes, and Heading data to LIS are the same as they are for LAS.

The Comment data to LIS will take longer comments from your heading and export them to a comment section in the LIS file (LIS logical record type 232).

The Change Output Units allows you to select a specific Warrior unit and assign a text string to it. From the menu you can choose to add delete or edit your assignments. All the Warrior units will appear in a pull down menu ad your output unit will be a free for text.

In the example the pull down unit was degF and the text assigned was degC.

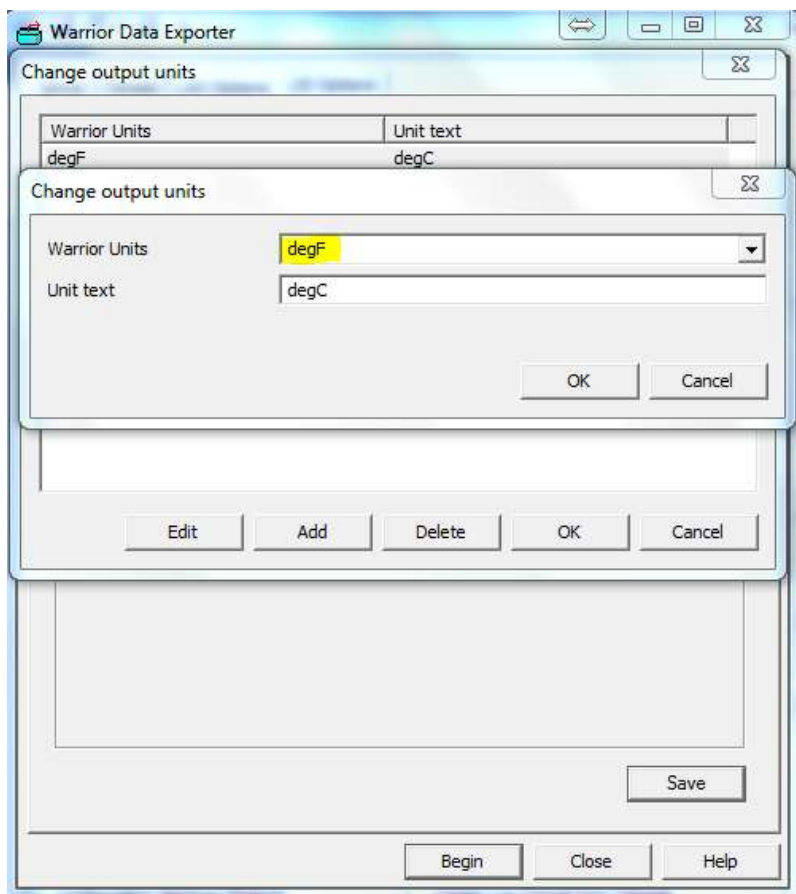


FIG: 12.1.20 LIS Change output units.

12.1.9 Export to ODBC compatible Database

The Export ODBC Compatible Database and Import ODBC into Warrior use the same program and either menu option may be selected. The computer exporting or importing must have Microsoft Office installed in order to use this option.

This program will export data for Excel, Access and other ODBC compatible databases. The limit for exporting data is 255 data points per sample. A normal curve is one data point but a waveform will be many more points for each sample. You will see a message in the progress window that the column count has exceeded if you exceed that amount. In order to export to an ODBC format you must have Microsoft Office installed.



FIG: 12.1.21 Export to ODBC Compatible Database

To prepare data for export, click on the [Source] button to the right of the Warrior database field and select the database and the pass that you want to export. The inputs area will show the available Warrior Mnemonic, the Output Column Name, Units (if applicable), the number of data points per sample, and whether that data item is to be exported. The start and stop depths and the sample length or step size are shown below the Input list. All of these items may be edited.

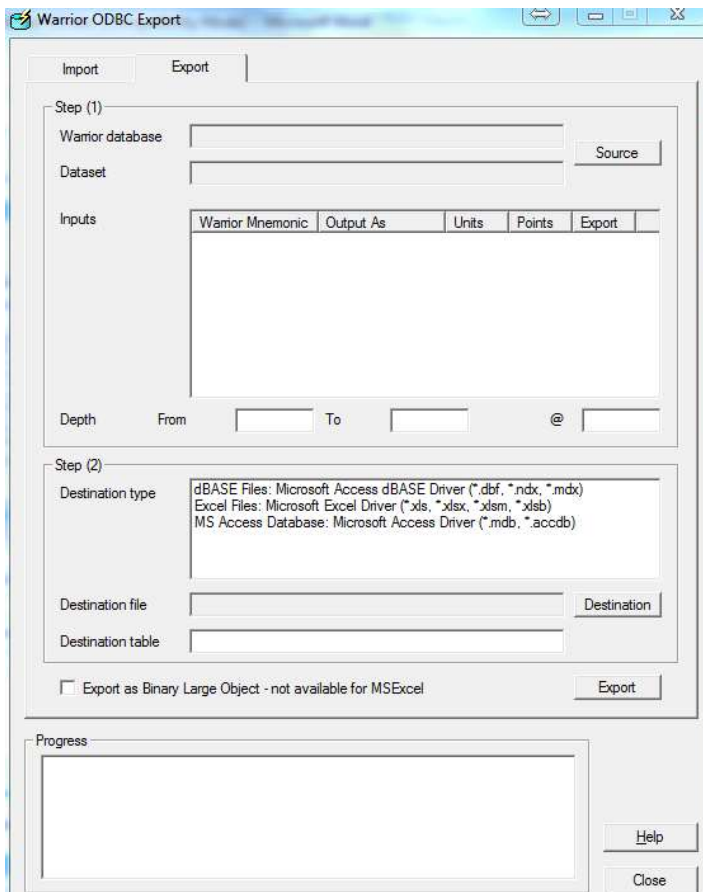


FIG: 12.1.22 Export to ODBC Compatible Database

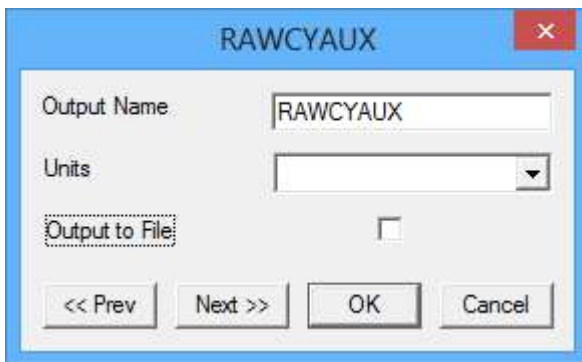


FIG: 12.1.23 Editing of an OBDC Export Item

Each data item may be edited by double clicking on the item. The Output Name may be changed. The units to be used may be selected. There is a check box for whether the item is to be includes in the export file.

The Destination type (dBase, Excel, etc.) must be selected before the destination file name and table name can be selected.

When the [Export] button is clicked a dialog box will come up confirm the output version. When the [OK] button is clicked, the export will begin and progress will be shown in the Progress window.

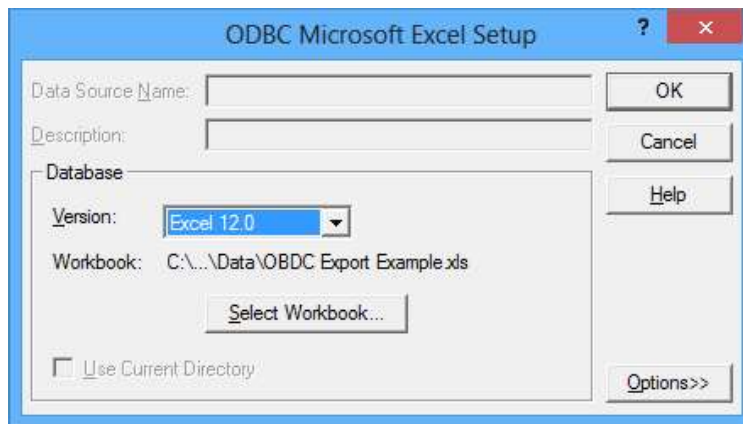


FIG: 12.1.24 Confirming Output Version

12.1.10 Extract Pass(es) to New Database.

The Extract Pass(es) to a New Database Utility allow the User to selectively copy passes from an existing database to a new one.



FIG: 12.1.25 Extract Pass(es) to New Database

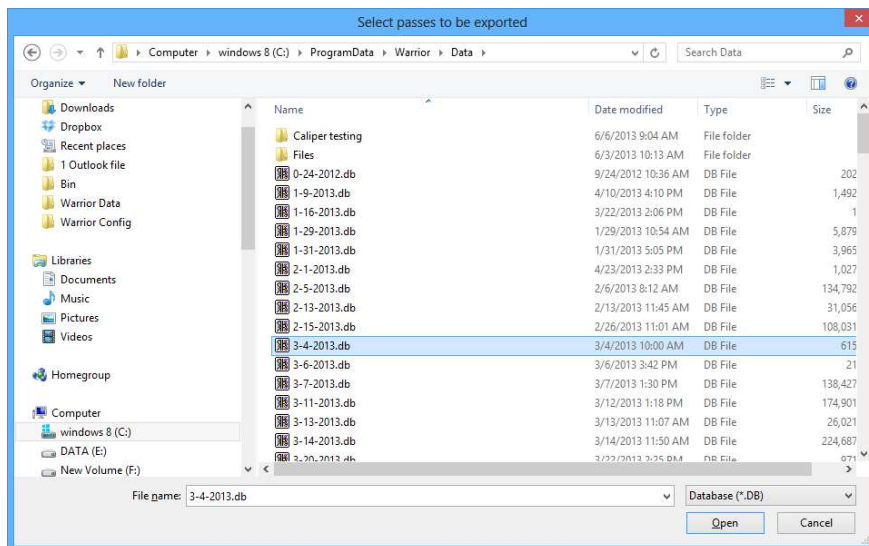


FIG: 12.1.26 Select Database

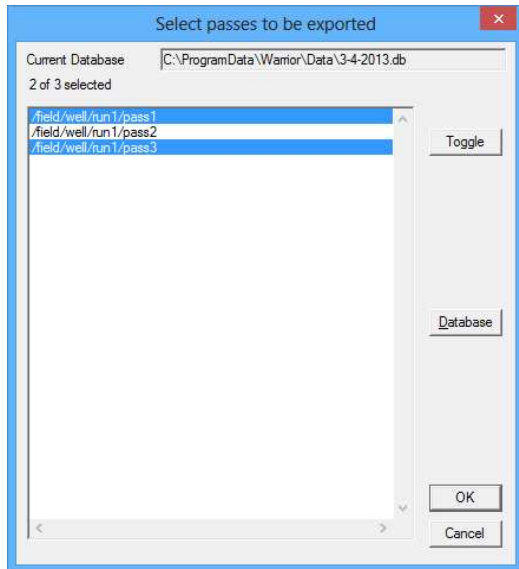


FIG: 12.1.27 Select Pass(es)

You will be first asked to select the database and the pass / passes that you want extracted. Hold {CTRL} to select multiple passes. Then you will be asked for the copy target where the extracted passes will be sent.

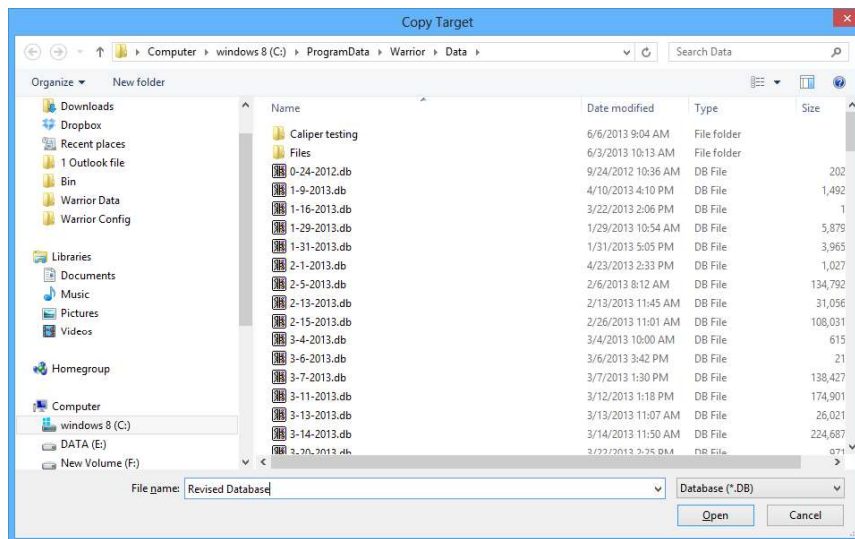


FIG: 12.1.28 Copy Target

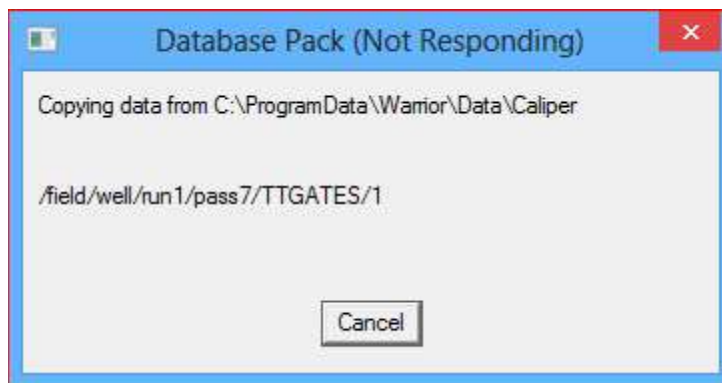


FIG: 12.1.29 Packing

Depending upon the amount of data being copied, you will see a progress showing each item being copied into the new database.

12.1.11 Export via Internet

The Export via Internet Utility allows the User to setup remote access to specified database and may include password protection. This allows a Warrior User at a remote site access to specified database in real time. Be aware that for the remote User to access the data, you will need to supply them with the IP address of your computer and the password to access each database.

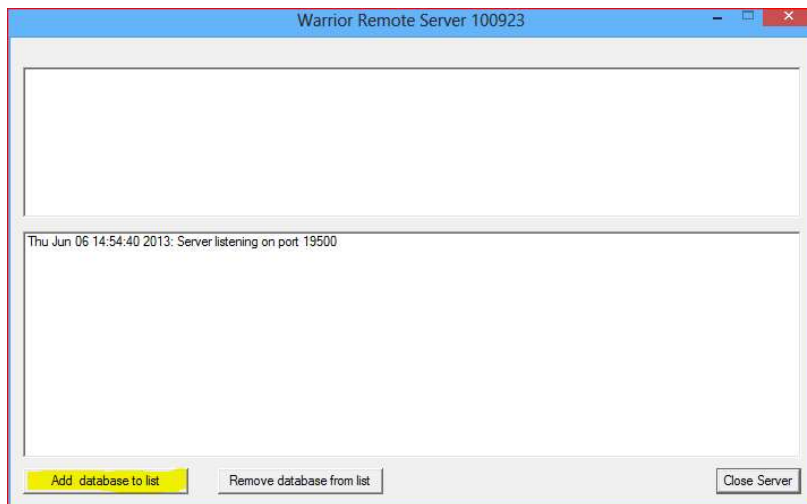


FIG: 12.1.30 Remote Server for Export via Internet

To add database for remote viewing, click on the [Add database to list] button. After the database has been selected, you will have the option to add a password so that only remote Users that you have given the password to can access the database. You may add as many database to the list as you wish, with each having its own password.

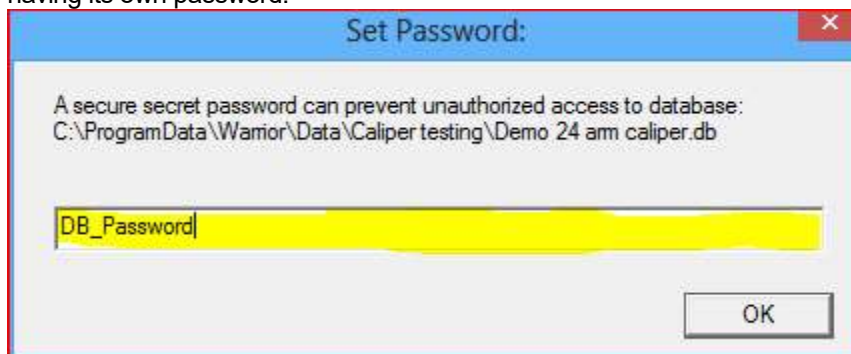


FIG: 12.1.31 Adding Password for remote access database

12.2 Interpretation Tools

12.2.1 Mathpack

[See section 15](#)

12.2.2 XY Plot

A cross plot will consist of one or more curves. Each curve will be created by plotting database items against depth or time or from one database item against another database item.



FIG: 12.2.1 XY Plot

Select a database to work with.

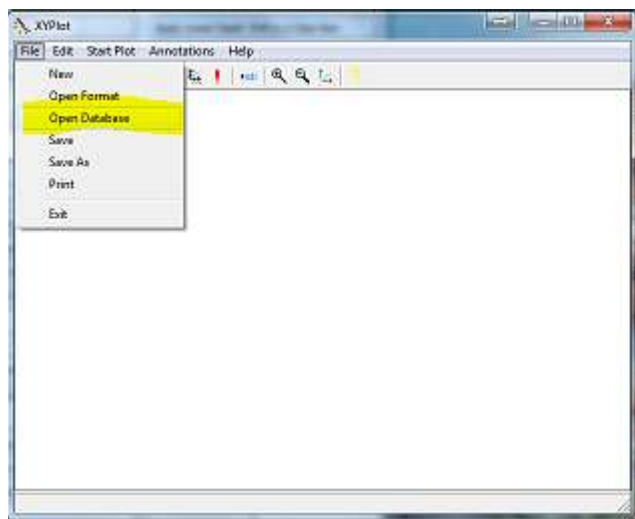


Fig: 12.2.2 Database selection

If you have an existing format file (.xpt) you can open it at this time.

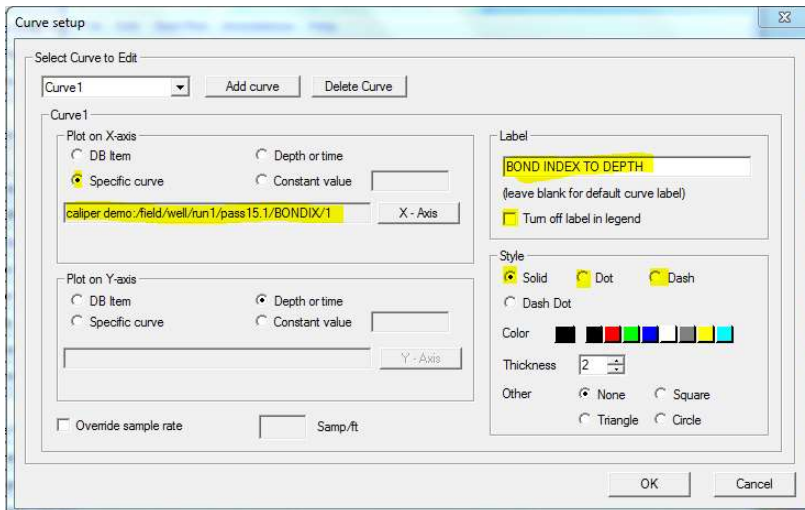


Fig:12.2.4 Curve Setup

Select New from the menu, if you have not loaded an existing (.xpt) file.

Select **Add Curve** to create each curve. Each curve name will increment by 1 as you add curves. Select **Delete Curve** to delete the selected curve from the plot.

To set up the cross plot you must first select what will be plotted on each axis. If depth or time is selected to plot on the x-axis, then no item will be selected to plot on the x-axis. Next select what database item(s) to plot by selecting the X - Axis or Y - Axis buttons. If you want to plot one database item vs. another, the items do not have to come from the same pass, but they must both be recorded on depth or both be recorded on time. Also the items must have an overlapping depth or time interval to plot from.

Once the plot setup is complete select the **OK** button, and the plot will start. The scaling will be done automatically. To change how the plot is scaled select **Edit/Scaling**.

The plot can be made real-time, and if the auto-scale option is used, the plot will resize automatically to fit all of the data points as needed.

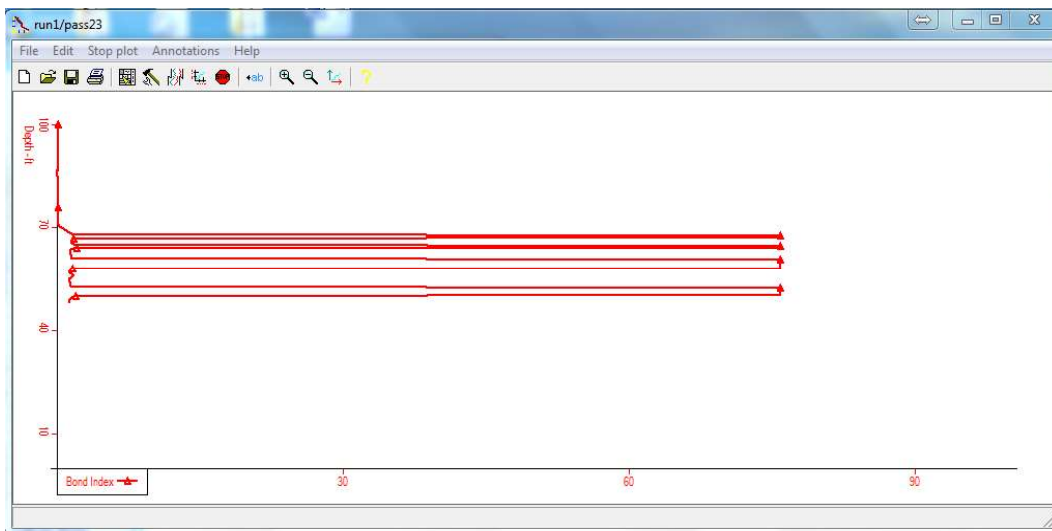


Fig:12.2.5 XY Plot Bond Index depth

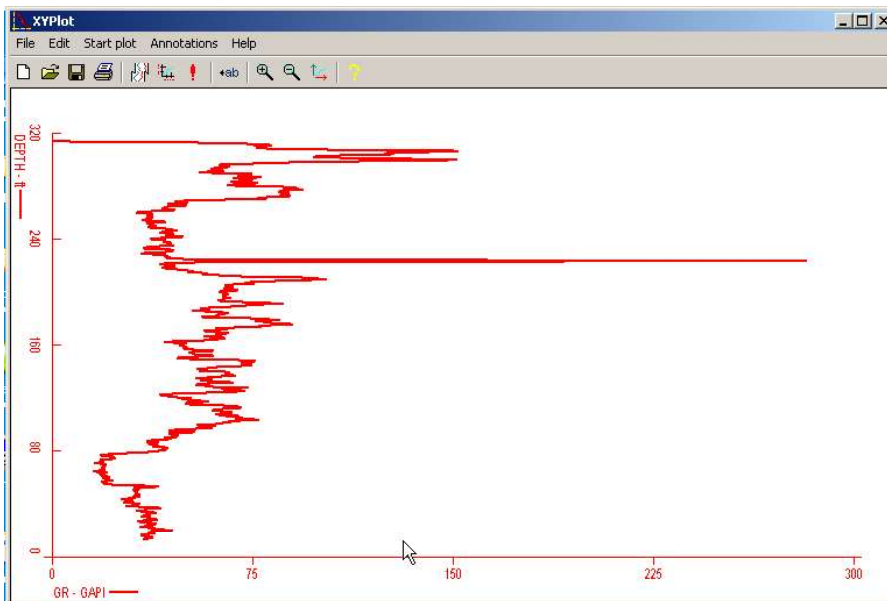


FIG: 12.2.6 XY PLOT Gamma ray Depth

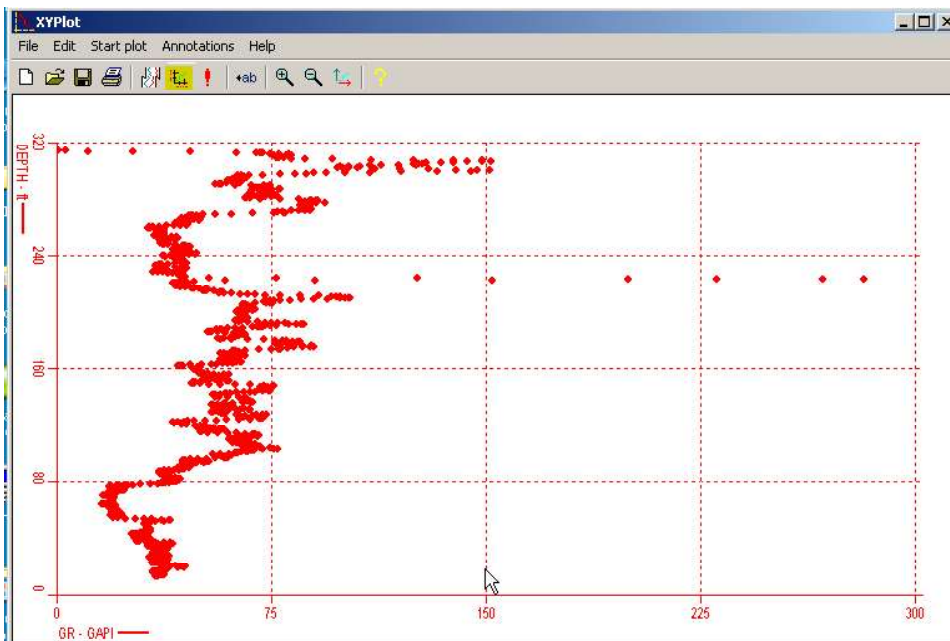


FIG: 12.2.7 XY Plot Selecting no lines between points

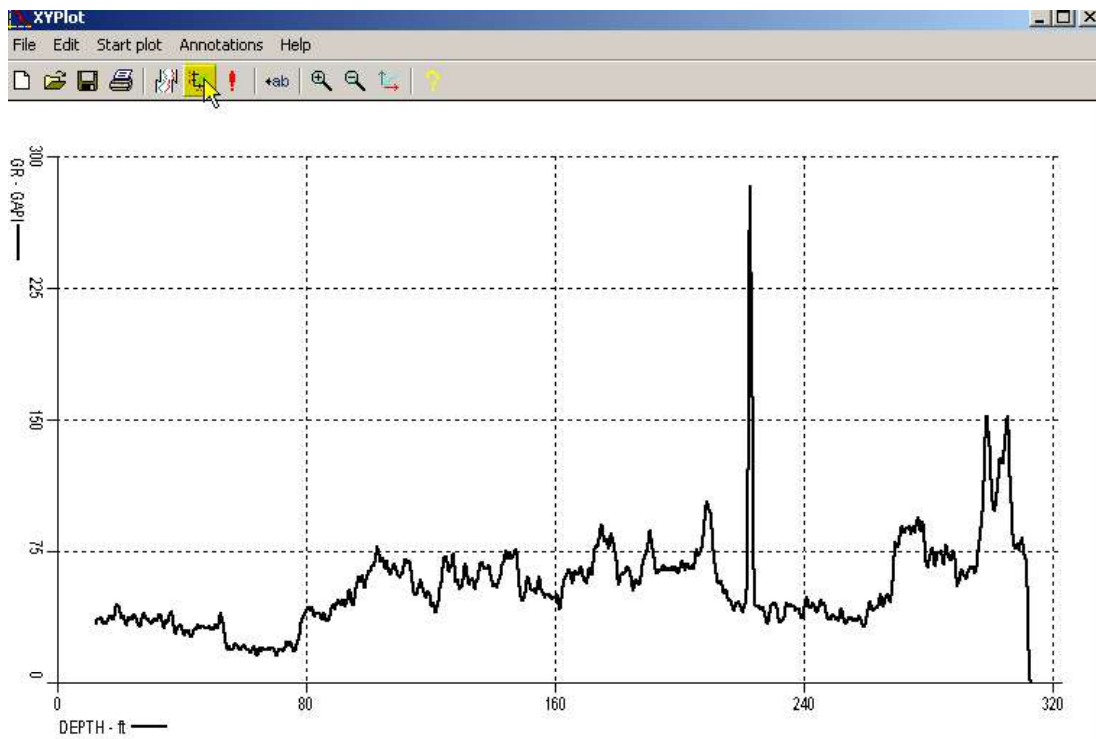


FIG:

12.2.8 XY Plot Depth Gamma ray

The 'Curve setup' dialog box is shown, allowing configuration for 'Curve1'. It features a 'Select Curve to Edit' section with a dropdown menu set to 'Curve1' and buttons for 'Add curve' and 'Delete Curve'. The main configuration area is divided into 'Plot on X-axis' and 'Plot on Y-axis' sections. Both sections have radio buttons for 'DB item', 'Specific curve', 'Depth or time', and 'Constant value'. The 'Specific curve' option is selected in both, with the text 'true simpson # 1-29 aug 5 2013:/field/well/run1/pass3.1/' entered in the adjacent text field. The 'X - Axis' and 'Y - Axis' labels are visible next to the text fields. A 'Label' section contains a text field (with a note '(leave blank for default curve label)') and a checkbox for 'Turn off label in legend'. A 'Style' section includes radio buttons for 'Solid', 'Dot', 'Dash', and 'Dash Dot', with 'Solid' selected. Below this is a 'Color' section with a 'Thickness' spinner set to 1. An 'Other' section has radio buttons for 'None', 'Square', 'Triangle', and 'Circle', with 'None' selected. At the bottom, there is an 'Override sample rate' checkbox and a 'Samp/ft' text field. 'OK' and 'Cancel' buttons are at the bottom right.

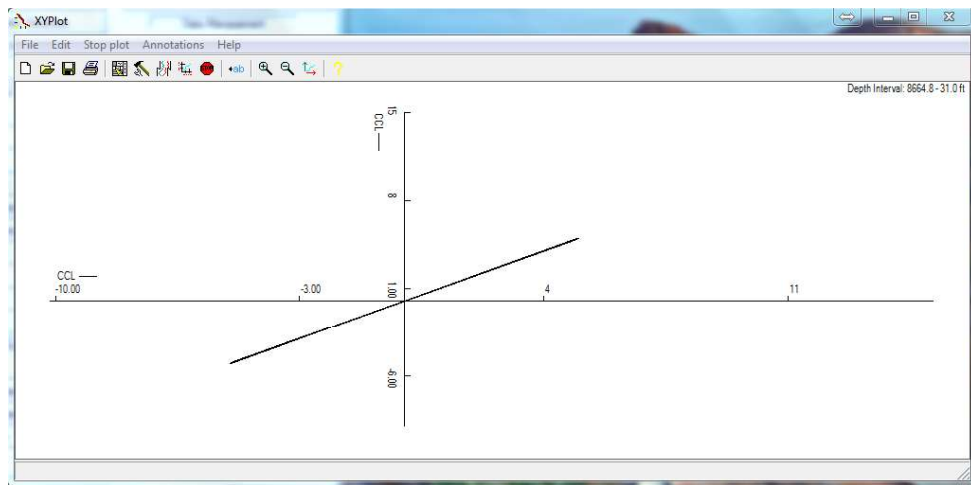


FIG: 12.2.9 Selecting CCL for X and Y Axis

A separate axis will be drawn for each curve unless the option **Overlap scales for each curve** is selected. If the auto-scale option is selected for the x or y axis, the left, right and/or top, bottom scales will automatically be calculated to fit all of the data within the plot. If it is not selected, you can enter the scales yourself. If only one database item is selected to plot, then one of the axis will be depth or time. When plotting two database items, there is a depth or time scaling option. It can be auto-scaled or a range can be selected. The scales for the depth or time must be within the recorded range of the interval being plotted.

The x and y origin is defaulted to (0,0). If the origin is outside the range of data being plotted, then the origin will be moved to the bottom left corner of the plot.

The X and Y ticks give an approximate count to the number of gridlines that will be shown on that axis. The gridlines will attempt to be drawn at an integral distance apart, so the displayed ticks may not be the same as what are requested.

Sometimes it may not be appropriate to draw a line to connect each data point. To make a dot for each data point, deselect the option "Draw a line between plotted points".

12.2.2.2 Plotting

If the plot is being created as the data is being collected, then the **Start Plot** button will change to **Stop Plot**. Press the **Stop Plot** button to halt the plotting. If the data collection continues, then press Start Plot to plot the entire collected interval again. Starting the plot in the middle of data collection will plot over the interval as described in Scaling.

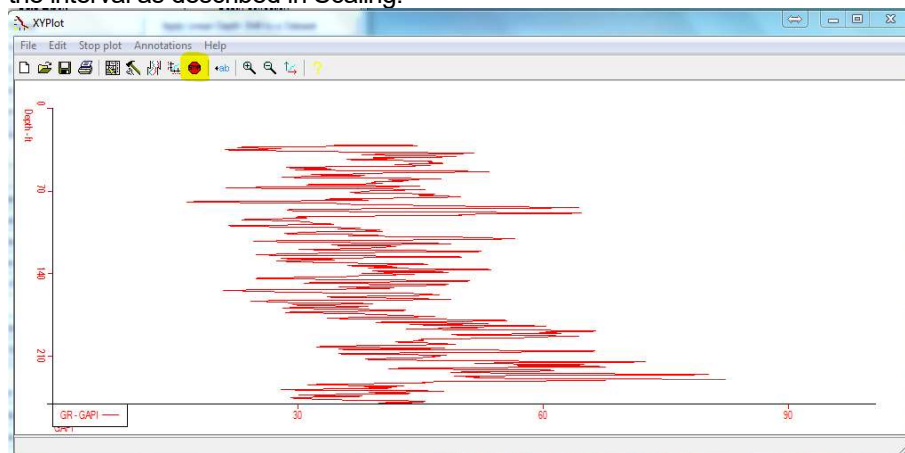


FIG: 12.2.10 Start Stop Plot Button

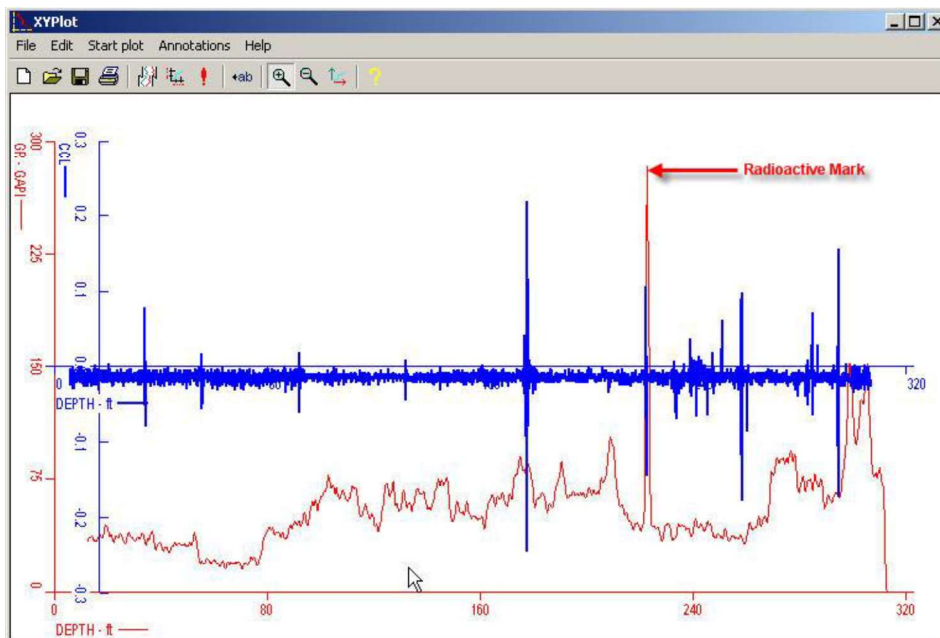


FIG: 12.2.11 XY Plot Two curves in the same chart

12.2.3 Scaling

The scaling menu allows you to manually or automatically scale both the x and y axis. It also has the options to set grid for both the x and y axis. There are four check boxes that select either displaying or not the grid lines, drawing lines between points and displaying scales.



FIG: 12.2.12 XY Plot Scaling

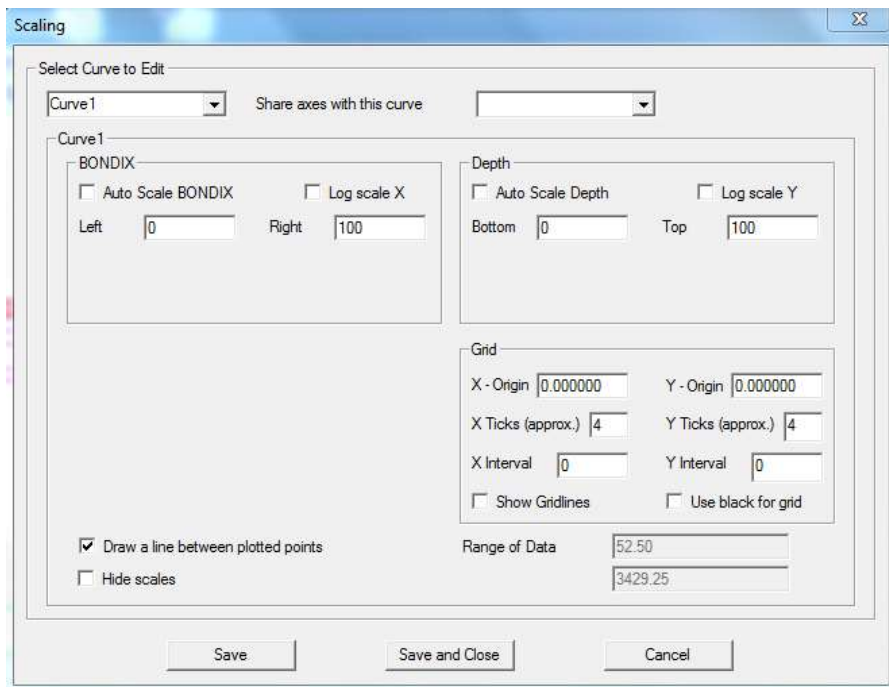


Fig:12.2.13 Scaling Menu

12.2.4 Annotations

To create an annotation, select **Annotations/Create** or click on the "<-ab" annotation button in the toolbar. When the annotation button is depressed, an annotation can be added. When the cursor is moved in to the plot area, the cursor will change to indicate the type of annotation that will be added. Right click on the mouse to change the annotation type. Left click to place the annotation on the plot. Type in the text for the annotation while the annotation is highlighted. To move an annotation, click and hold the left mouse button and drag the annotation to the appropriate position. To delete an annotation, left click on the item to be removed. When it is highlighted, press the delete key. To edit an annotation, left click on the item and then type in the new text.

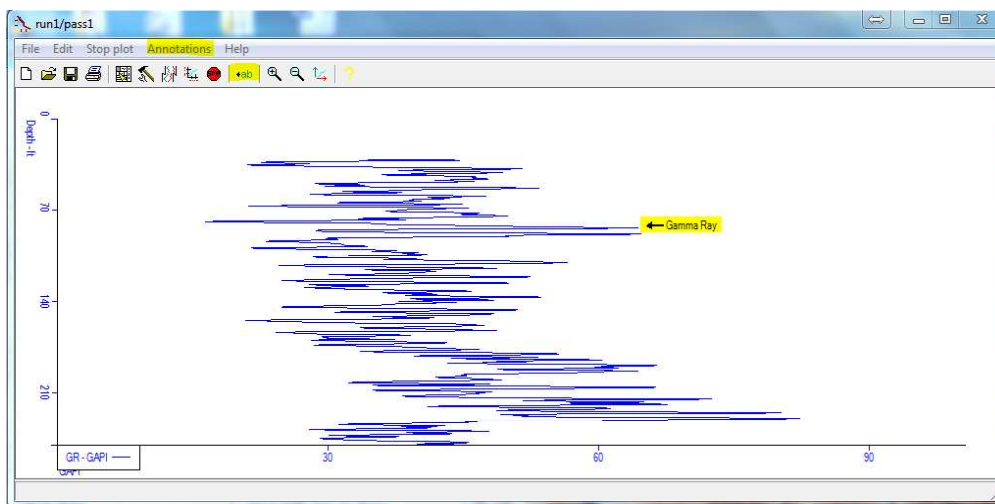


Fig:12.2.14 Anotations

12.2.5 Zoom

Select the Zoom in, Zoom out buttons to change the cursor to a magnifying glass. Then select the area of the plot to magnify. To set the plot back to it's default size, select the Auto scale button.

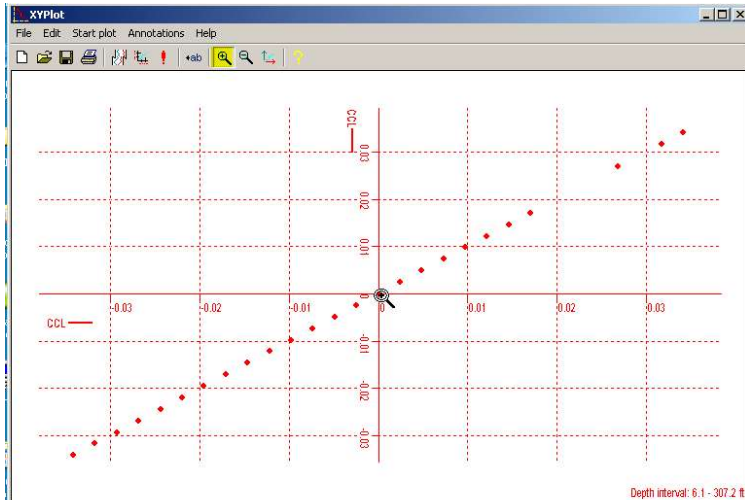


FIG: 12.2.15 XY Plot zoom feature

12.2.6 Save and Restore

When saving the cross plot, two items can be saved. First the cross plot can be saved to a Warrior database to be plotted with pplot. Second, the plot setup can be saved and restored at a later time with the cross plot program. Saving the setup does not save the plot itself - it only saves the curve(s) being plotted and the setup used to create the plot.

The plot heading is only seen when the plot is printed. It can accept multiple lines by hitting the enter key at the end of each line.

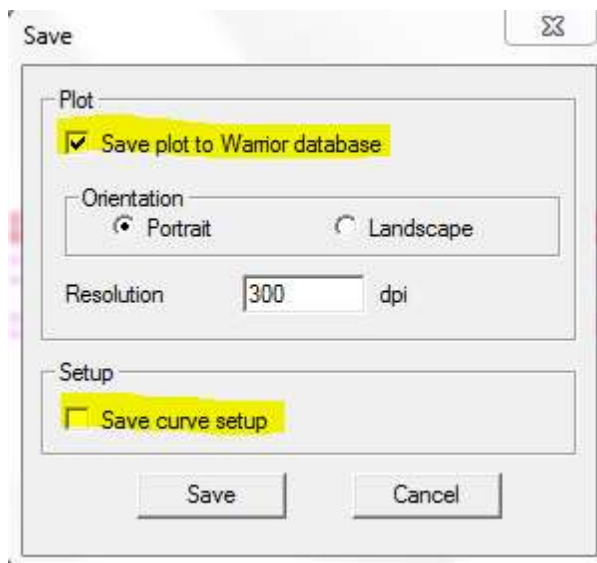


Fig:12.2.16 Save Plot and Setup

12.2.3 Tracer Interpretation



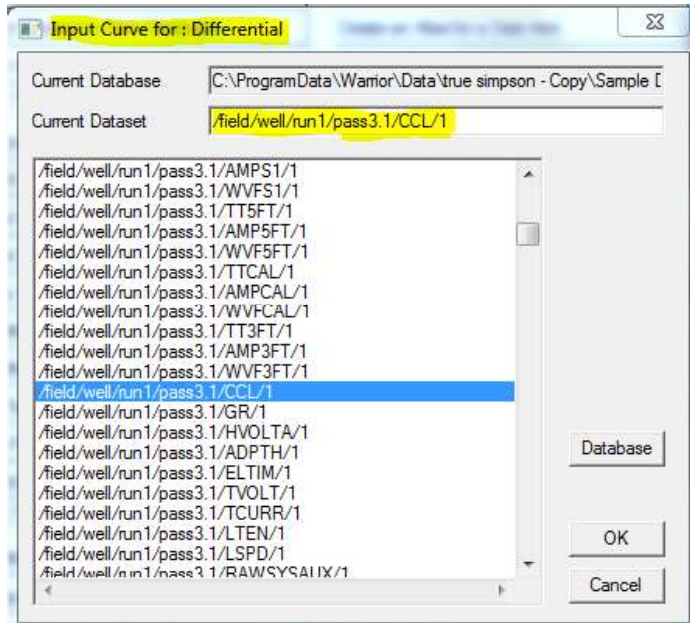
FIG: 12.2.17 Tracer Interpretation

[See Section 27](#)

12.2.7 Create Differential Curve



FIG: 12.2.18 Create Differential Curve



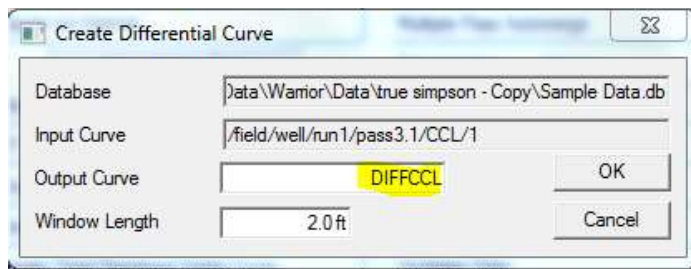


FIG: 12.2.19 Create Differential curves. (DIFFCCL)

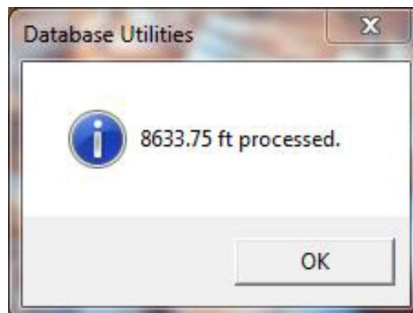


FIG: 12.2.20 Processing

12.2.8 Create Total Dissolved Solids Curve

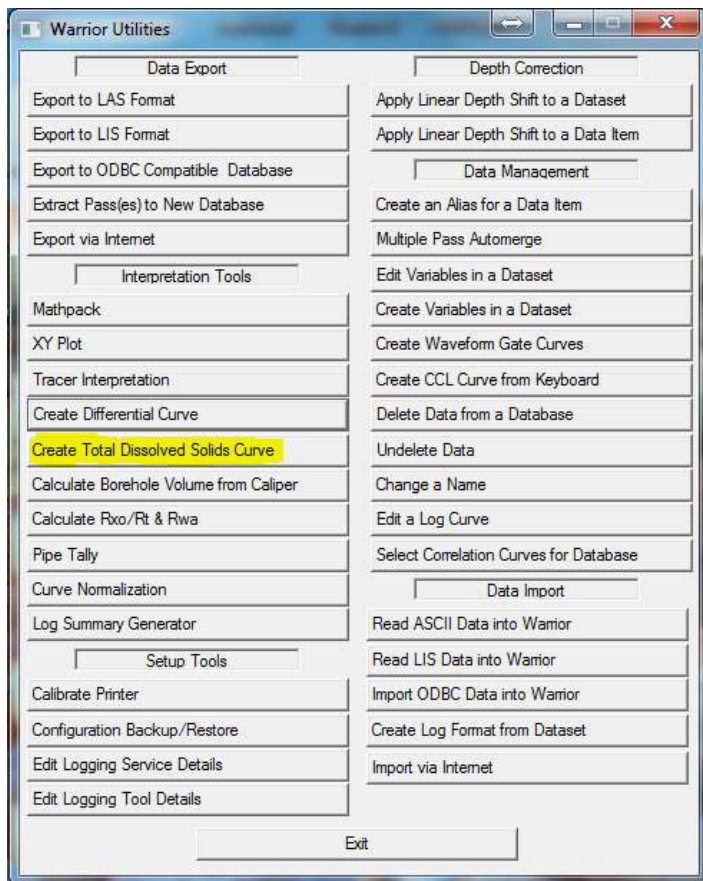


FIG: 12.2.21 Create Total Dissolved Solids Curve

When you select the Create total Dissolved Solids Curve the system will request a data base and the Deep resistivity curve.

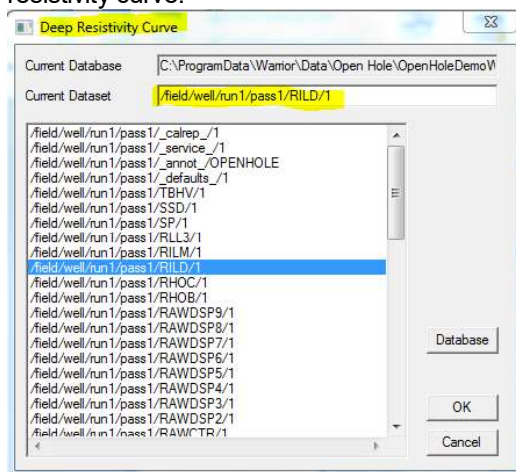


FIG: 12.2.22 Deep Resistivity

Then it will request the Delta Temp curve.

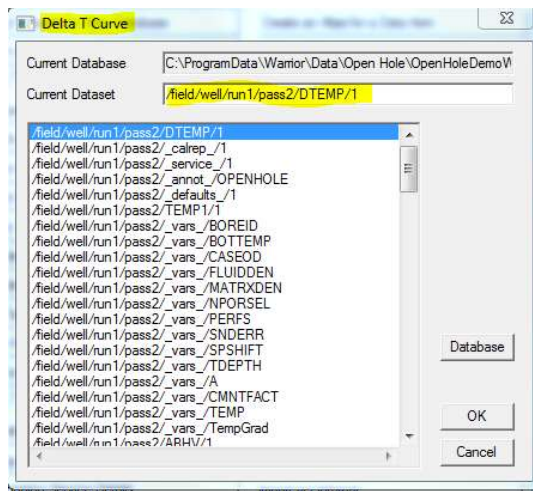


FIG: 12.2.23 Delta Temp

12.2.9 Calculate Borehole Volume from Caliper



FIG: 12.2.24 Calculate Borehole Volume from Caliper

When selecting the “Create Borehole Volume from Caliper” the software will prompt you for Volume X Caliper Curve select your X Caliper and then OK.

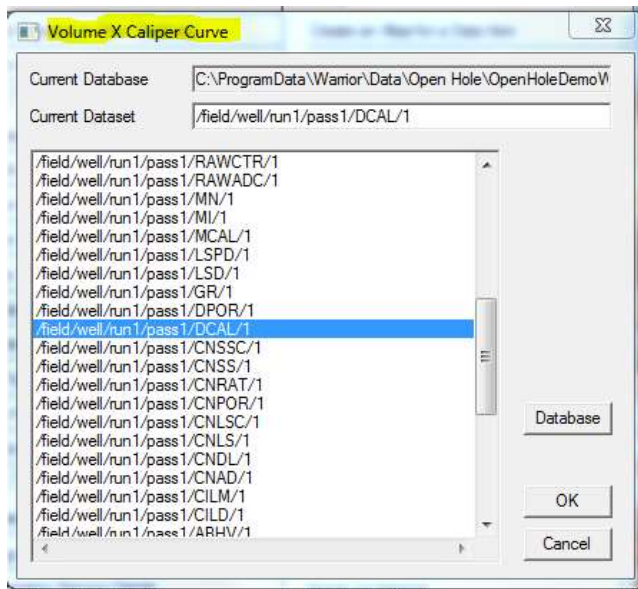


FIG: 12.2.25 Volume X Caliper Curve

Then you will be prompted for "Volume Y Caliper Curve" If you do not have one select the same curve as for the X Caliper.

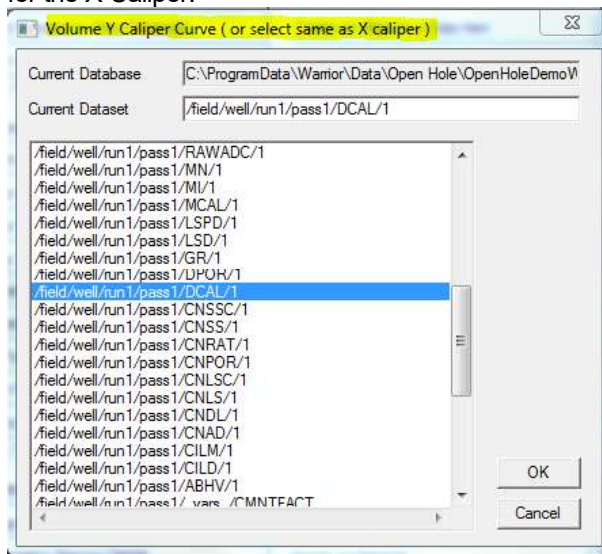


FIG: 12.2.26 Volume Y Caliper Curve

This will generate the Hole volumes. It ask if you want to calculate volumes to surface answer appropriately. It will then indicate the total footage processed.

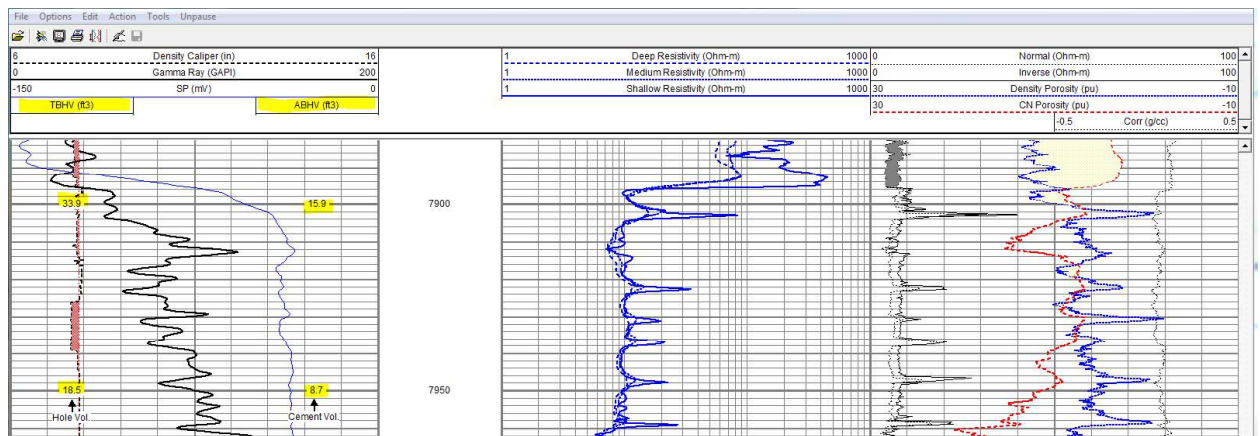


FIG: 12.2.27 Hole Volumes displayed As Tabular curves.

12.2.10 Calculate Rxo/Rt and Rwa Curves



FIG: 12.2.28 Create Total Dissolved Solids Curve

Click on the Calculate R_{xo} / R_t button. This produces a file selection box, where the required database may be selected. Double click or Open the database file containing the input data for the calculation. The program presents a list of the log curves present in the database and requests selection of the R_t curve. Select the desired curve.

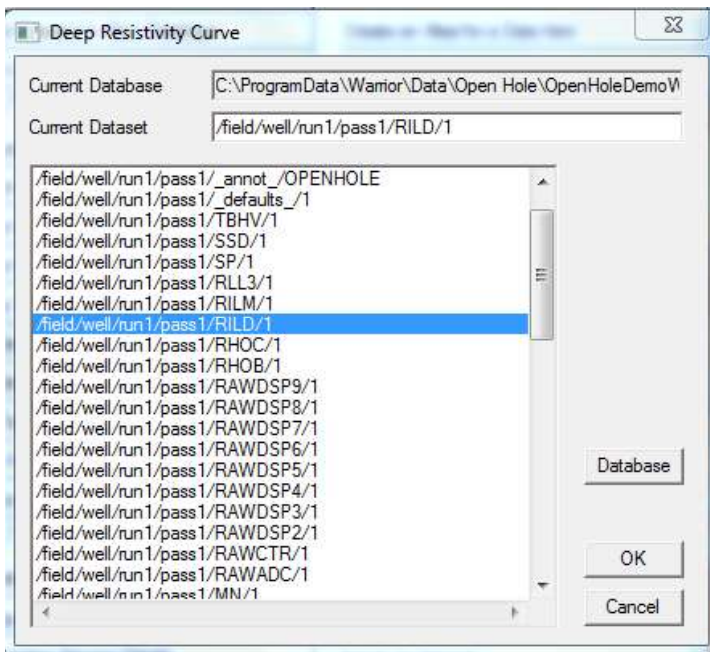


FIG: 12.2.29 Select Dataset for Deep Resistivity Curve

The system then requests the selection of the shallow resistivity curve.

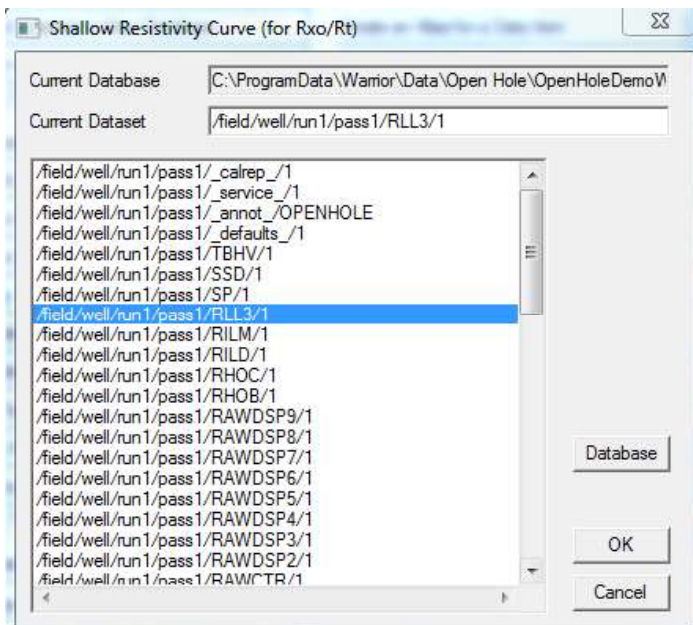


FIG: 12.2.30 Select Dataset shallow Resistivity Curve

The system then requests the porosity curve for the calculation of R_{wa} .

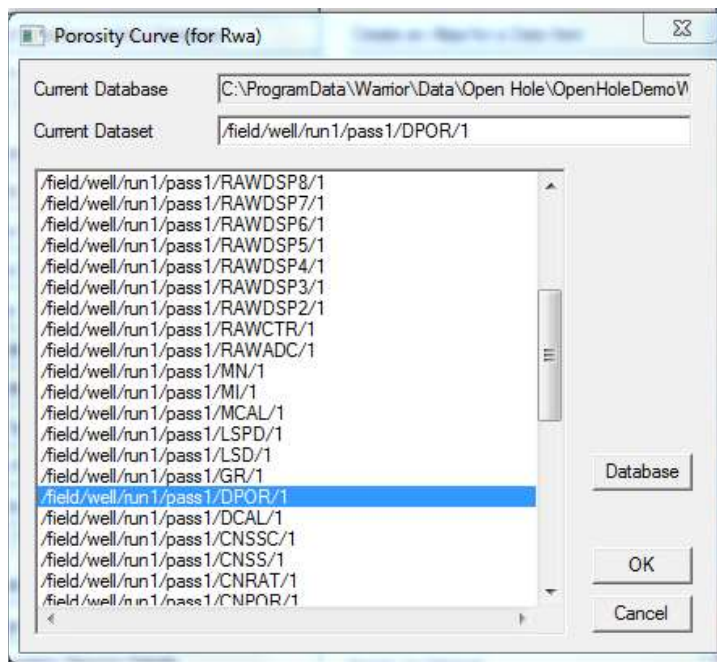


FIG: 12.2.31 Select Dataset for Porosity

Note that the “A” and “M” variables must be present in the dataset for Rwa to be calculated. To set the values of “A” and “M” use Edit Variables in a Dataset. After selecting the porosity curve the system requests the name of the dataset for the output.

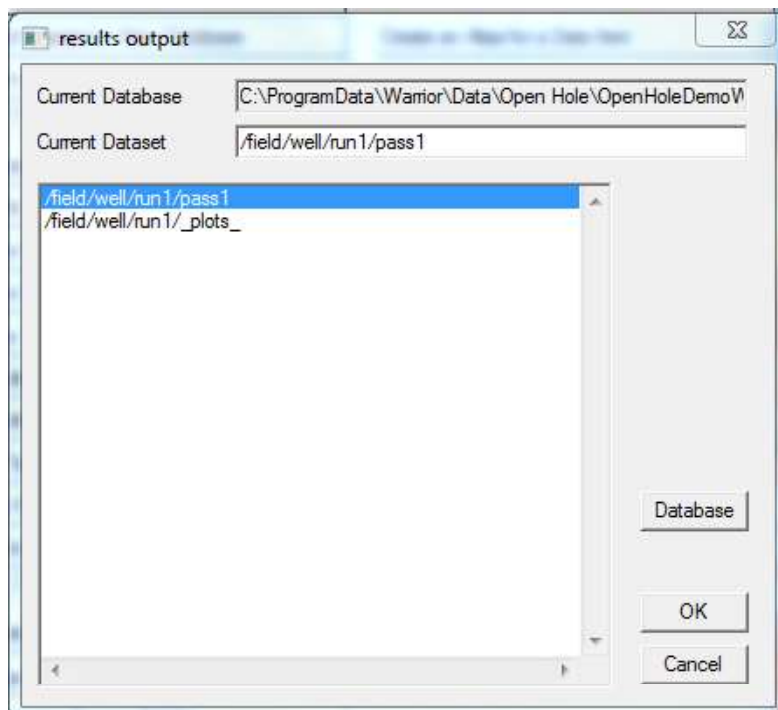


FIG: 12.2.32 Select Dataset Output

Select the required dataset and the system computes the R_{xo} / R_t and R_{wa} curves and displays a message indicating completion and log interval processed.

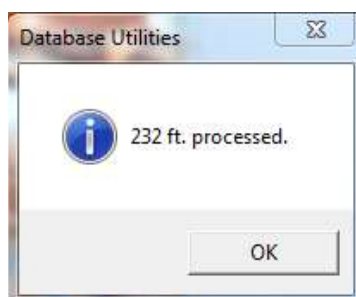


FIG: 12.2.33 Processing

Note that in order for the R_{xo} / R_t and R_{wa} curves to appear on the log, the respective curves must be added to the log format. The mnemonic for the R_{xo} / R_t and R_{wa} curves are RXORT and RWA respectively.

12.2.8 Pipe Tally



FIG: 12.2.34 Pipe Tally

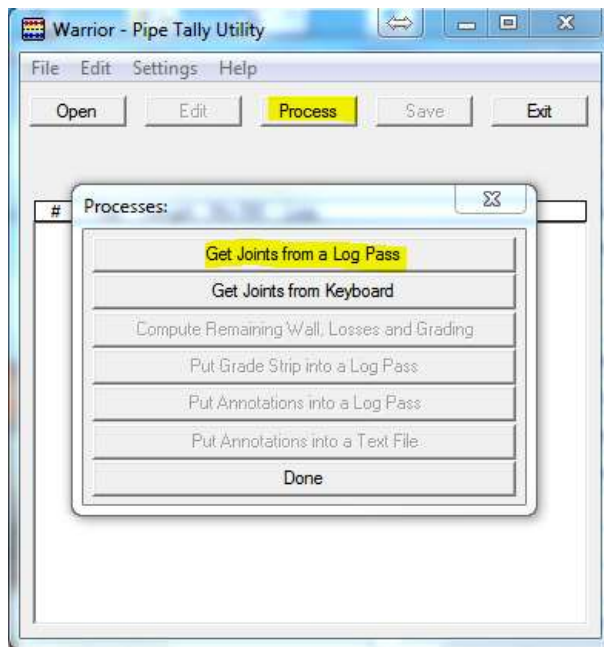


FIG: 12.2.35 Get Joints from a Log Pass

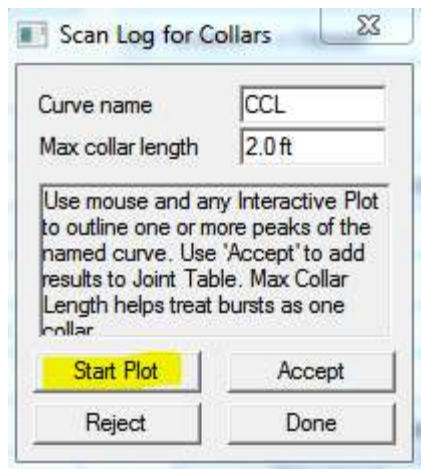


FIG: 12.2.36 Scan log for Collars

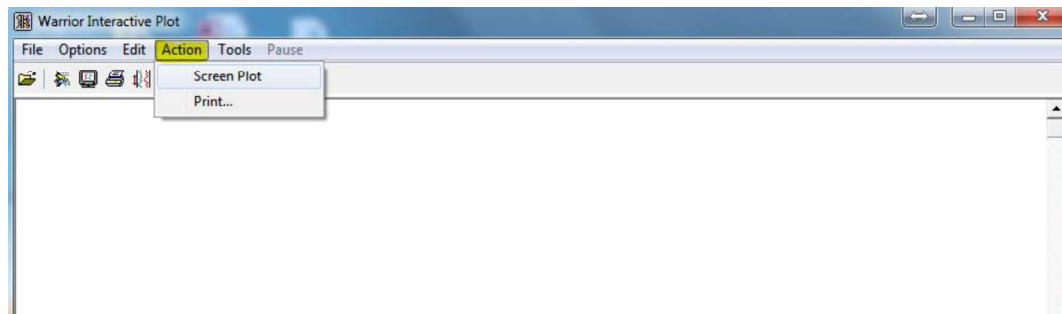


FIG: 12.2.37 Screen Plot

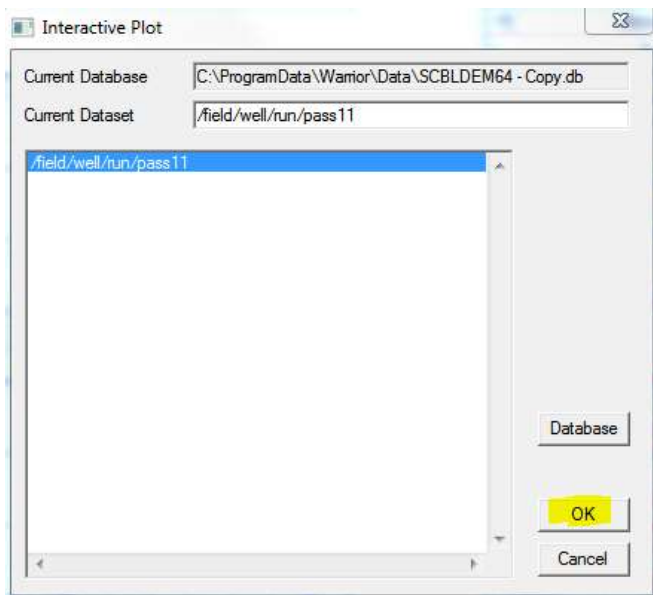


FIG: 12.2.38 Scan Pass

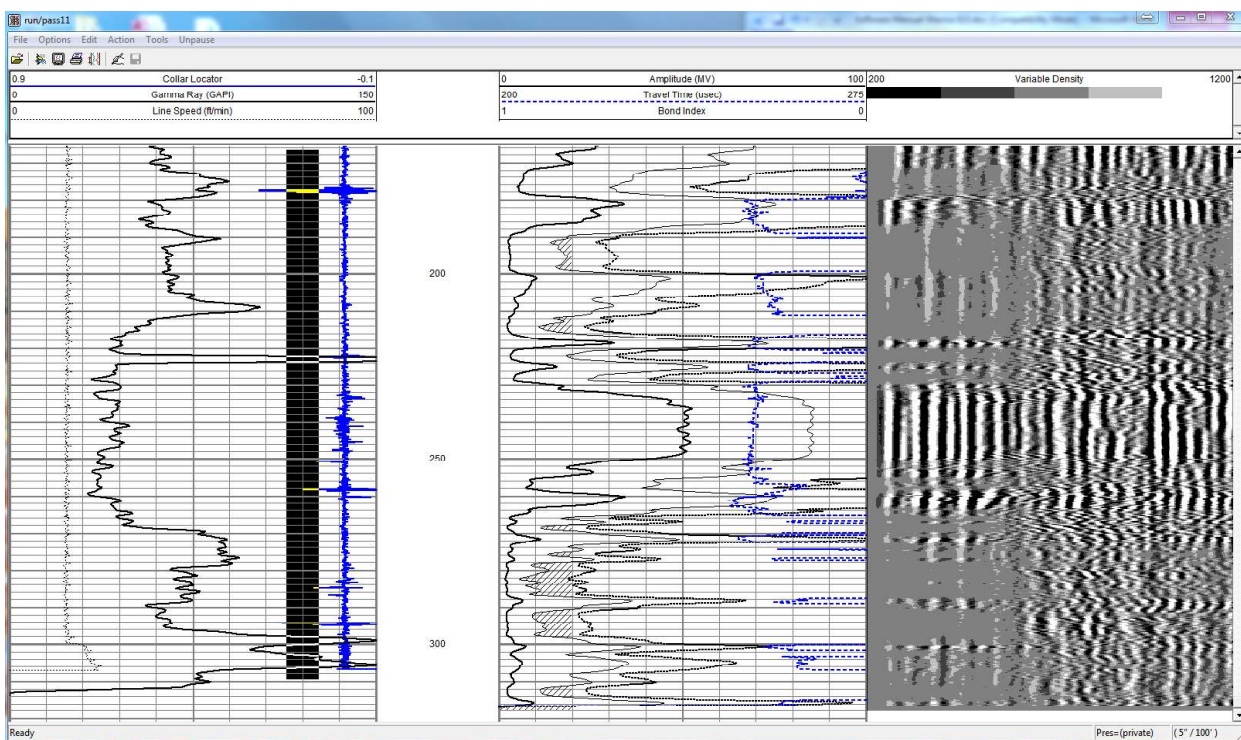


FIG: 12.2.39 Plot Pass and select area

Scan Log for Collars

Curve name: CCL

Max collar length: 2.0 ft

Cnt: 5 collars, 4 joint(s)

Rng: 178.1 ft to 285.0 ft

Min: 7.5 ft

Max: 44.3 ft

Avg: 26.7 ft

Buttons: Start Plot, Accept, Reject, Done

FIG: 12.2.40 Accept

Scan Log for Collars

Curve name: CCL

Max collar length: 2.0 ft

Buttons: Start Plot, Accept, Reject, Done

FIG: 12.2.41 Done

Processes:

- Get Joints from a Log Pass
- Get Joints from Keyboard
- Compute Remaining Wall, Losses and Grading
- Put Grade Strip into a Log Pass
- Put Annotations into a Log Pass
- Put Annotations into a Text File
- Done

FIG: 12.2.42 Done

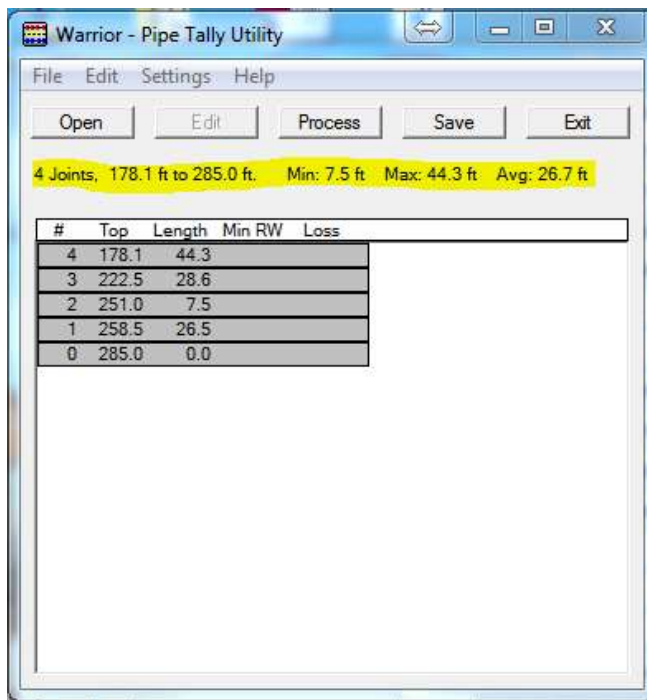


FIG: 12.2.43 Results

For a more detailed look at Pipe Tally as it relates to multi armed caliper see section 18.

[18.1 Caliper Presentation](#)

12.2.11 Curve Normalization

This program will cross plot two curves over a chosen interval. Then it calculates the gain and offset required to apply to the second curve (Curve to be normalized) to make it overlay the first (Reference curve).

Select the reference curve, then the curve to be normalized. Interactive plot should start with the reference log pass. You should be able to plot the curve to be normalized on that same pass - look in the progress window to see the name (alias) that was created for the normalized curve. From interactive plot you can drag a rectangle over the interval to choose the depth range for normalization. Once that is done, and then selects MakeXY. If you are satisfied with the data points in the XY plot, then select Normalize. Interactive plot will start again, but this time with the pass from the normalized curve. If you look in the progress window, another curve will have been created in the Normalized pass. That curve will be what the curve looked like prior to the normalization. The name should be the same as the normalized curve except preceded by a ':', and the normalized curve will have the original name.



FIG: 12.2.44 Curve Normalization

12.2.12 Log Summary Generator

The log summary generator will produce a statistical analysis of tabular data in a database. There are radio buttons to select **Minimum**, **Maximum**, **Average** and **Standard Deviation**. The resultant table can be appended to the database and can be included in the plot job.

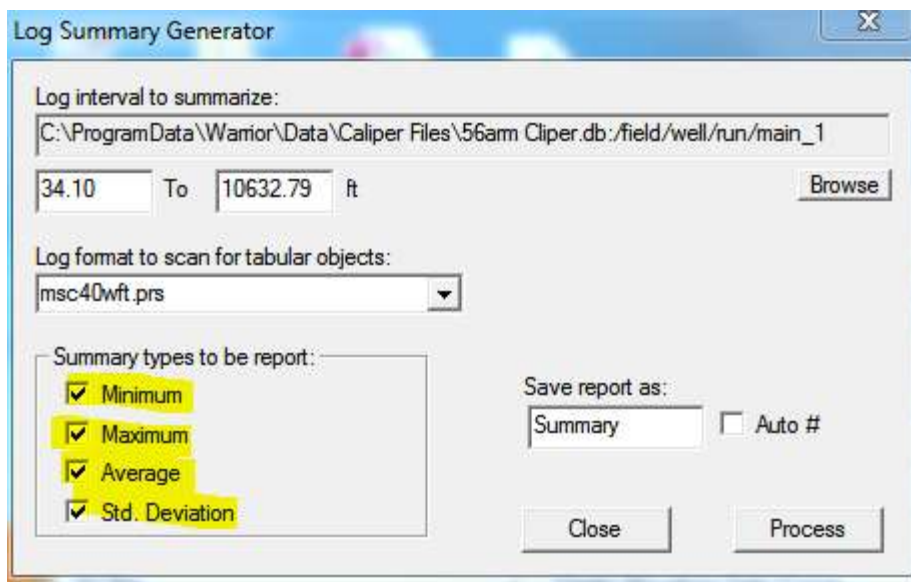


FIG: 12.2.45 Log Summary Generator

CS

/field/well/run/main_1/_report_/Summary

Table 100 - Curve Data Worksheet

←

—

□

×

File

Action

More

Next

Previous

Help

Warrior Report

Database FileC:\ProgramData\Warrior\Data\Caliper Files\56arm Cliper.db

Dataset Pathnamerun/main_1/_report_/Summary

Dataset CreationMon Sep 16 12:38:18 2013

Log Summary

34.10 - 10632.79

ft

		Minimum	Maximum	Average	Std. Deviation
IDMN	in	-2.14748e+006	7.895	-383.751	28912.8
IDMX	in	0	2.14748e+006	395.979	28912.6

12.3 Data Import

12.3.1 Read ASCII Data into the Warrior (LAS)

In the Warrior System group, choose the database Utilities icon. The window shown below appears.

The ASCII Importer reads data from existing ASCII file(s) and writes the data to one or more Warrior well log database files.

Start the ASCII importer from the program group or Interactive Plot. The dialog and control box is presented as shown below.



FIG: 12.3.1 Read ASCII Data into Warrior

The input files are selected by clicking the Add Files button. This produces a file selection box as shown below.

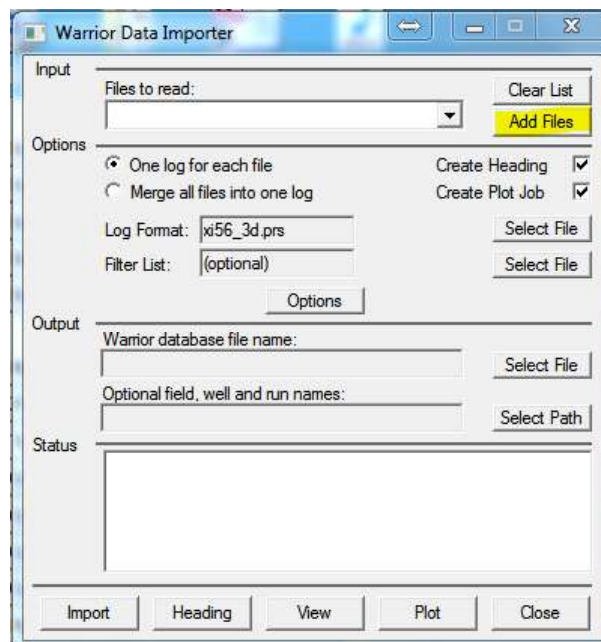


FIG: 12.3.2 Input File to Read

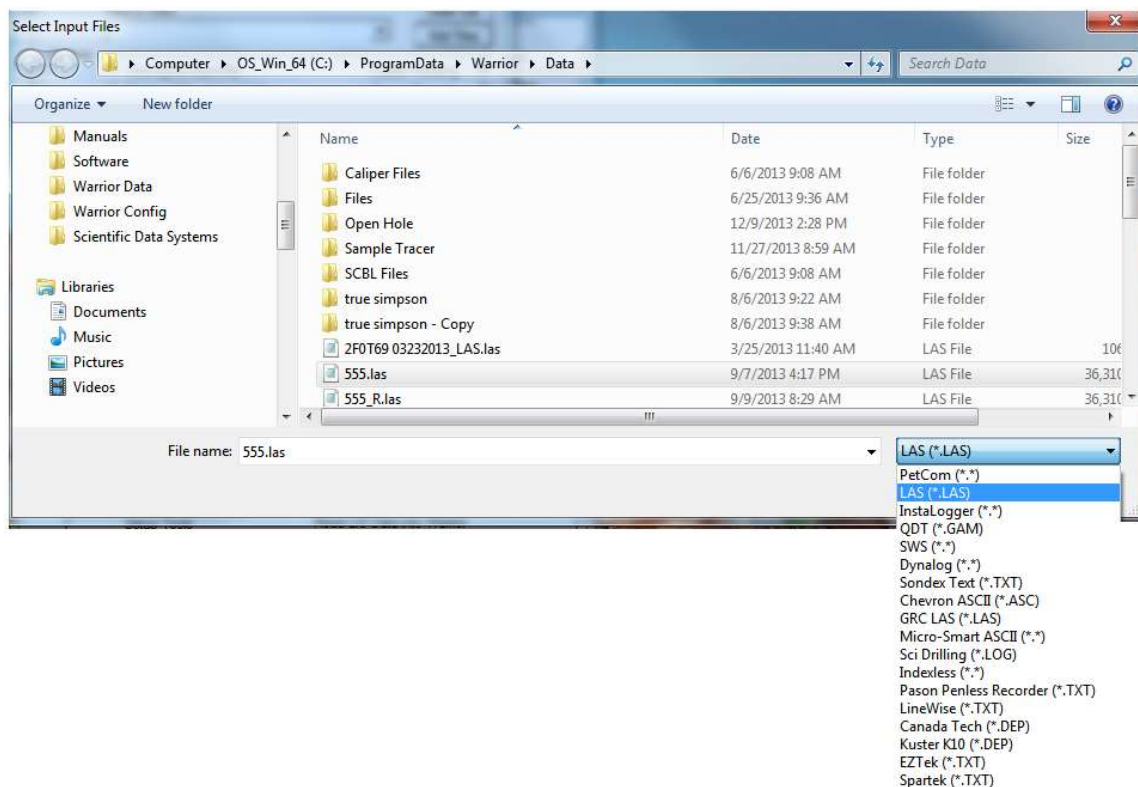


FIG: 12.3.3 Select the ASCII File Type

The importer will automatically import several common ASCII file types. Clicking on the Files of type selection displays the various ASCII formats handled. Select the type to be imported.

If the ASCII file format to be imported is not displayed here contact SDS.

Select the required ASCII files in the normal way and click Open.

The selected files may be viewed by clicking the ☐ button in the Files to read: field. The selected files may be cleared by clicking the Clear List button.

In Options Clicking the One log for each file radio button generates a warrior log pass for each ASCII file selected.

Clicking the Merge all files into one log button merges all the selected ASCII files into one log pass. If the ASCII files contain curves of the same name, the importer will automatically add a numerical subscript to the duplicate curves according to the order they appear in the Files to read: list.

The default presentation file for the new log pass is entered in the Log Format field by clicking the corresponding Select File button.

The filter list file has the default extension .wif. It may be selected by clicking the corresponding Select File button.

Checking the Create Heading selection causes the importer to create a log heading file based on any available information from the ASCII input file(s). If no information is available it will create a blank heading in the new database.

Checking the Create Plot Job selection causes the importer to create a default plot job based on the log heading (if any) and the imported log passes.

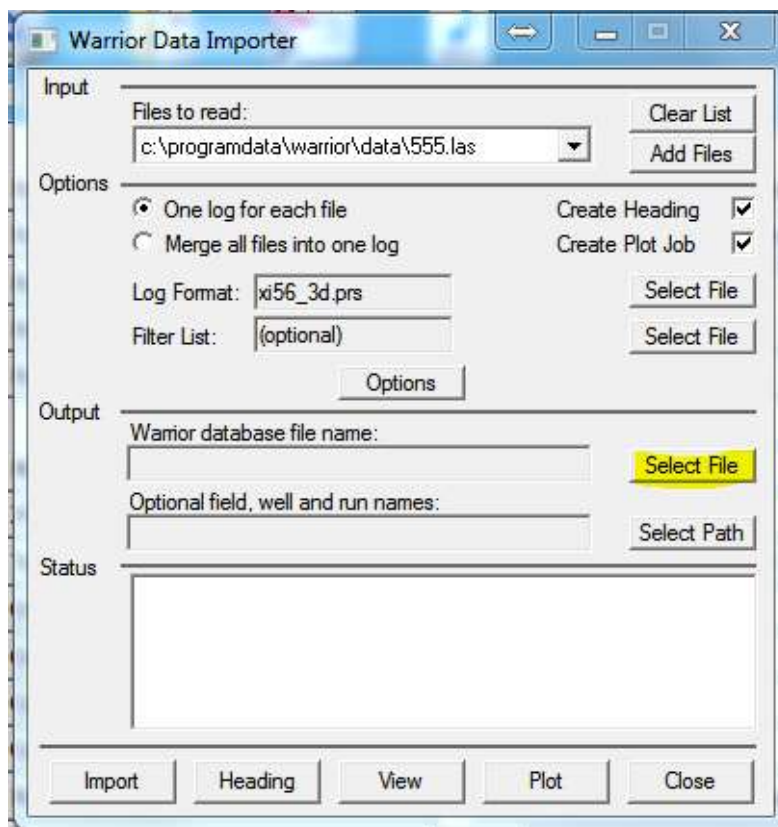


FIG: 12.3.4 Select File

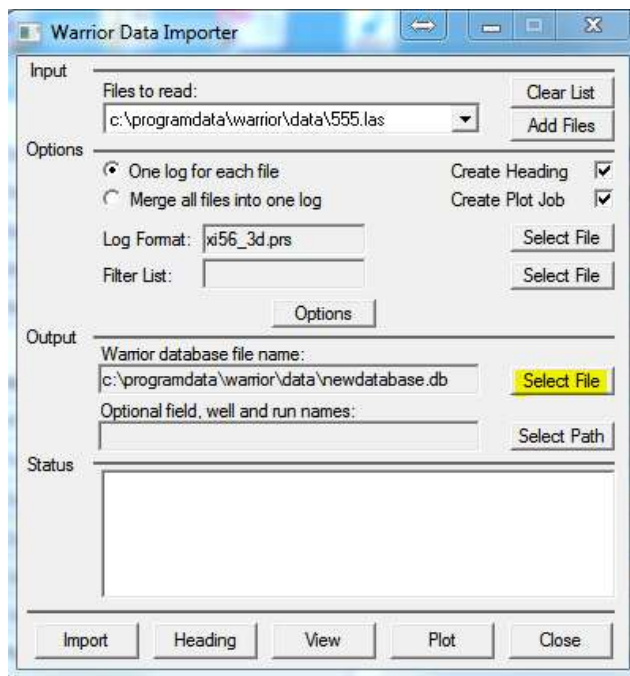


FIG: 12.3.5 Setup Warrior data Importer

If required the curves may be filtered during the import process. An ASCII text file must be created in the \warrior\bin directory and consist of a list of filter definitions similar to those used in the tools.ini file to define default filters

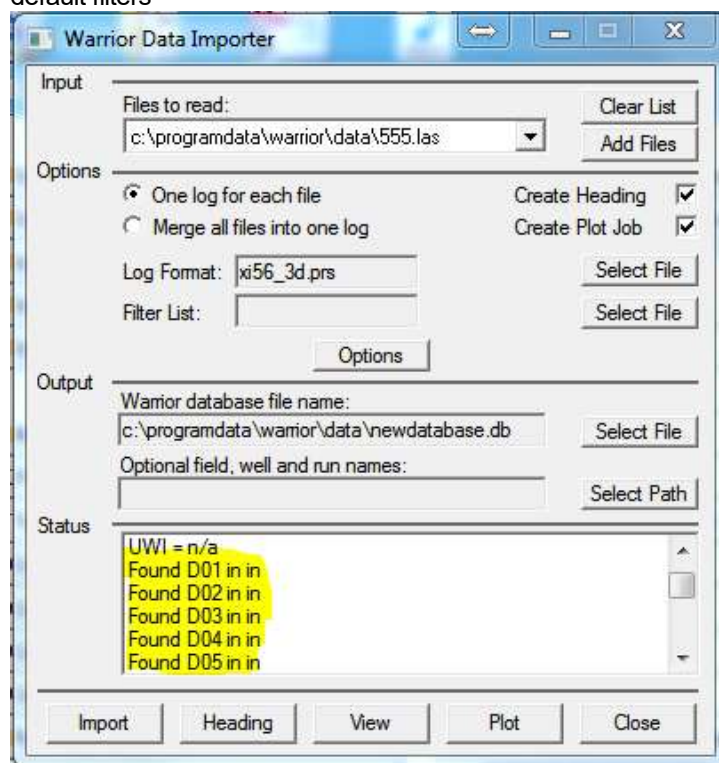


FIG: 12.3.6 Start to select the curves

If a curve is found with units that warrior does not recognize you will be prompted to select the appropriate units along with a radio button to select whether the unit referenced should be save for future imports.

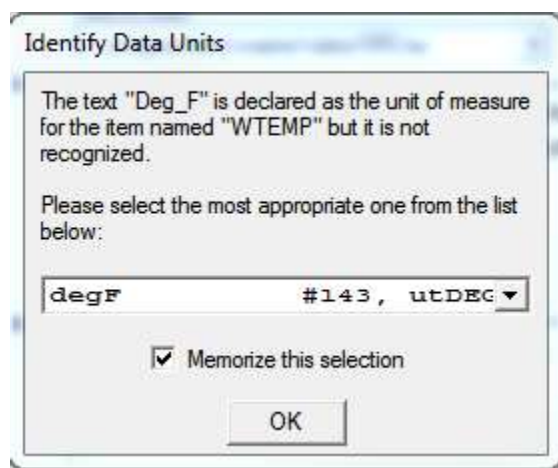


FIG: 12.3.7 Identify Data Units

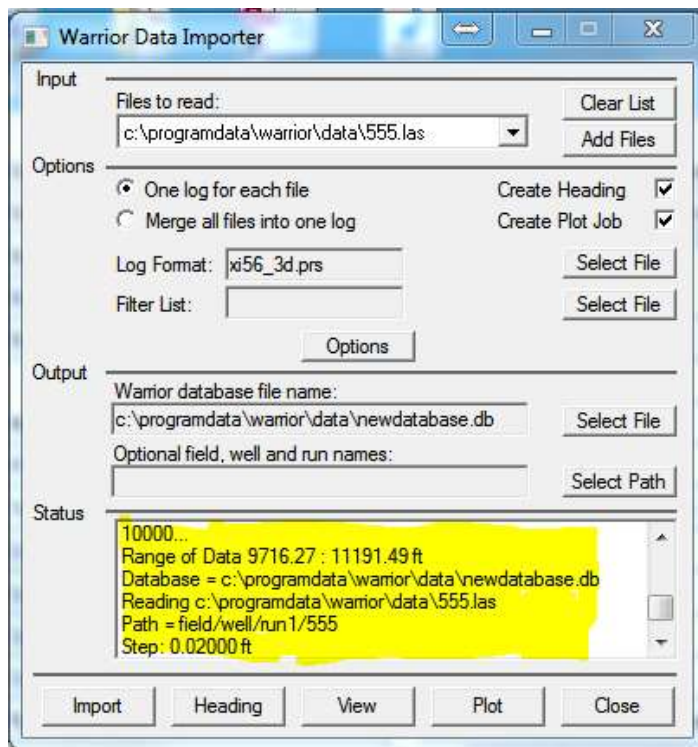


FIG: 12.3.8 Reading the ASCII and convert to DB

The status window displays a log of the importing operations.

Having made the various selections and chosen the required options the importer may be run by clicking the Import button. The importer will read the selected ASCII files and display the status.

Clicking the Heading button starts the Heading Editor program and displays the heading generated by the import process. If Create Heading was not selected a blank heading will be presented.

Clicking the View button starts the Interactive Plot program for screen display of the results of the import process.

Clicking the Plot button starts the Plot Job Editor program with the plot job generated during the import process (if any). If Create Plot Job was not checked a blank plot job is presented.

The Close button closes the Importer program.

12.3.2 Read LIS Data into the Warrior

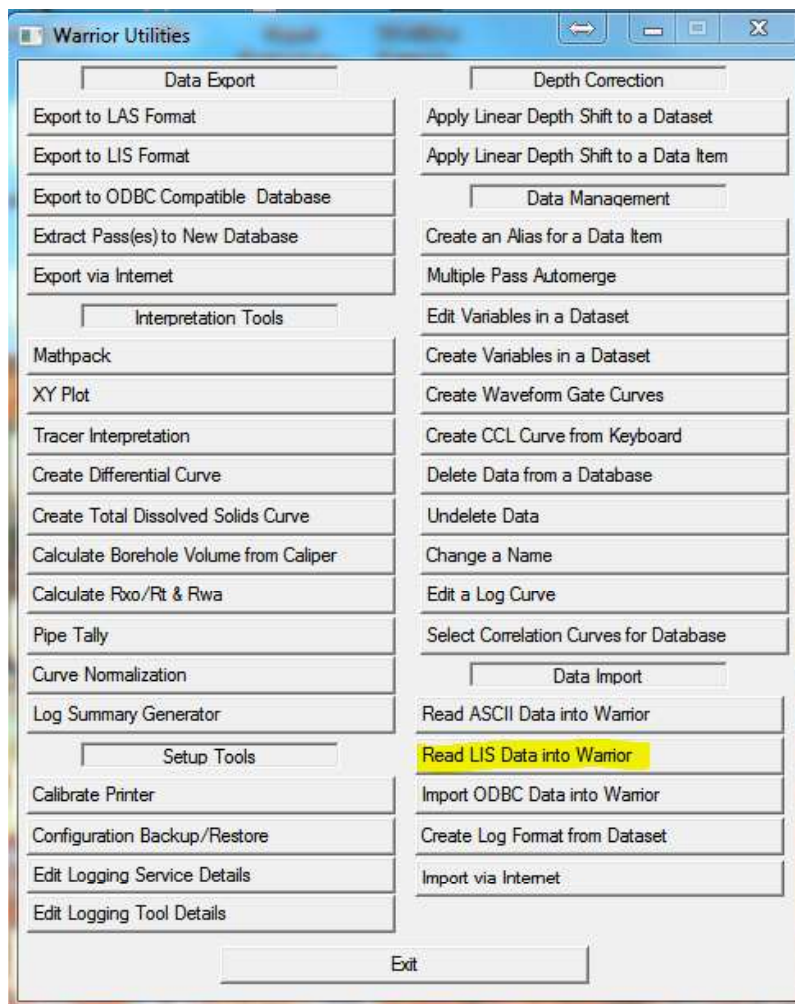


FIG: 12.3.9 Select Read LIS Data into Warrior

If you are using a tape it must be copied to a disk file before it can be read in to a Warrior database. Select 'From Tape' and then select the tape drive and the output file name. Once that is completed, select OK to copy the data to a file. Once the data is read to a file, then a scan or conversion can be done.

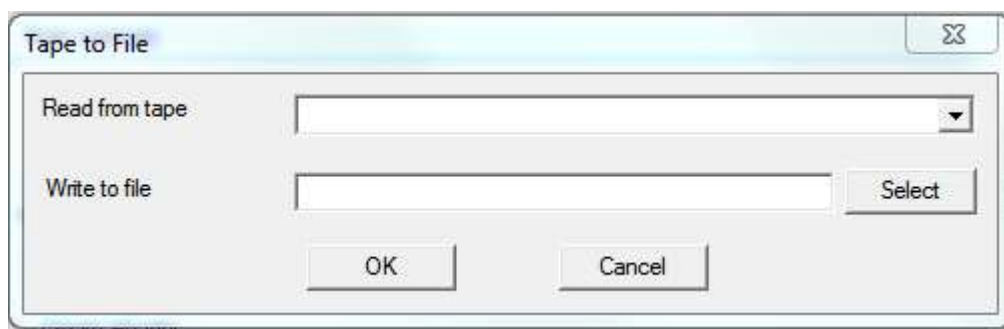
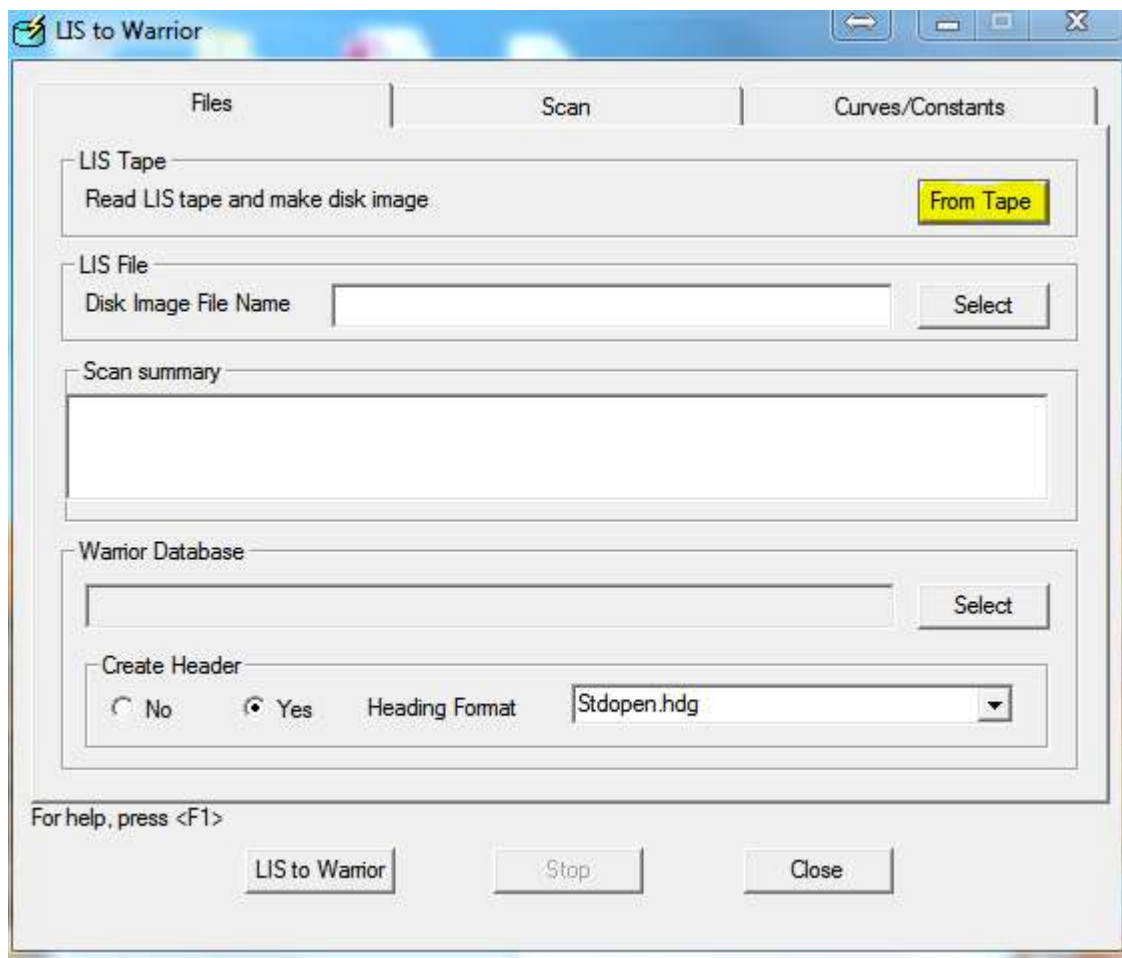


FIG: 12.3.10 Tape to file conversion

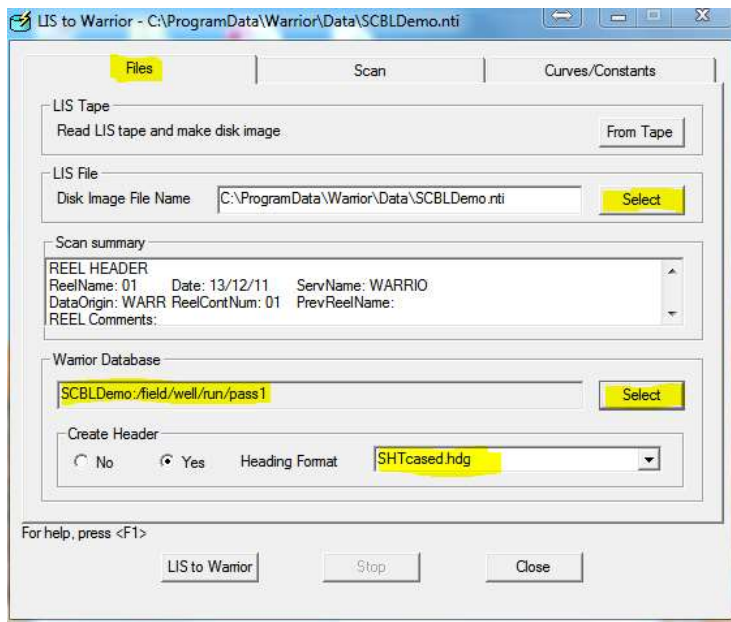


FIG: 12.3.11 Select LIS file

When opening the LIS the default extensions will be shown on the lower right hand side of the open file dialog.

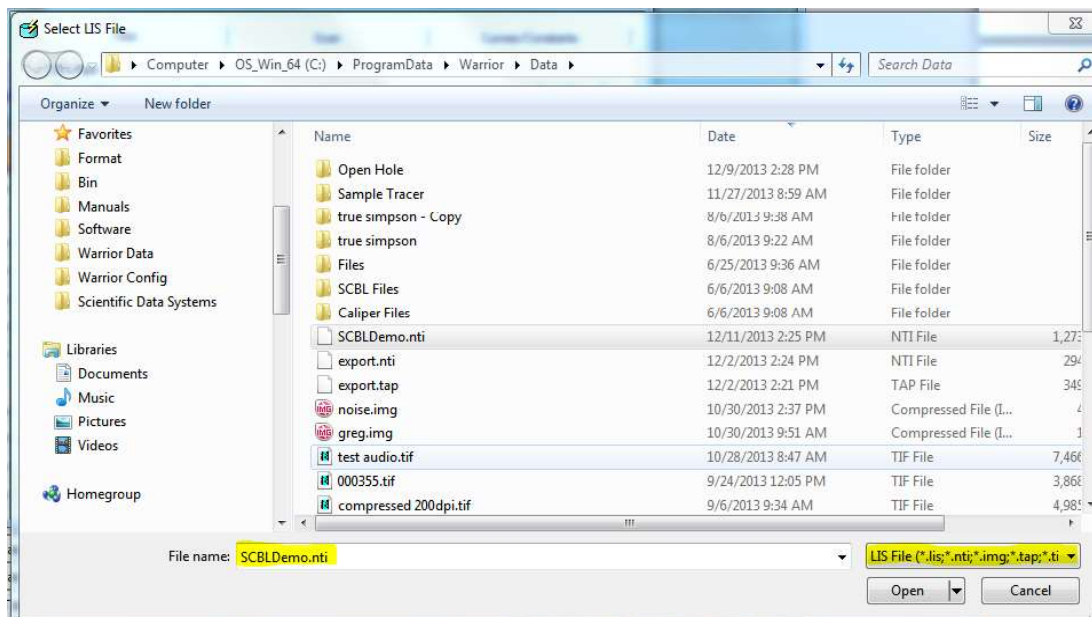


FIG: 12.3.12 SCBLDemo.nti File

Once you have selected an input file and an output database you can scan the LIS file. The scan dialog has an optional radio button to save the scan as a text file.

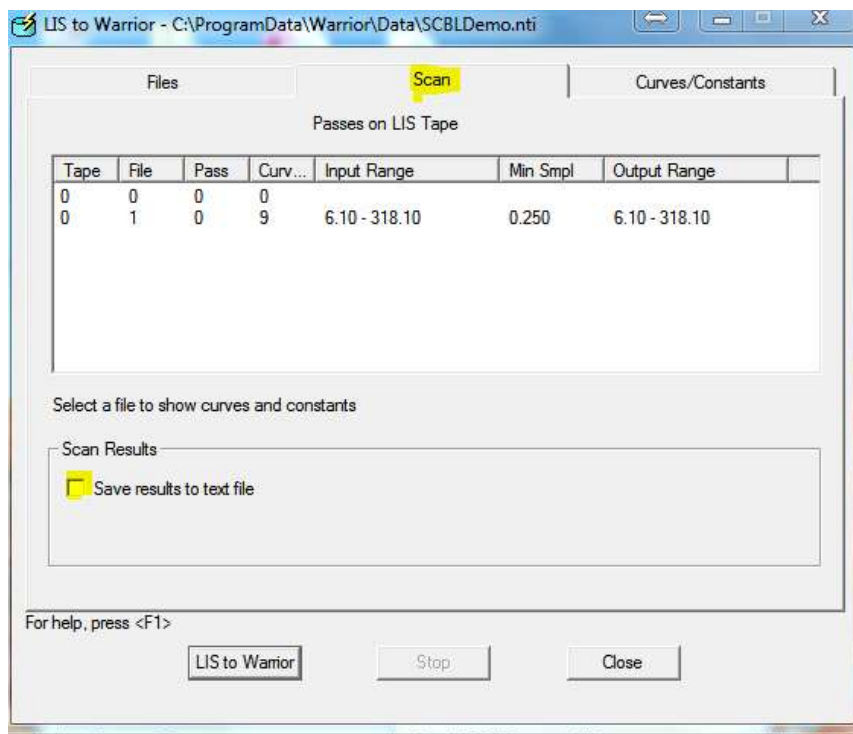


FIG: 12.3.13 Scan

Once you scan your file then select Curves/Constants. Here you can change the LIS Mnemonic to a Warrior Mnemonic. This way you can use your standard presentations, if you make a change here it will be stored by the system so that the next file will have the edited mnemonics. Double clicking on any of the curves will bring up the mnemonics editor. At this point you can also select whether or not to output the curve to the database.

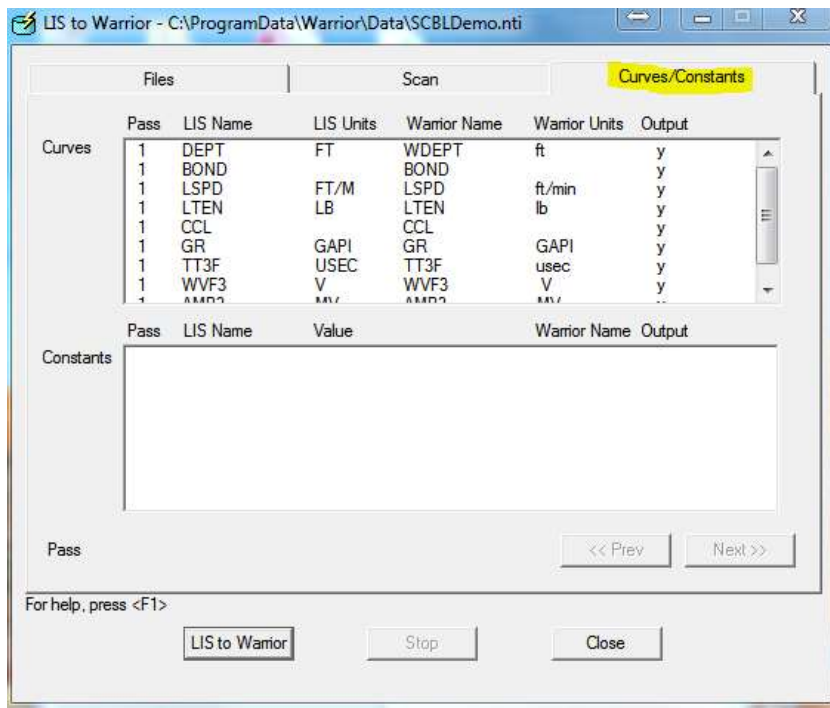


FIG: 12.3.14 Curves/Constants

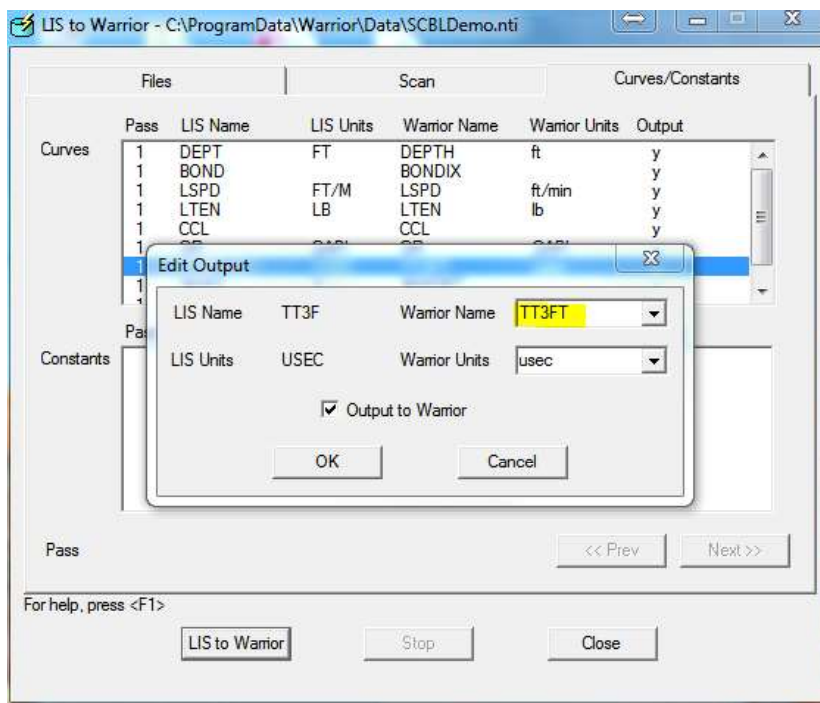


FIG: 12.3.15 Mnemonics Change

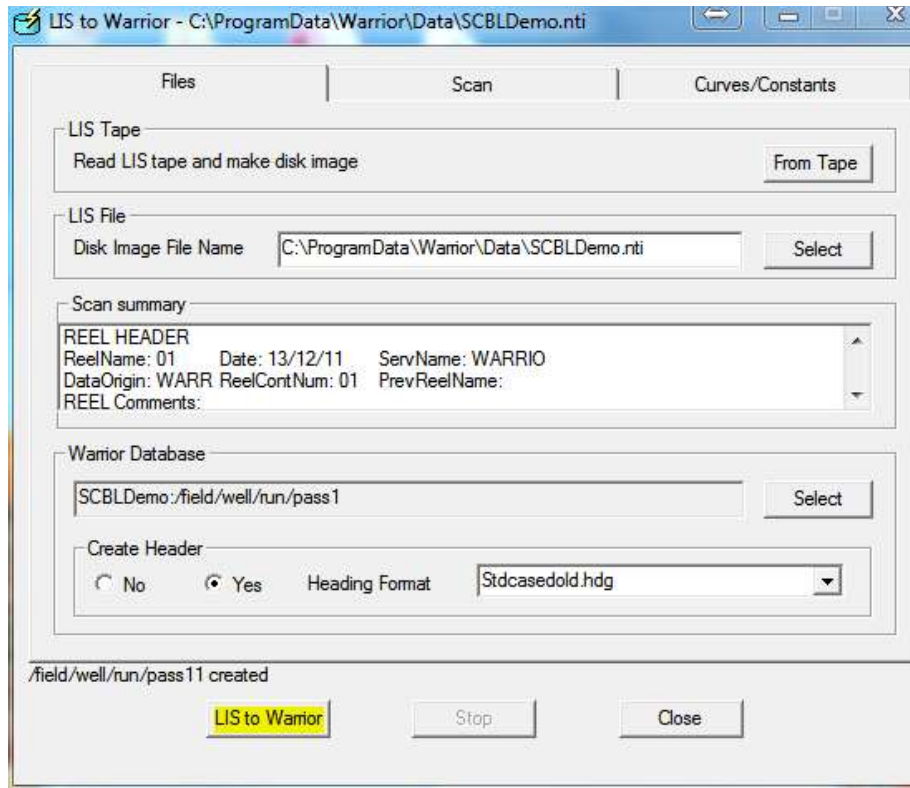


FIG: 12.3.16 Convert List to Warrior

The destination database file name does not have to exist, but the specific run given for the destination cannot exist. For any LIS passes greater than the first pass, the LIS pass number will be appended to the output Warrior database pass name to create a unique Warrior name for each pass.

If a header is requested, then the heading information will be filled out based on the type of heading chosen. The heading that is chosen will affect the list of available heading names shown when editing constants from the Curves/Constants dialog. The heading that is created will go to `/[field]/[well]/[run]/_plots/_headings_/1`. Only one heading is allowed per `/[field]/[well]/[run]/`. Therefore, if a database is created from a LIS file with multiple passes, only the heading information from the first pass will be used to create the heading

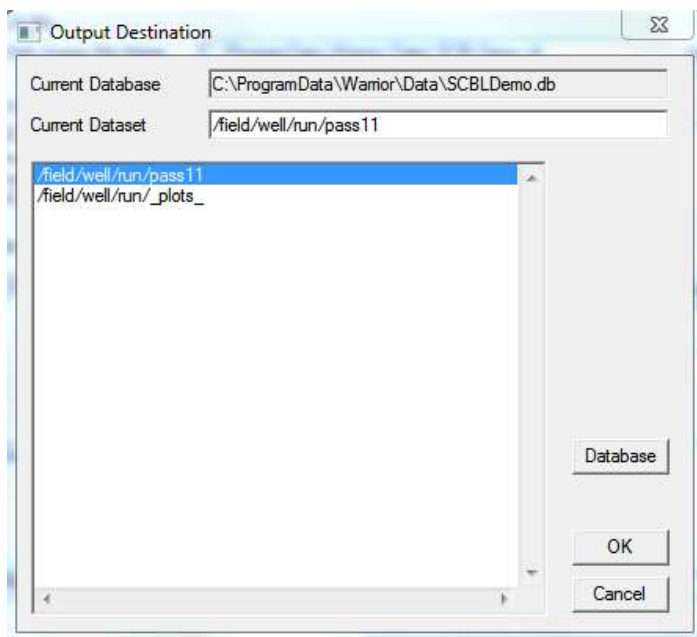


FIG: 12.3.17 Output



FIG: 12.3.18 Header not Output Curves

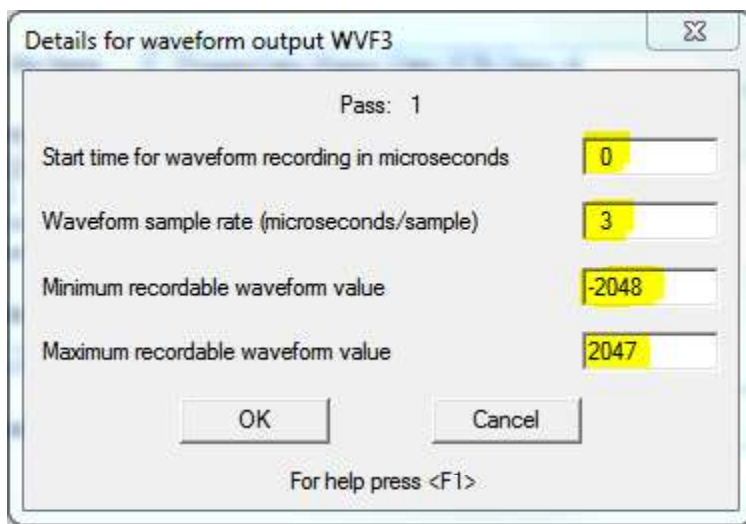


FIG: 12.3.19 Setup Output Details

More Information Required for Waveform Data

The top line of the dialog contains the pass number and name from the LIS tape.

The start time for the waveform is the number of microseconds that elapsed prior to the beginning of recording the waveform.

The waveform sample rate is the total sample interval (in microseconds) divided by the total number of samples taken.

The minimum and maximum recordable waveform values are required for scaling the waveform plot properly. For example, a 13 bit-sampling device may have a range of values from -2048 to +2047.

12.3.3 Import ODBC Data into Warrior

This program will import data for Excel, Access, and other ODBC compatible databases. The limit for exporting data is 255 data points per sample. A normal curve is one data point but a waveform will be many more points for each sample. You will see a message in the progress window that the column count has exceeded if you exceed that amount. The Import ODBC to warrior opens the same executable as the export to ODBC but in the Import tab.



FIG: 12.3.20 Import ODBC Data Into Warrior

The Import ODBC to warrior opens the same executable as the export to ODBC but in the Import tab.

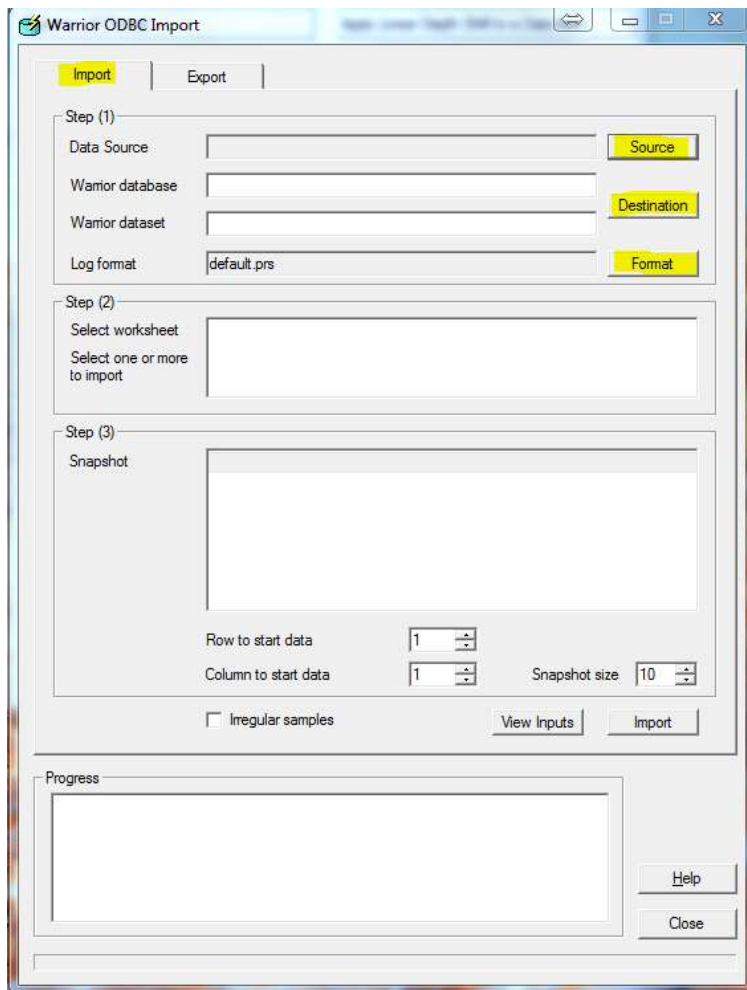


FIG: 12.3.21 Import ODBC Data Dialog

From here you can select the source Destination and presentation. When you select source the select data source window will open from here you can select either dBase, Excel or MS Access. There is a new button that can be used to import another ODBC Type, unless you need one that is not listed you should not need this option. There is also a tab for File Data Source, unless you are using a server to retrieve you file you should not need this option.

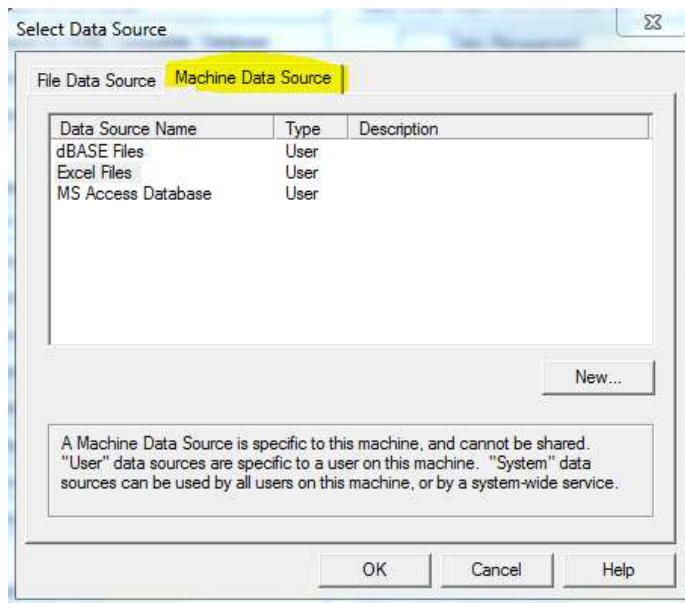


FIG: 12.3.22 Machine Data Source

Once you select Ok the Select Workbook or other dialog will appear. Select your file that you wish to import and click OK.

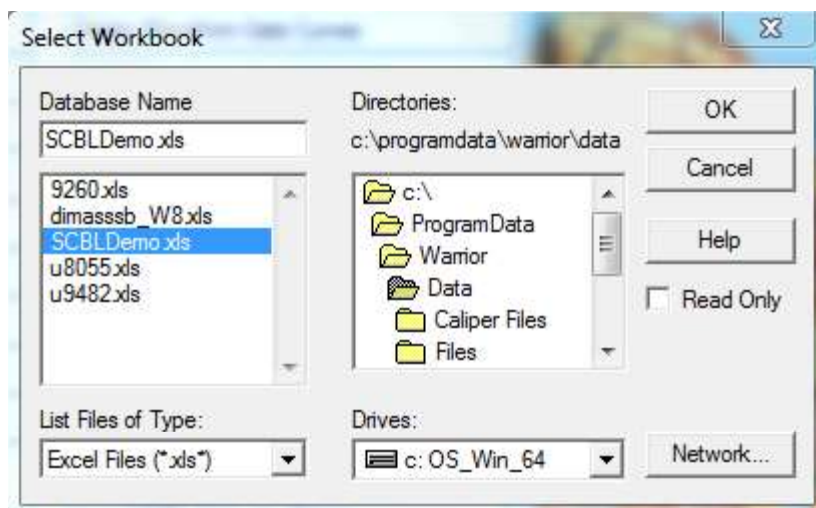


FIG: 12.3.23 Machine Data Source

Warrior ODBC Import

Import | Export

Step (1)

Data Source: C:\ProgramData\Warrior\Data\SCBLDemo.xls Source

Warrior database: C:\ProgramData\Warrior\Data\SCBLExcell.db Destination

Warrior dataset: /field/well/run1/pass1 Format

Log format: default.prs

Step (2)

Select worksheet: pass11
pass11\$

Select one or more to import

Step (3)

Snapshot

DEPTH#ft	WDEPT	BOND	LSPD	LTEN
10.0	-999.25	-999.25	-999.25	-999.25
10.083	-999.25	-999.25	-999.25	-999.25
10.166	-999.25	-999.25	-999.25	-999.25
10.249	-999.25	-999.25	-999.25	-999.25
10.332	-999.25	-999.25	-999.25	-999.25
10.415	-999.25	-999.25	-999.25	-999.25

*** First row must contain column headings or import will not work ***

Column to start data: 1 Snapshot size: 10

☐ Irregular samples View Inputs Import

Progress

WVF3FT233: Column 244 = SQL_DOUBLE, size 1
WVF3FT234: Column 245 = SQL_DOUBLE, size 1
WVF3FT235: Column 246 = SQL_DOUBLE, size 1
WVF3FT236: Column 247 = SQL_DOUBLE, size 1
WVF3FT237: Column 248 = SQL_DOUBLE, size 1
Message limit exceeded...

Help Close

FIG: 12.3.24 Importing File Data

12.3.4 Create Log format from Dataset

This utility will allow you to create a presentation file from a log pass.



FIG: 12.3.25 Create Format from Dataset

Select the pass that has the desired embedded format you wish to save.

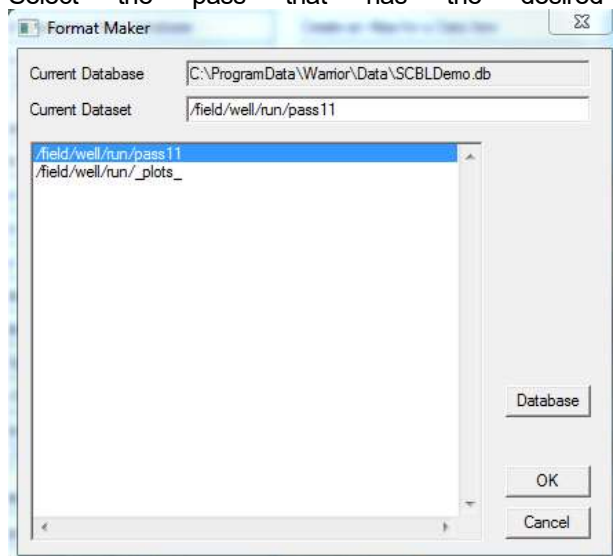


FIG: 12.3.26 Create Format from Dataset

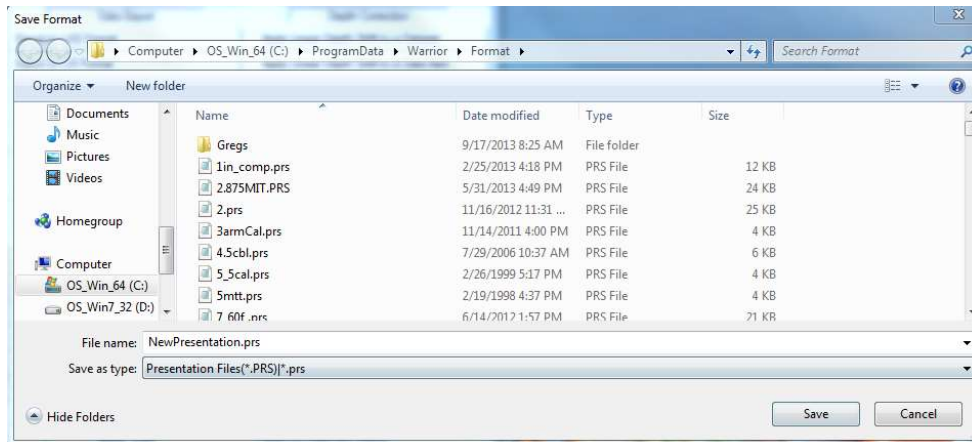


FIG: 12.3.27 Select new presentation name

12.3.5 Import VIA Internet



FIG: 12.3.28 Import via Internet

You can receive a saved data base or a real time database with the Import via Internet function. You will need the IP address of the sending computer and the port if different than the default the port number.

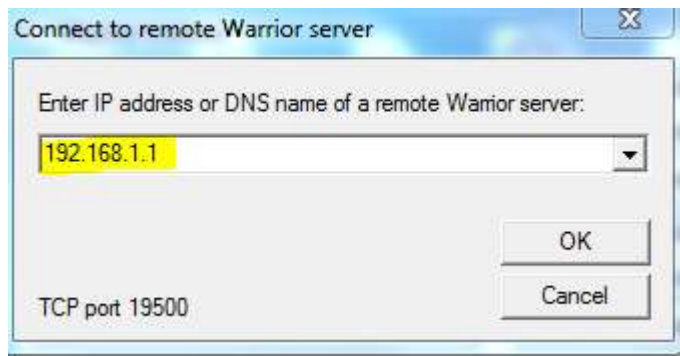


FIG: 12.3.29 IP address and Port setting.

12.4 Depth Correction

[See Interactive Plot Section 7](#)

12.5 Data Management

12.5.1 Create an Alias for a Data Item

Clicking on this button brings up a dialog box, which allows a data item, typically a curve from a log pass, to appear as though it were present in another (different) log pass. This allows curves and other data items to be effectively merged to other datasets, without using the Merge program or creating new merged log passes. Essentially a form of link is defined in the database(s) that allows application programs (such as Interactive Plot) to access data items from datasets other than the dataset currently selected.

In the Warrior System group, choose the Utilities icon.



FIG: 12.5.1 Select Create an Alias for a Data Item

Click on the Create an Alias for a Data Item button. A dialog box will appear as shown below:



FIG: 12.5.2 Browse DataBase

Click the Browse button and select the database file, then the dataset (log pass) and finally the data item to aliased. In the case shown below the curve GR has been selected from pass12 of the cbldemo.db database.

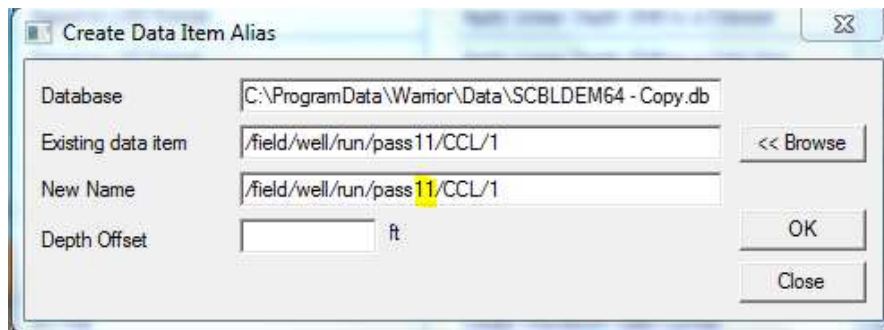


FIG: 12.5.3 Create data Item Alias

This is the database item to be aliased to another pass.

In the New Name for item field replace any or the entire data item path. For example if we want this CCL curve to appear in pass1, we type over pass11 with pass1, as shown below:

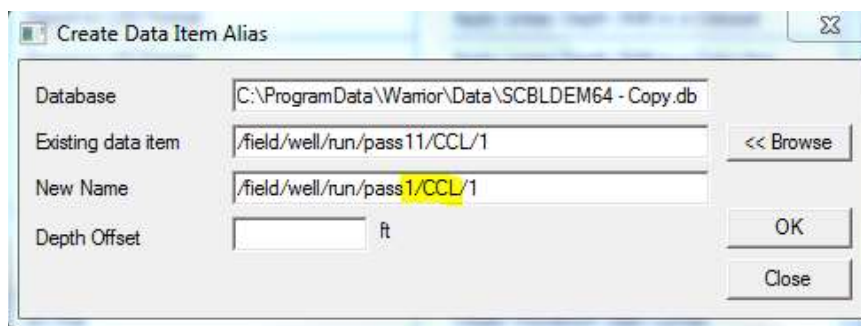


FIG: 12.5.4 Create Pass1

The OK button is clicked and the CCL curve from pass11 will now appear in pass1. If a curve with the same name already exists in pass1 then the program will give a message indicating that this is the case and the alias will not be performed. The easiest thing to do in this case is to rename the CCL curve to something else (which does not already exist in that pass) e.g. CCL2.

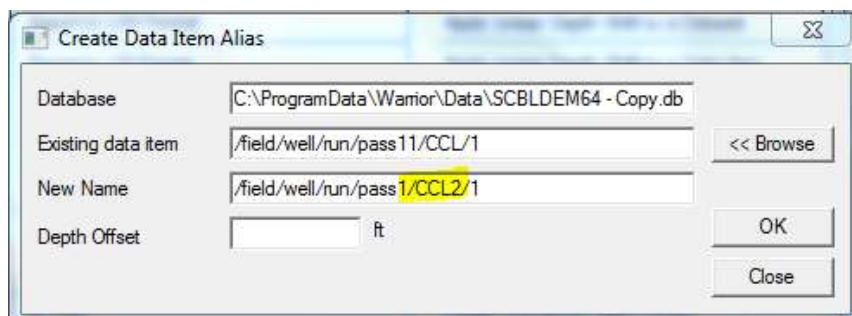


FIG: 12.5.5 Create CCL2 Curve

Clicking the OK button will now alias the pass12 CCL curve to pass1 as CCL2. Note that if you now wish to plot this curve it will be necessary to include a curve called CCL2 in the presentation file with which the pass will be plotted.

Note that a linear depth offset may be applied to the data item as it aliased, so if the curve is not depth aligned with the other data in the destination path, it may be corrected at this point.

Note also that no new log passes are created in this process and the size of the database(s) remains the same. This is very important when wishing to present waveform data from several passes simultaneously, as large amounts of data would otherwise be created.

12.5.2 Multiple pass Auto merge



FIG: 12.5.6 Multiple Pass AutoMerge

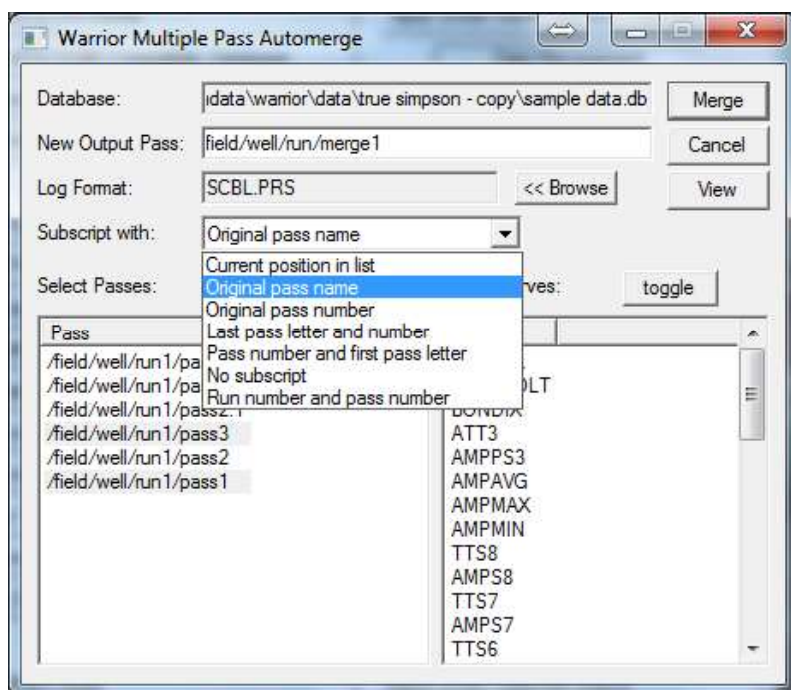


FIG: 12.5.7 Multiple Pass Automerge

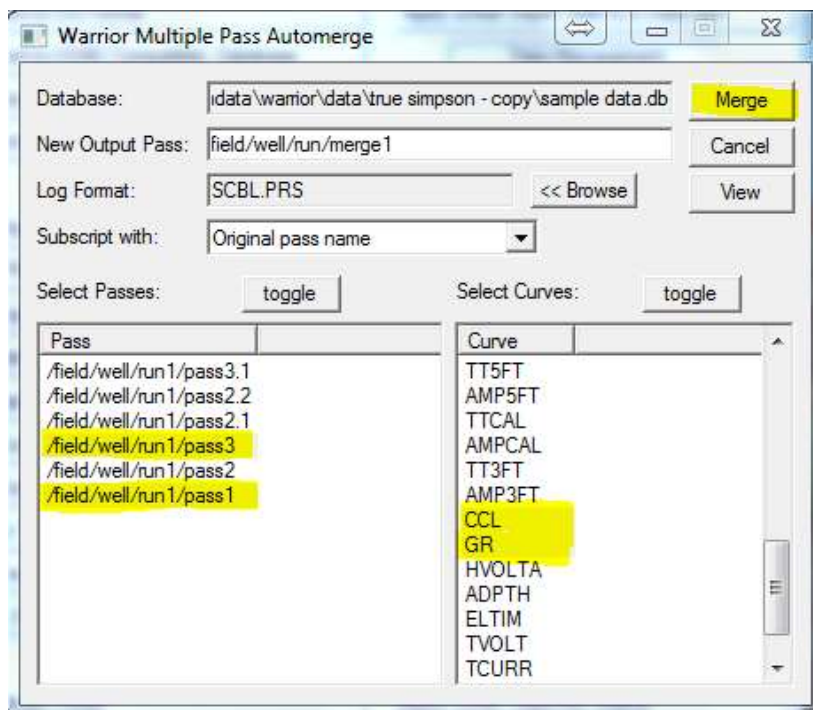


FIG: 12.5.8 Set Passes and Curves

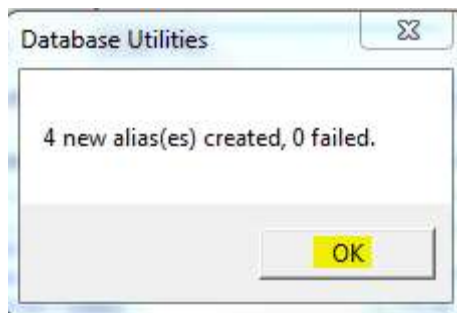


FIG: 12.5.9 Four new aliases curves

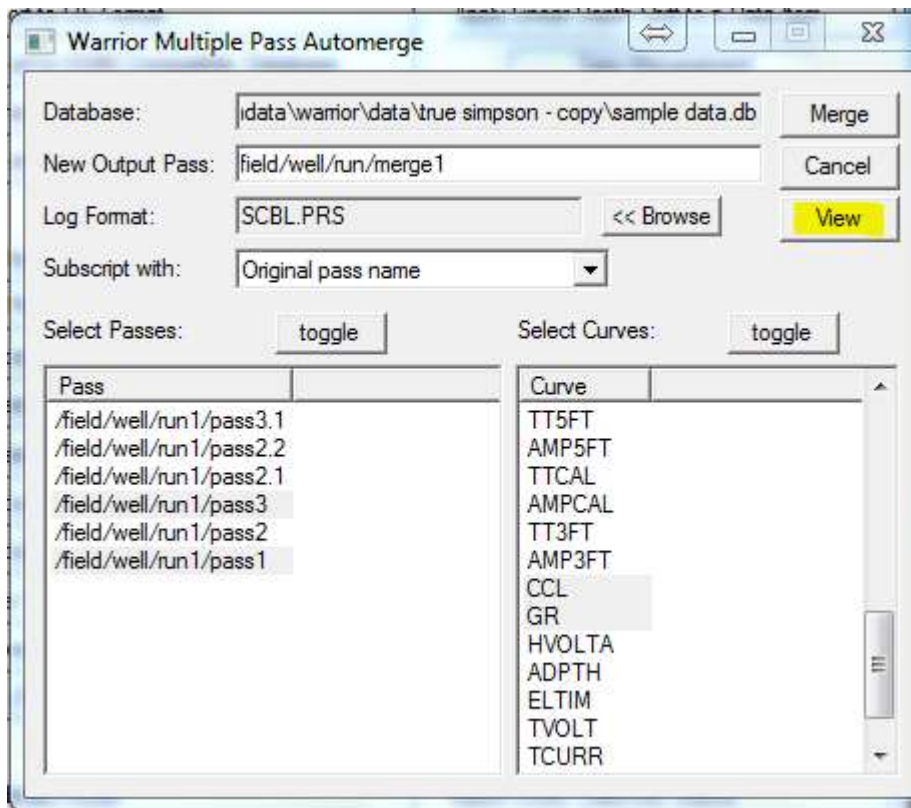


FIG: 12.5.10 View option

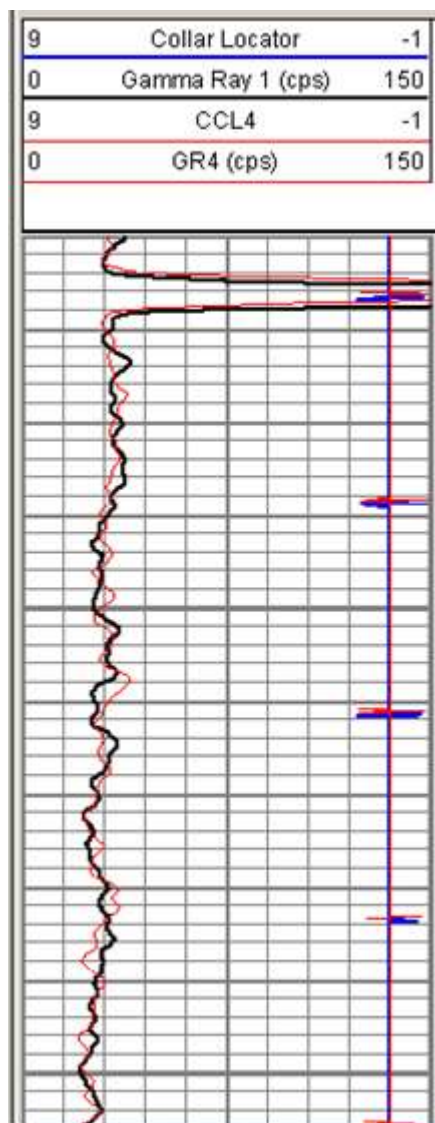


FIG: 12.5.11 Plot the new add curves

12.5.3 Edit Variables in a Dataset



FIG: 12.5.12 Edit Variables in a Dataset

[See Section 4.5.2](#)

12.5.4 Create Variables in a Dataset

In the Warrior shortcut folder, double-click the **Database Utilities** icon. The Warrior Utilities menu box will appear. Click on the **Create Variables in a Dataset** button.



FIG: 12.5.13 Create Variables in a Data set.

A file selection dialog box appears. Select the required database, followed by the log pass (dataset). At this point a selection box is displayed allowing selection of the variable to be created in the log pass. Fig: Create Variables in a Dataset Double-click on the required variable name to create it in the pass variables.

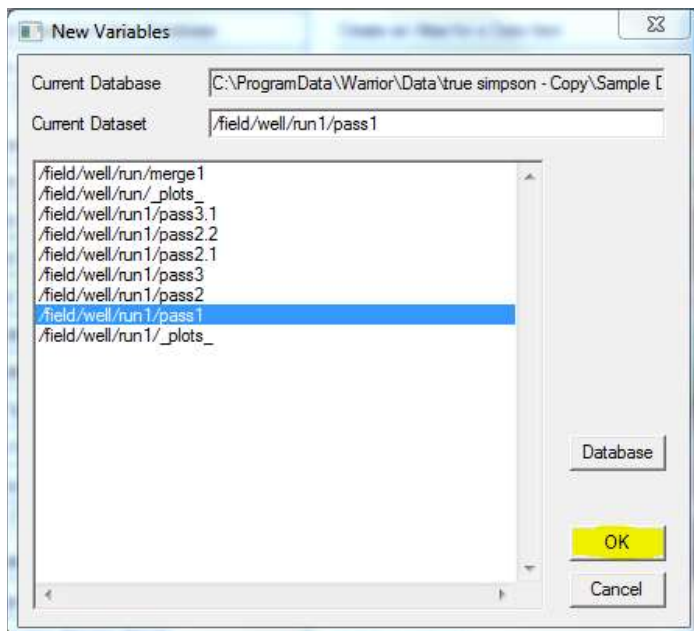


FIG: 12.5.14 New Variables

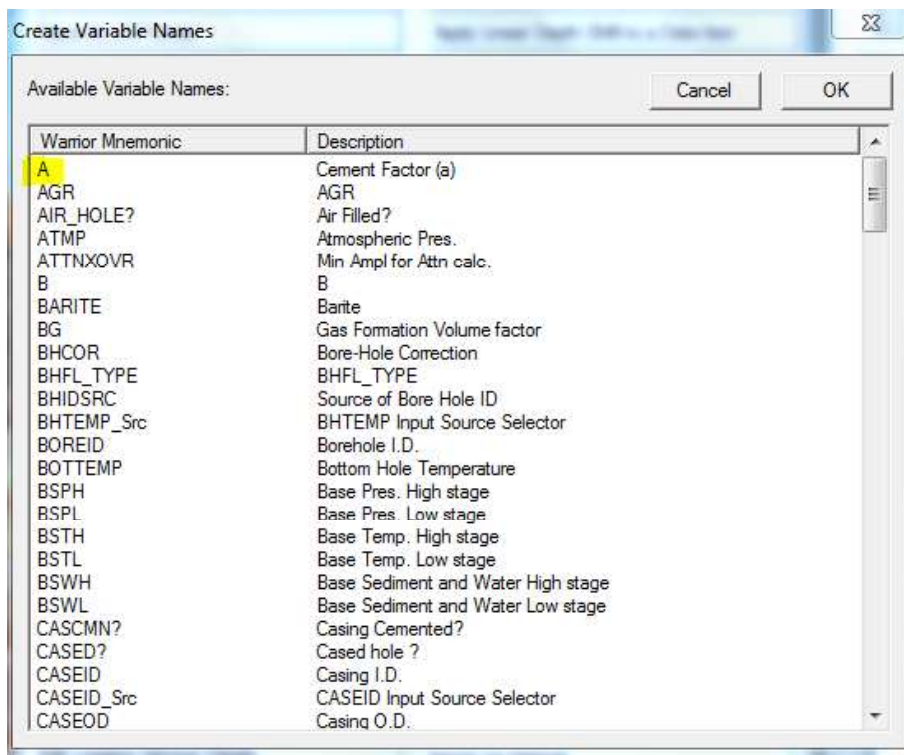


FIG: 12.5.15 Choice the Variable

Once you have chosen a variable to add you should go back to edit variable in a dataset and enter the appropriate value.

12.5.5 Create Waveform Gate Curves

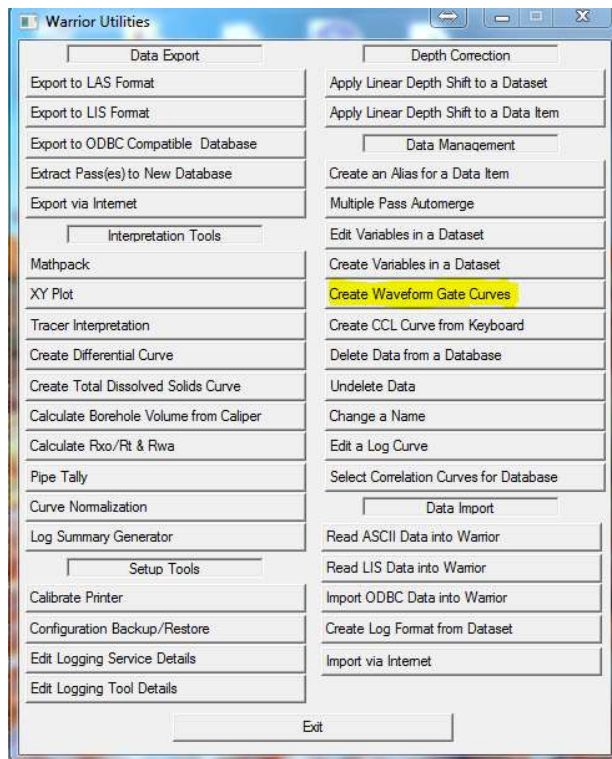


FIG: 12.5.16 Create waveform Gate Curves

Select the Database

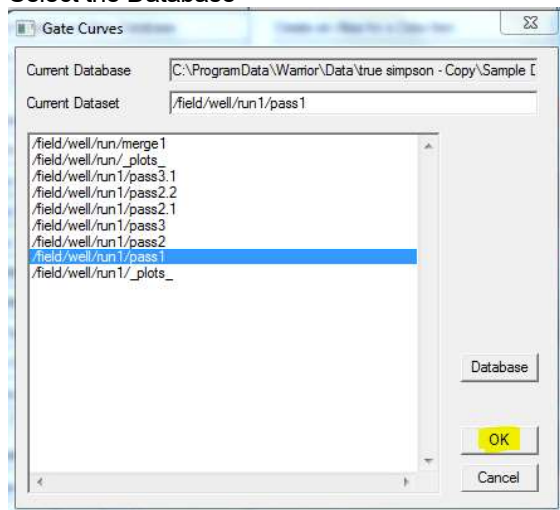


FIG: 12.5.17 Gate Curves

This option is used to generate the high and low gate curves for sonic tools (e.g. CBL and RBT). You are prompted to select a database and pass containing a sonic tool with waveform data. The high and low gate curves are then automatically generated and added to the pass. When a CBL tool is in the database Warrior looks for the WVF3FT and WVF5FT waveform curves in the pass and generates WVF3FTLG (3ft low gate) and WVF3FTHG (3ft high gate) if the WVF3FT curve is present, and the WVF5FTLG and WVF5FTHG if the WVF5FT curve is in the database.

These curves can be added to the Signature track as shown below in Fig:4.86 , and the low and high gate curves should straddle the first peak in the waveform.

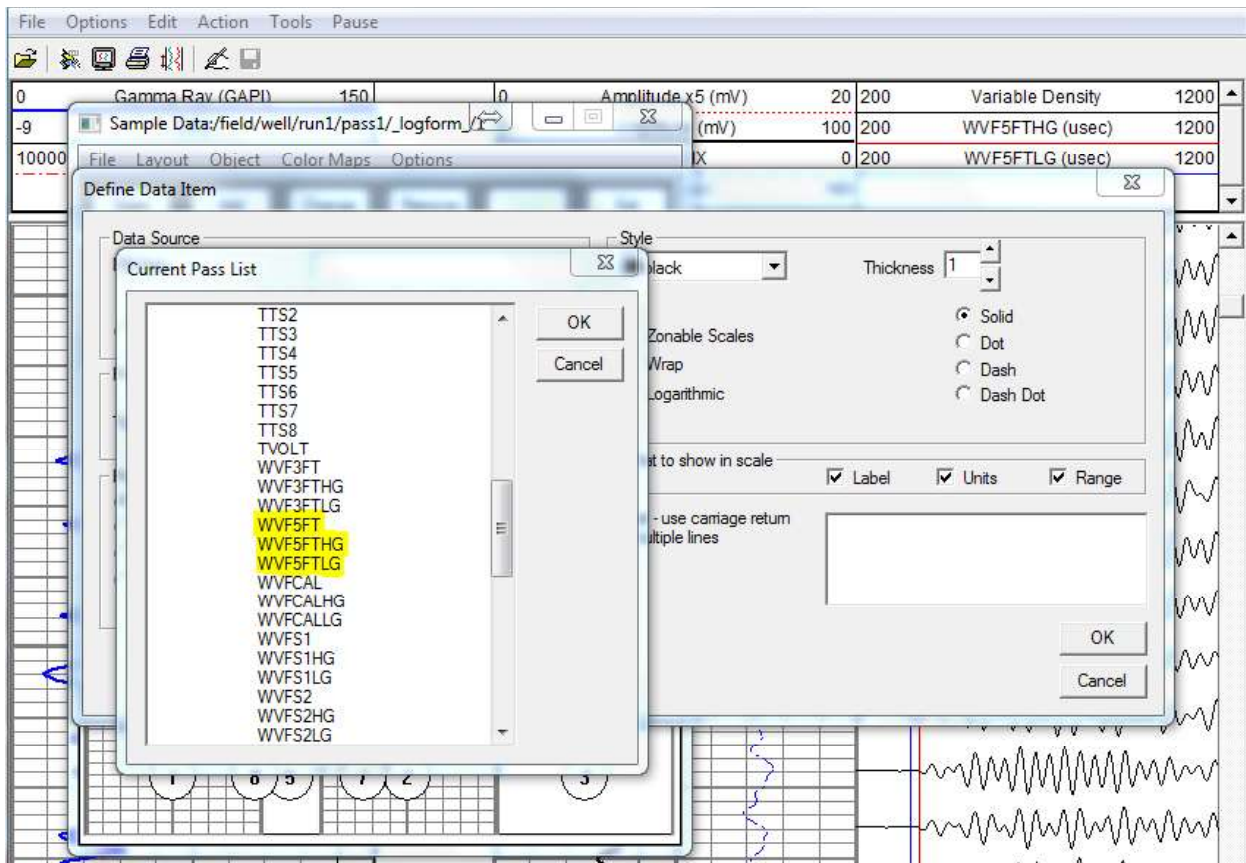


FIG: 12.5.18 Current pass List

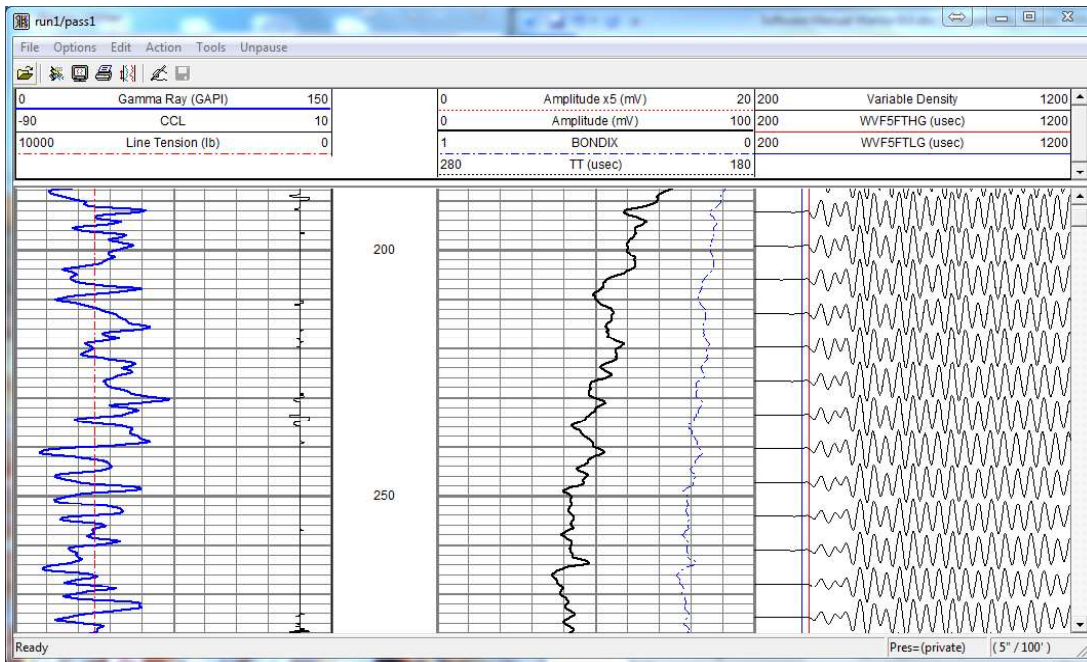


FIG: 12.5.19 Plot Curves

12.5.6 Create CCL Curve from Keyboard



FIG: 12.5.20 Create CCL Curve from Keyboard

To add collars to a log select Create CCL Curve from Keyboard. This will open a dialog that will allow free form text box for the depth entries of the collars. Once entered and excepted a dialog will show the depth range of the collars to be created. You will then be prompted for a Database and pass to modify. A completion dialog will confirm the changes, the generated collars will be one division negative.

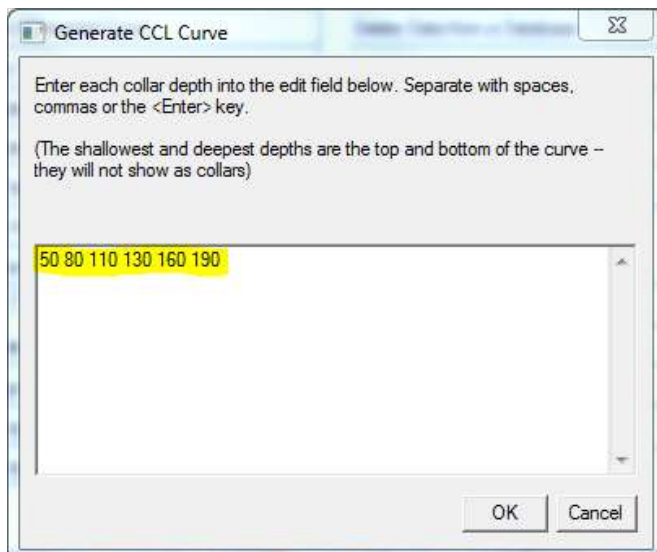


FIG: 12.5.21 Enter Depths of Desired CCL

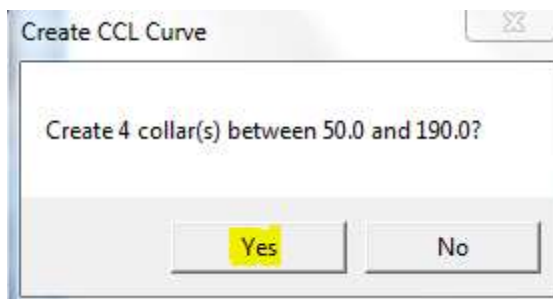


FIG: 12.5.22 Dialog of CCL to be created

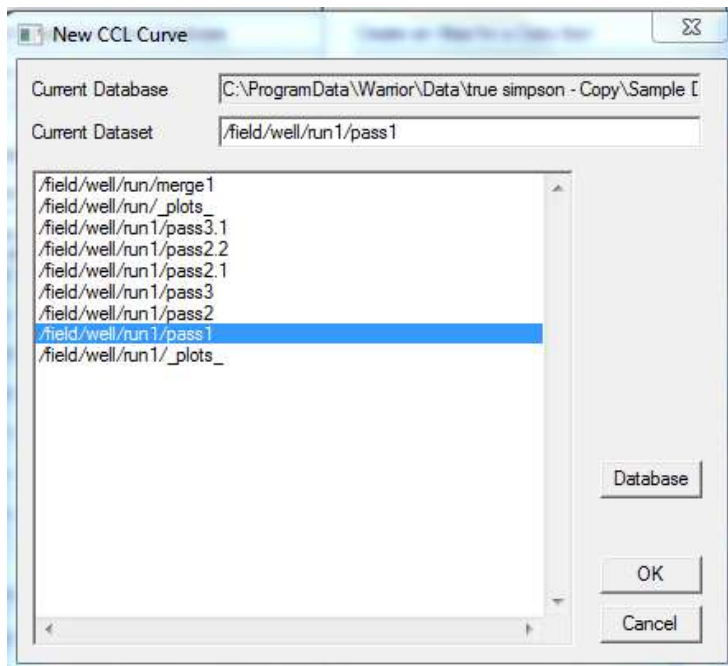


FIG: 12.5.23 Select Database and Pass to add CCL

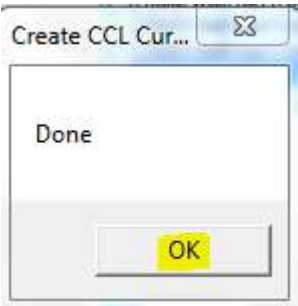


FIG: 12.5.24 Ok Dialog

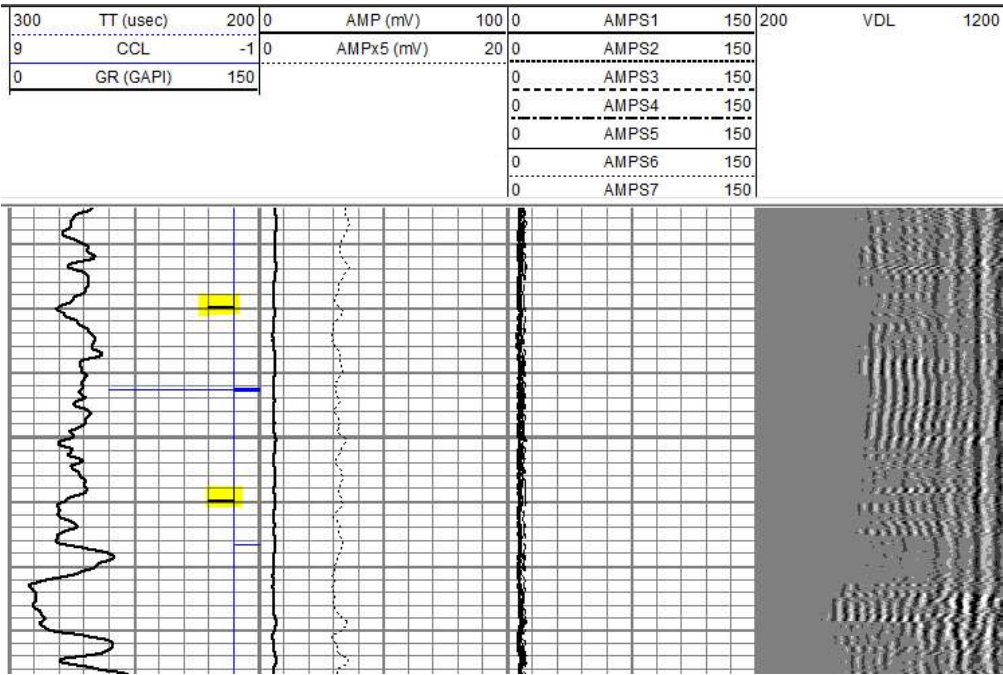


FIG: 12.5.25 Inserted CCL's

12.5.7 Delete Data from a Database



FIG: 12.5.26 Select Delete data from a Database

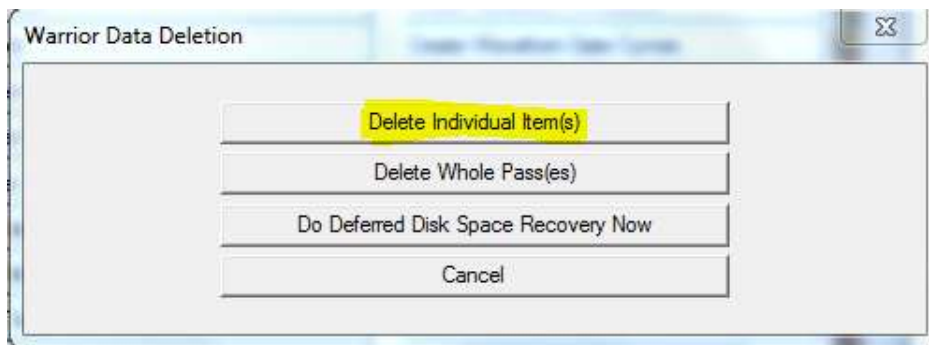


FIG: 12.5.27 Delete Individual Item(s)

To delete a database item e.g. a curve, click on Delete Individual Item(s). The standard database file selection dialog appears.

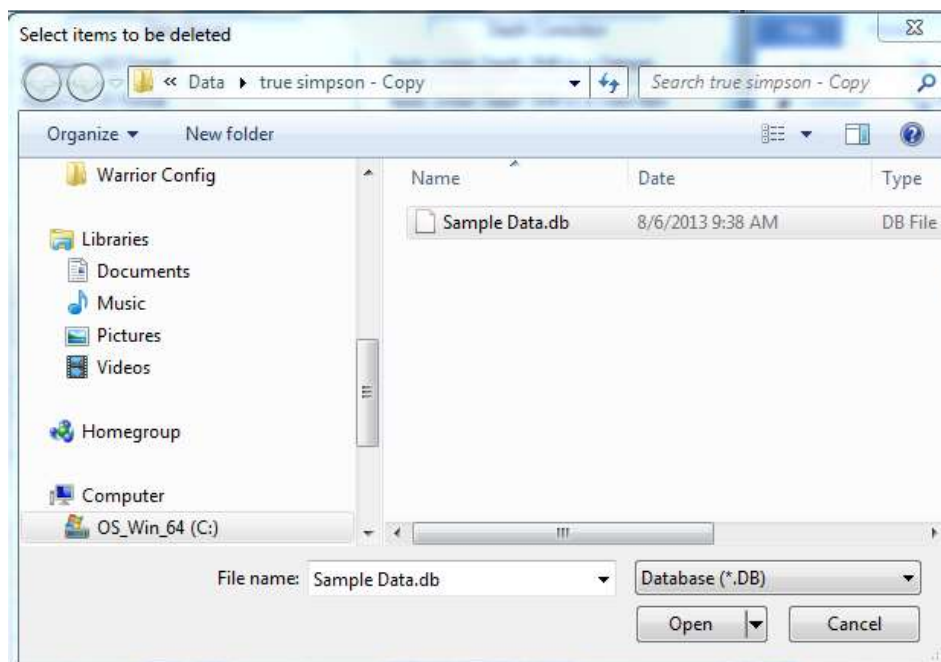


FIG: 12.5.28 Select Database

After selecting the database, the dialog for selection of the data item appears. Select the data item(s) to be deleted. All or no items may be selected by using the Toggle button.

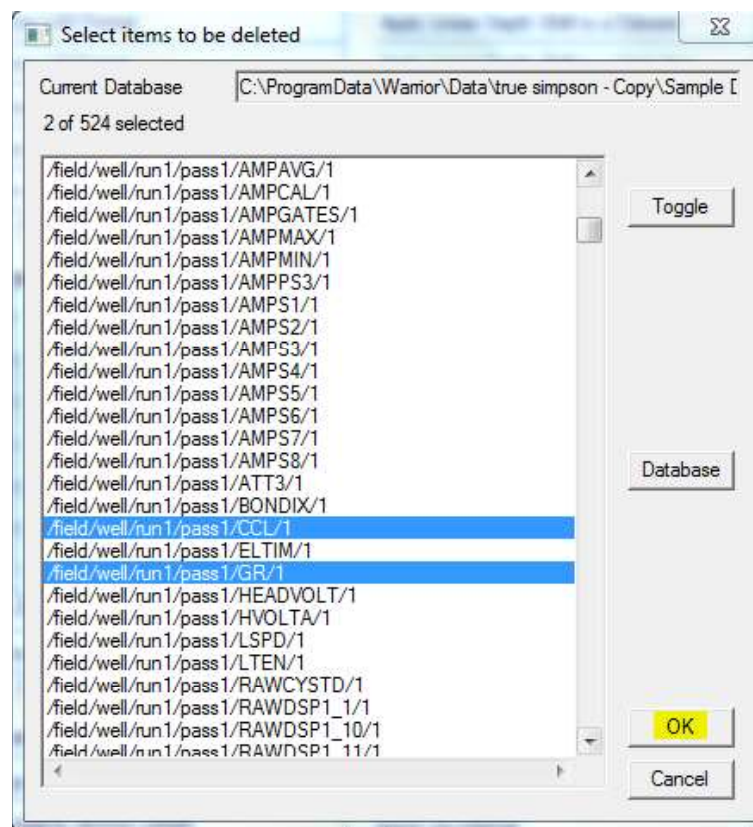


FIG: 12.5.29 Select Items

A warning message appears informing that permanent data deletion is about to take place.

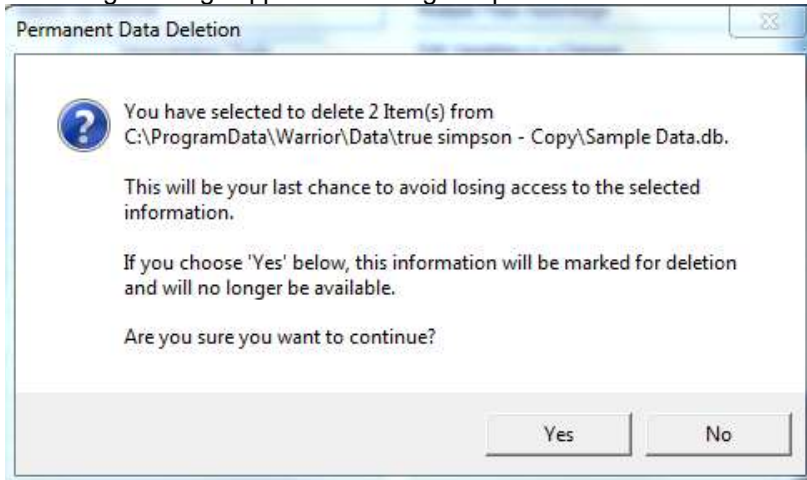


FIG: 12.5.30 Permanent Data Deletion



Warning! DATA DELETED WITH THIS UTILITY CANNOT BE RECOVERED

Clicking No in the above aborts the operation. Clicking Yes proceeds with the operation and allows the choice to repack the database file immediately or to defer the operation until later.

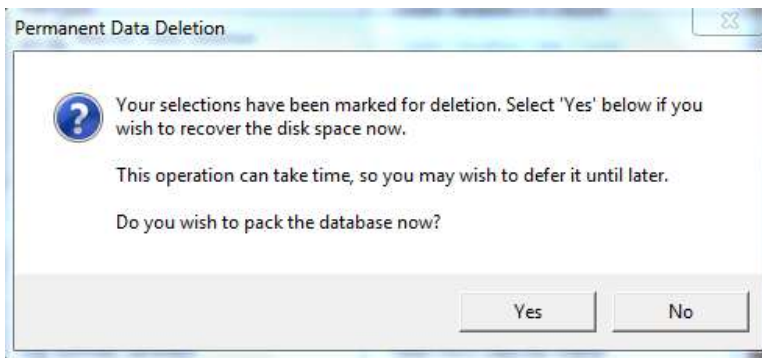


FIG: 12.5.31 Permanent Data Deletion and pack database

Deleting a whole pass is the same procedure but will eliminate all traces in the selected pass

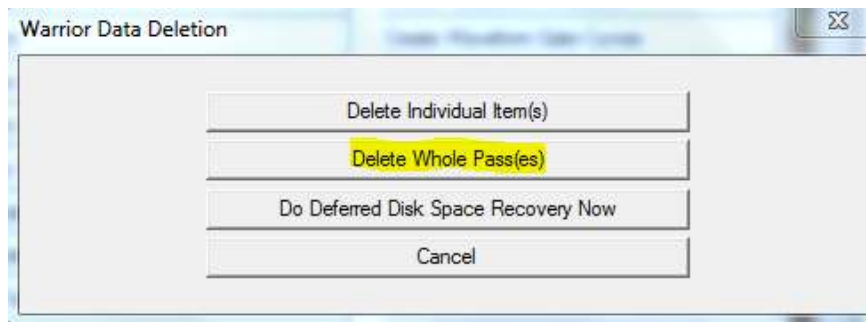


FIG: 12.5.32 Delete Whole Pass(es)

Selecting “Do deferred Disk Space Recovery Now” will repack the database eliminating unused spaced freed up during the deletion.



FIG: 12.5.33 Disk Space Recovery

Clicking Yes causes the data item to be removed and the database repacked immediately and clicking No marks the data item for deletion, but defers the packing of the data base.

12.5.8 Undelete Data

To undelete Data select the “ Undelete Data” tool from Data Management, select your database and you will be prompted with a list of deleted data that can be restored. You can only restore one item at a time. Highlight the data to restore and click on restore. If you are done after the restore click close or select the next data item to restore, continue until complete.

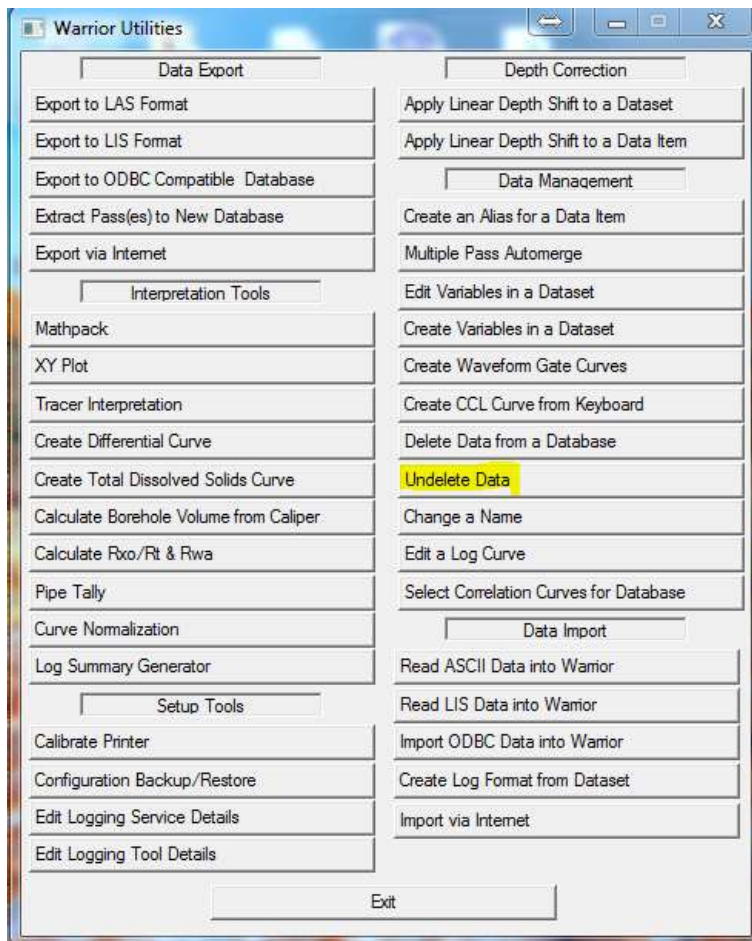


FIG: 12.5.34 Undelete Data

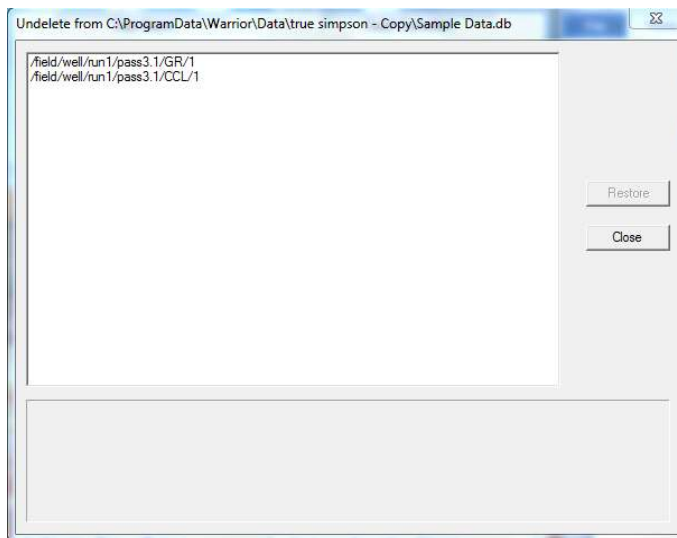


FIG: 12.5.35 Select Data to Undelete

12.5.9 Change a Name

The change a name utility allows you to change the database name of a field, Well, Run, Pass or Item. Select the appropriate radio button for to rename, then browse to the desired database and item. Once you have selected the item to edit you will be prompted for a new name and optional new description.



FIG: 12.5.36 Change a Name

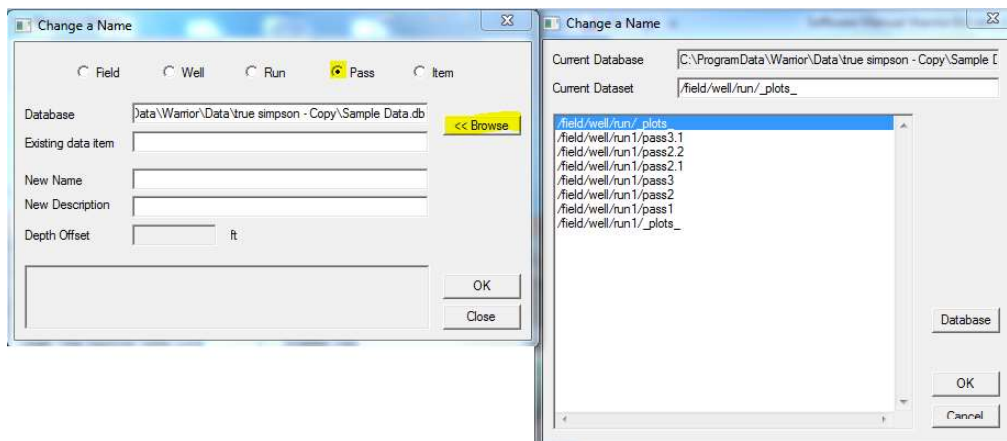


FIG: 12.5.37 Change a Name Selection

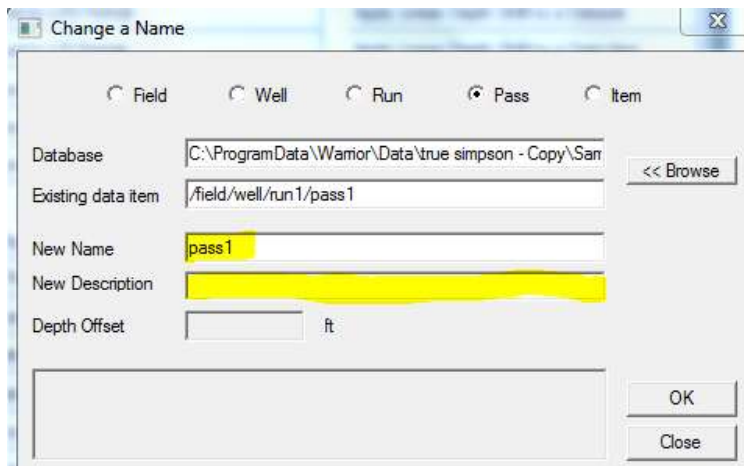


FIG: 12.5.38 Change a Name Selection

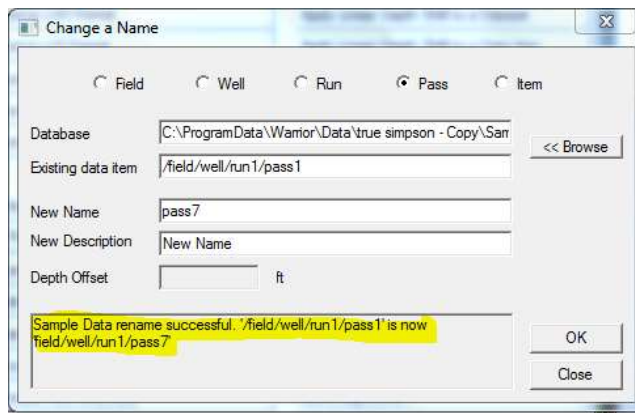


FIG: 12.5.39 Name change completed

12.5.10 Edit a Log Curve

To edit a log curve select “ Edit a Log Curve “ and you will be prompted for a database and pass, select the appropriate pass.



FIG: 12.5.40Edit a Log Curve

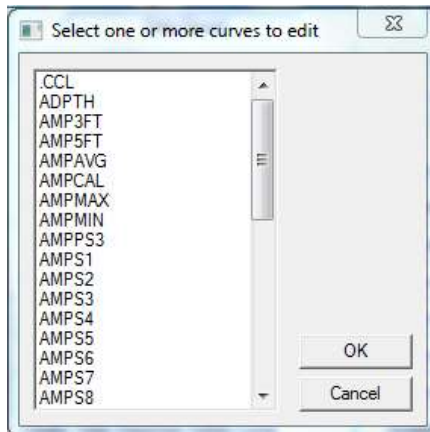


FIG: 12.5.41 Select one or more curves to edit

You do not need to select a curve at this time in warrior 8 this has been replaced, click on OK to continue. This will bring up an interactive plot with an edit tool in the tool bar.

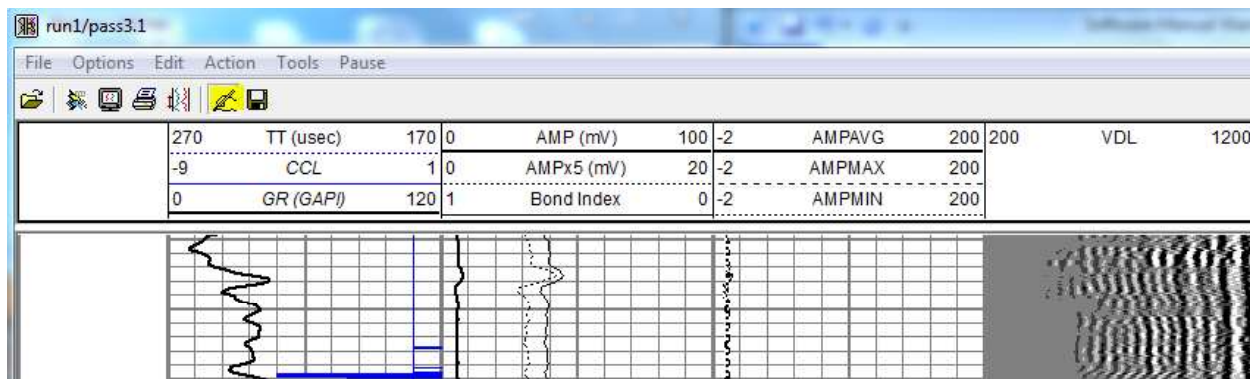


FIG: 12.5.42 Plot Curve

After clicking on the edit tool right click on the curve you wish to edit, make sure that it is not wrapped. After right clicking you will be prompted to left click and draw a rectangle around the area to be modified.

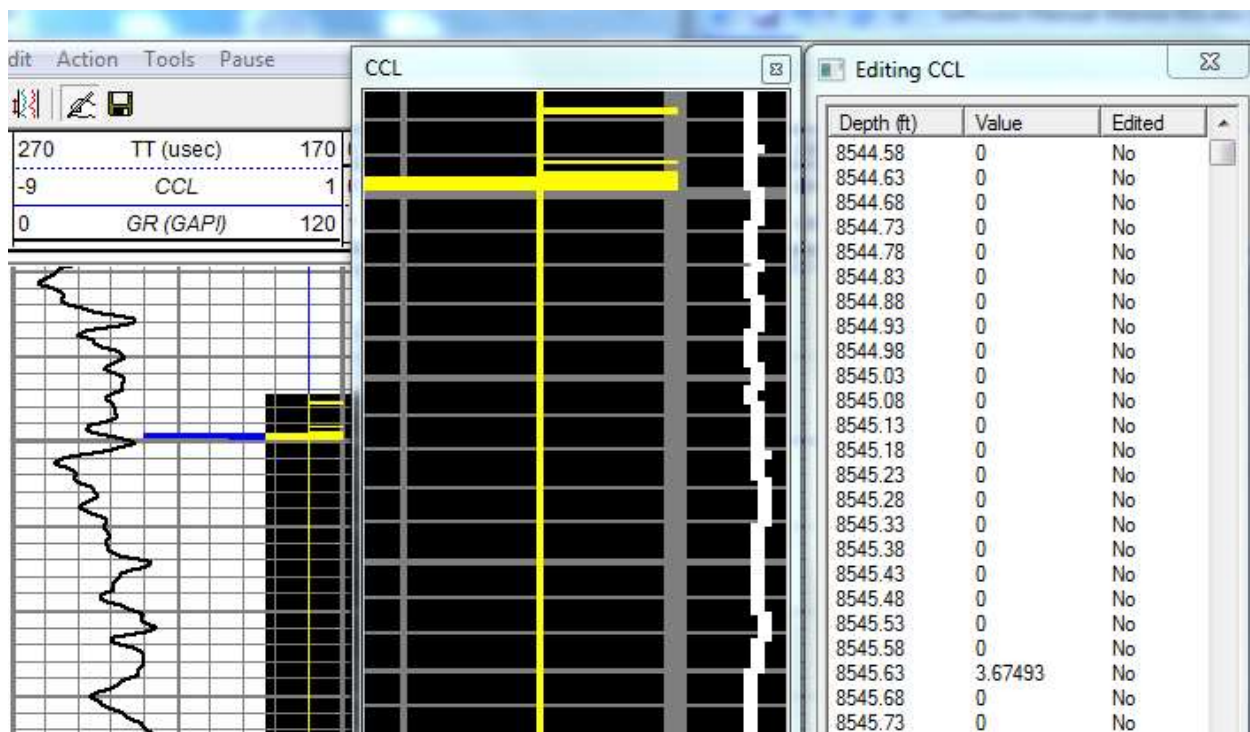


FIG: 12.5.43 Zoom Curve

At this point you can either hand draw the curve changes in the zoomed box or by double clicking on the text windows depth you can manually enter curve values.

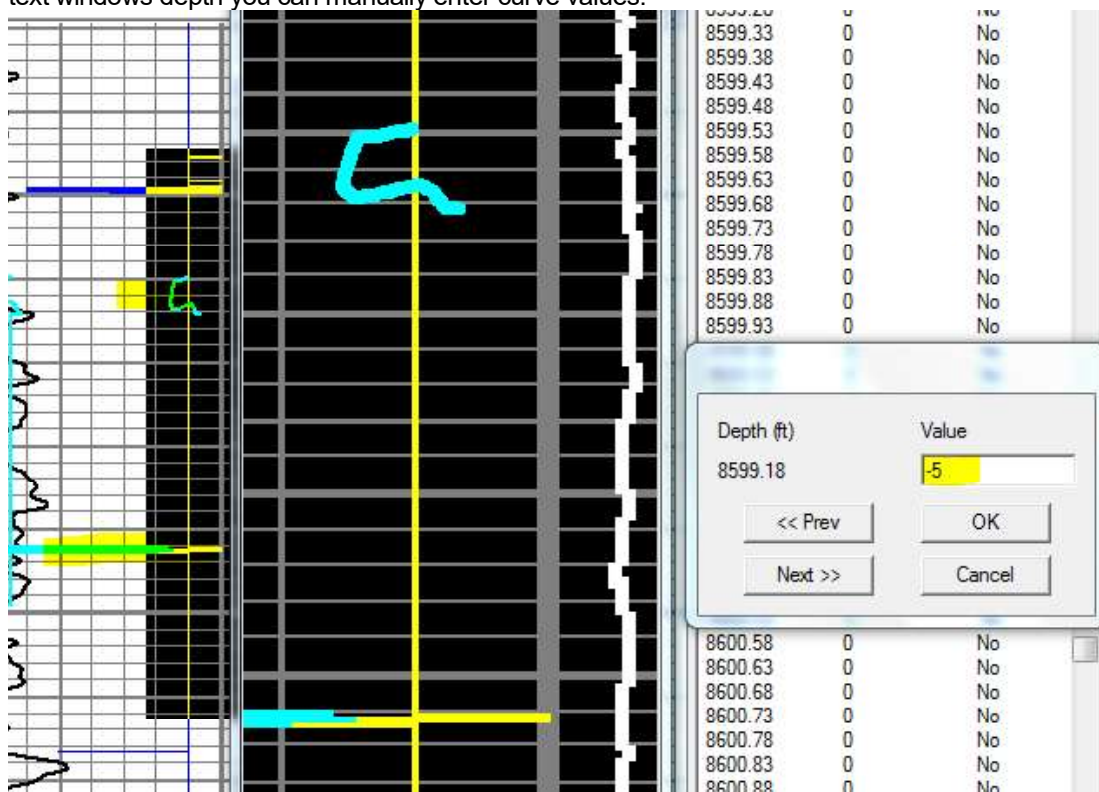


FIG: 12.5.44 Draw Curve Free Hand and Manually.

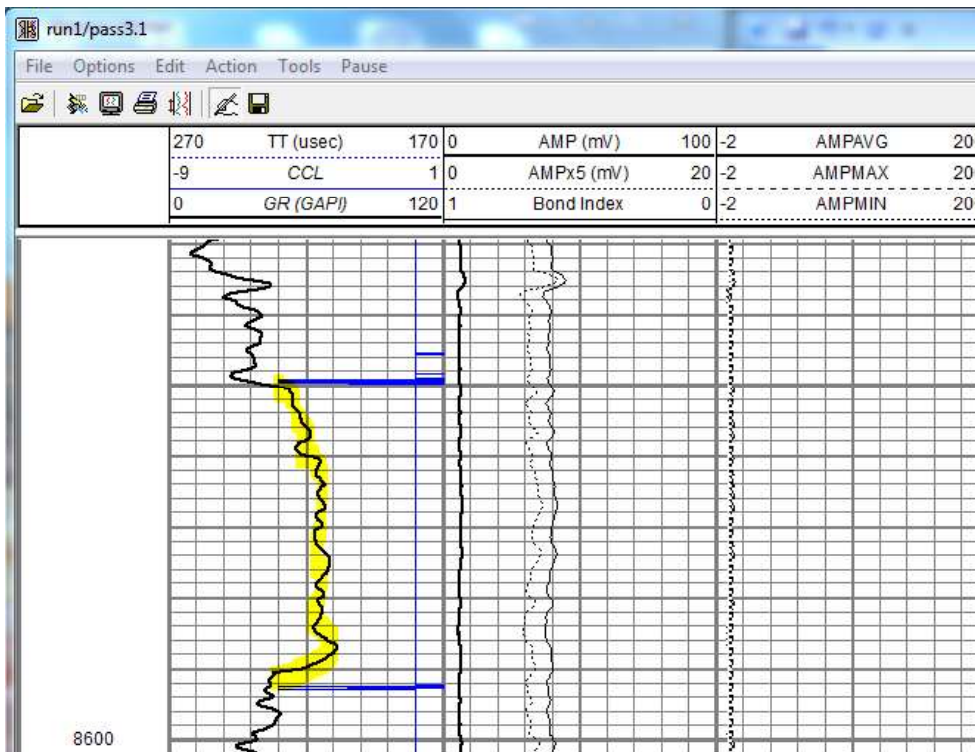


FIG: 12.5.45 Free Hand Gr

12.5.11 Select Correlations Curves from Data Base

Selecting correlation curves allows you to plot a curve (es) within a database along with any other pass. The first thing you will be prompted for is the database and then pass. Then you will be given the option to select a curve or curves. Highlight the curve and select add. On the right hand side of the window you can select scales color and wrap similar to the format editor. You also have two radio buttons the first one "Always show in original track with original scales " will place the curve in the same track with the same scales as the pass it originated in this will bypass the scales and tracks from above. This is the standard correlation mode. The second radio button "Only show when another curve by the same name is plotted, Show with the same name and scales as the named curve" will plot the selected curve only if it exists in the pass to be plotted, it will use the same scales and track as the current pass.



FIG: 12.5.46 Select Correlation Curves to for Database

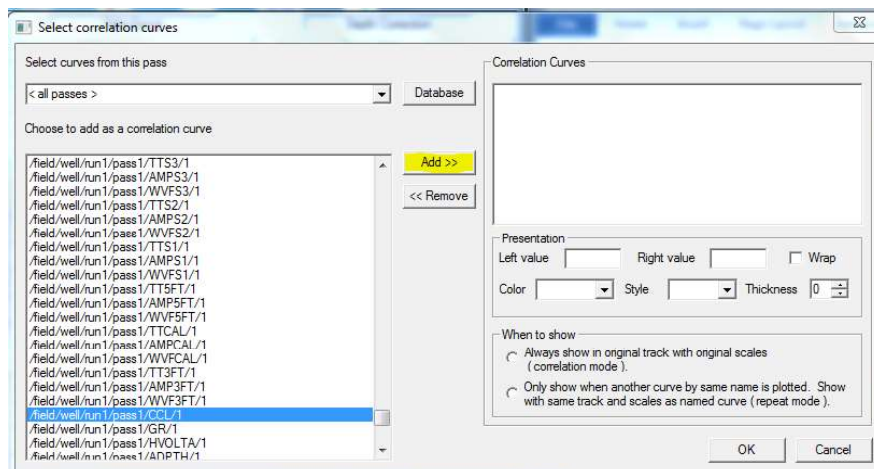


FIG: 12.5.47 Select Curve(es) for Correlation

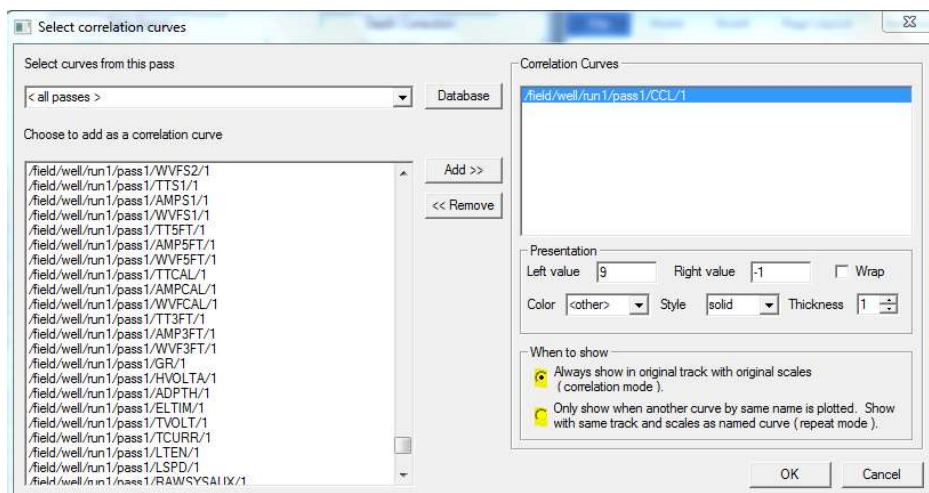


FIG: 12.5.48 Plotting Options

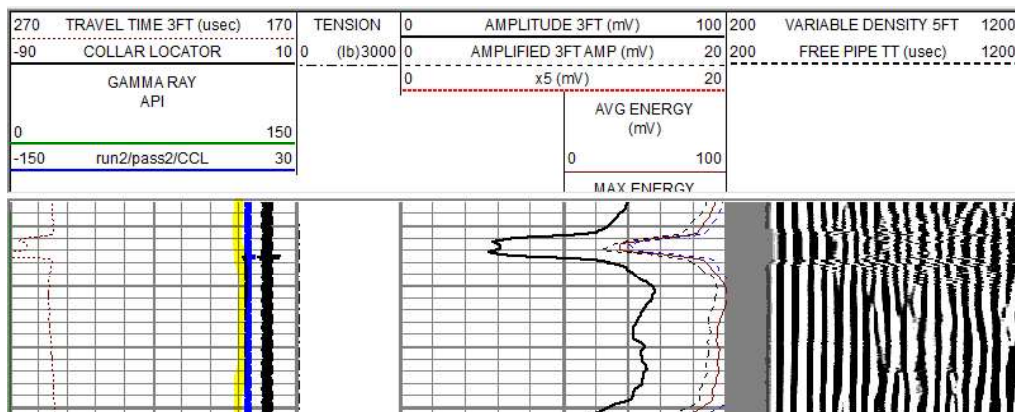


FIG: 12.5.49 CCL Correlation Curve

12.6 Setup Tools

12.6.1 Calibrate Printer

In Database Utilities click on the Calibrate Printer button.

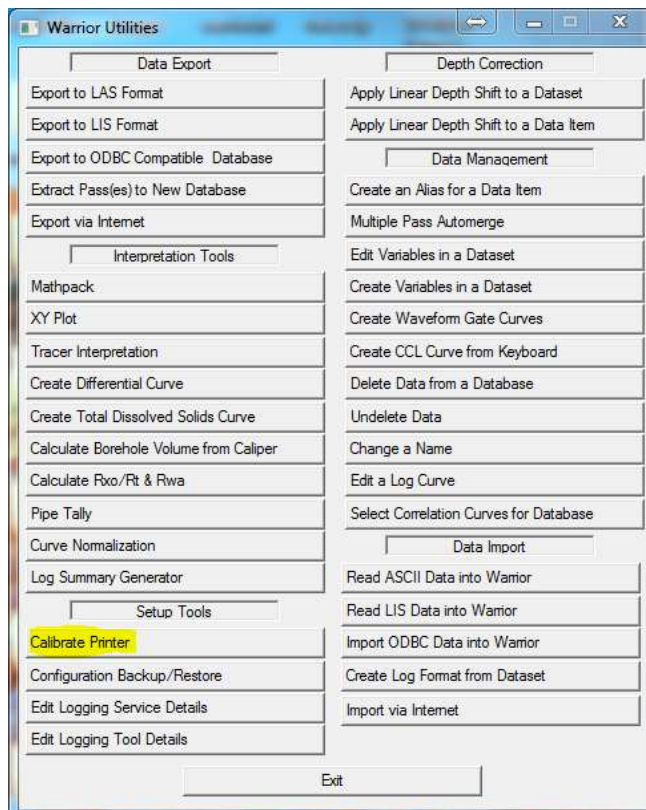


FIG: 12.6.1 Select Calibrate Printers

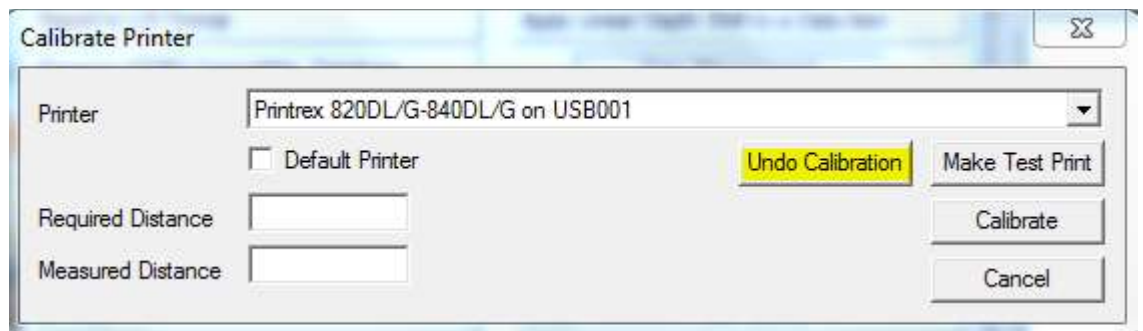


FIG: 12.6.2 Select from Hardcopy Calibrate

Printer box. It is recommended but not necessary Select the printer you want to calibrate. This printer may be made the Default Printer by checking the Default to undo calibration first, this will set the gain to 1.000000.

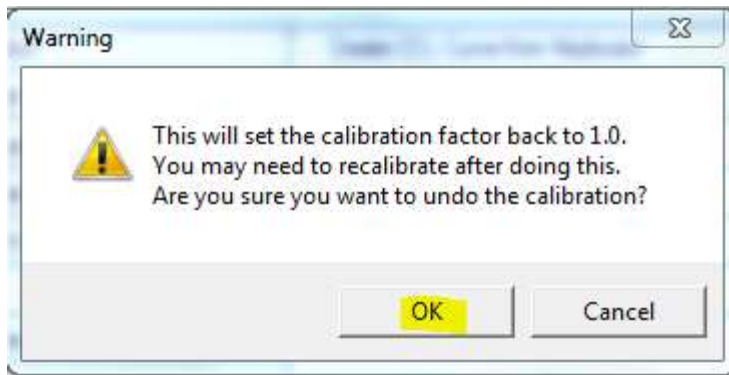


FIG: 12.6.3 Undo Calibration

Select “Make Test Print” this will prompt you for a database to plot.

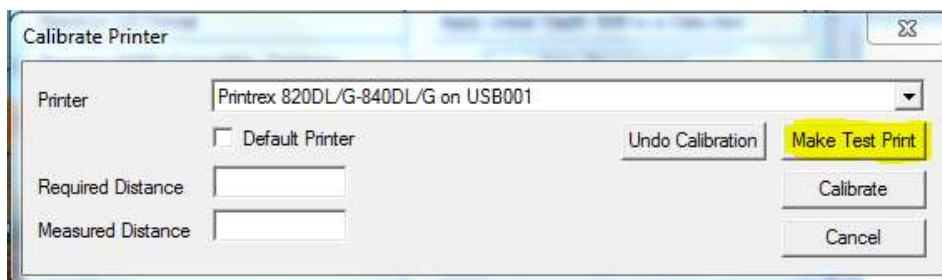


FIG: 12.6.4 Select Make Test Print

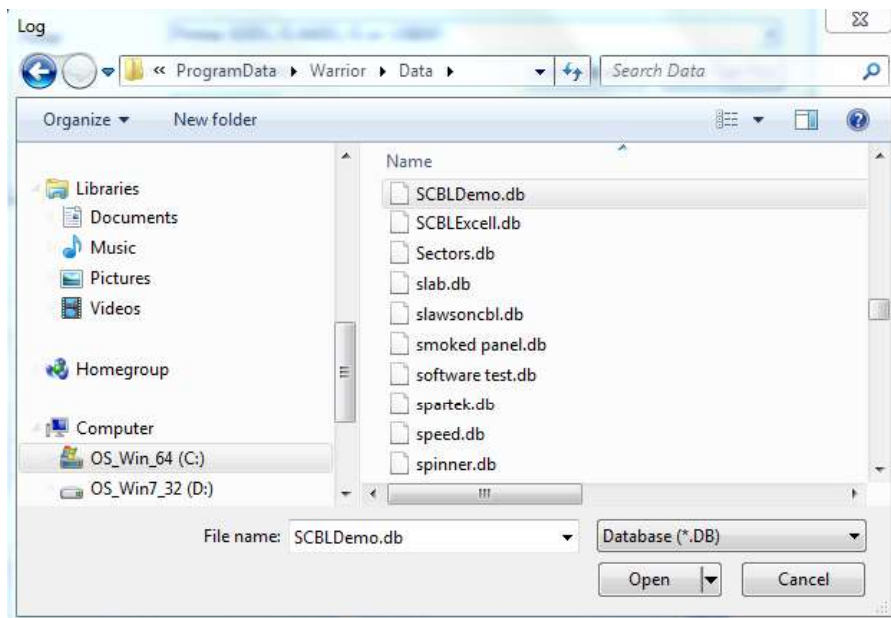


FIG: 12.6.5 Select Database to Plot

The calibration is based on two parameters entered by the user. Enter the required length of print output for any given log interval, e.g. 10 inches for 200 feet of log on a 5-inch scale (5 in = 100Ft). It means Scale 1: 240. Enter the actual length of plot currently output by the plotter for the same log interval. Press Calibrate.

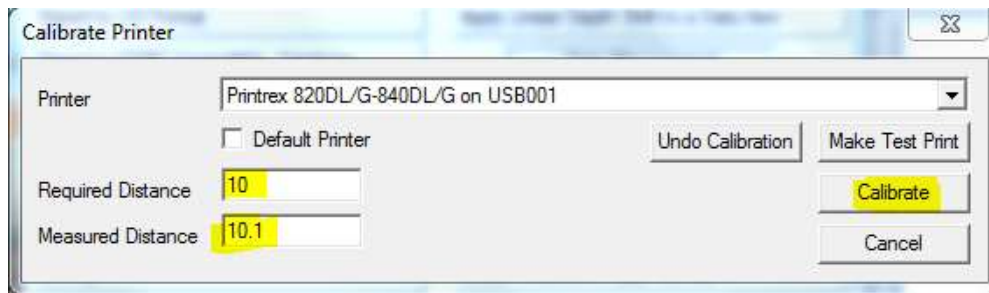


FIG: 12.6.6 Calibrate

Note that the required length can be any length, so that the current hardcopy may be forced to match any correlation log, even one with an incorrect hardcopy scale.

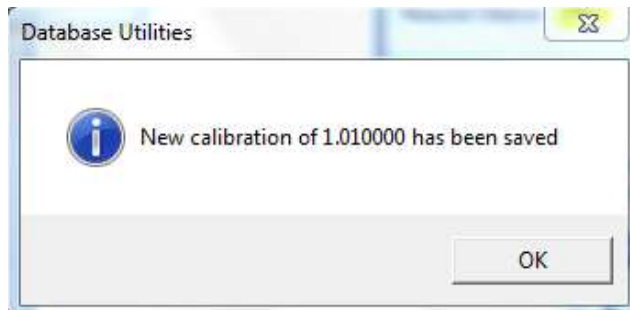


FIG: 12.6.7 Click on OK

12.6.2 Configuration Backup/Restore



See Chapter 9

12.6.3 Edit Logging Service Details



FIG: 12.6.8 Edit Logging Service Details

[See Chapter 13](#)

12.6.4 Edit Logging Tool Details



FIG: 12.6.9 Edit Logging Tool Details

[See Chapter 14](#)