

POWER CORE

2016 Imperial Tutorial



The Intelligent Geological Software Solution

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Introduction

Power*Core™ (Petrographical Office Wellsite Evaluation and Reporting) is a chip and core logging management program that utilizes single-entry data capturing to produce geological striplogs. The geological data is entered into the system through the use of intuitive data entry forms to ensure standardization of data. This data is stored in an RDBMS(Relational Database Management System) to allow data manipulation using SQL access tools.

Power*Core™ software consists of four (4) main parts:

A log editor module that allows you to change the striplogs to suit your needs and preferences.

A data transfer module.

Report printing modules.

An on-line help system that is designed to familiarize you with the commands and functions available in

Power*Core™ and lead you through many of the processes involved in creating logs.

A note about navigating through Power*Core™:

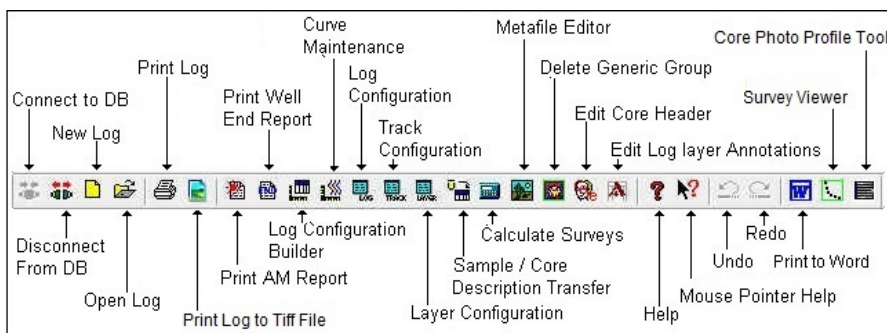
When you are entering information into data forms, you may move between boxes/fields by **pressing the Tab key** to go forward and **Shift +Tab keys** to move backwards. To exit forms that do not have an **Exit, OK, or Cancel** button, **press the Esc key** on the keyboard.

To access the On-line Help System in Power*Core™:

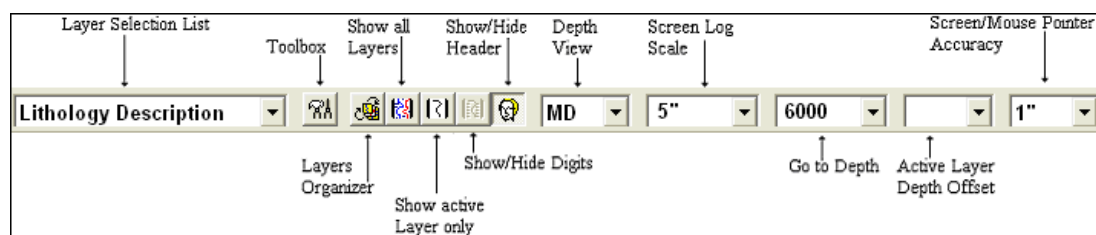
You can make use of the context sensitive help by **pressing the F1 key** when you are in a dialogue box. A pertinent help file will appear, opened to the topic relevant to the dialogue box you are in.

Below are some examples of common features within Power*Core™:

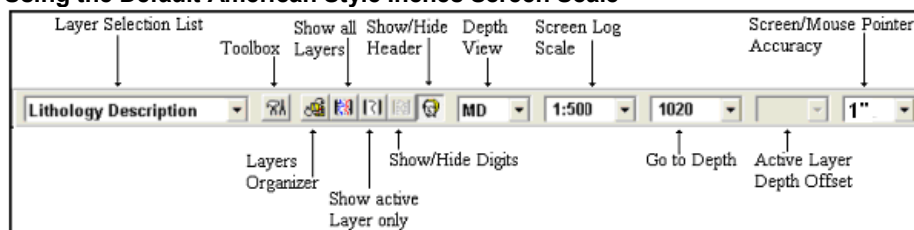
The Toolbar



The Selection Bar

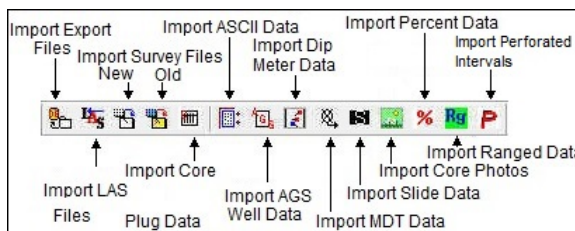


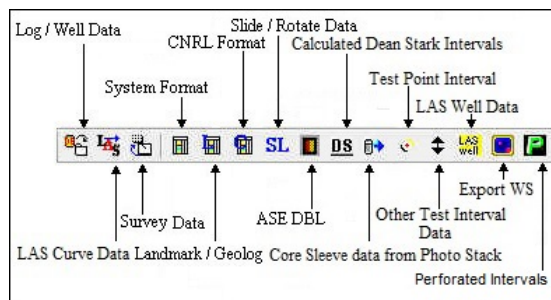
Selection Bar Using the Default American Style Inches Screen Scale



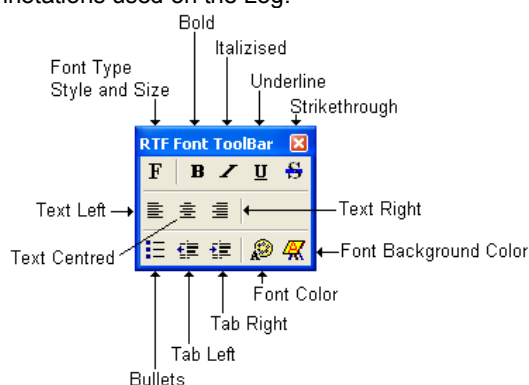
Selection Bar Utilizing a Ratio for Screen Scale

Import Toolbar

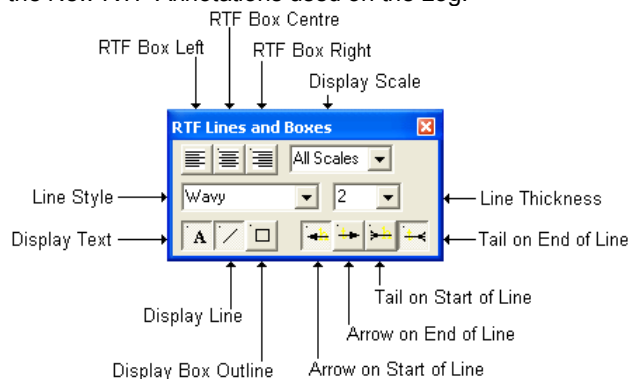


Export Toolbar**RTF Font Toolbar**

Turns the RTF Font Toolbar on and off. This toolbar is dockable and can be moved to different places on the screen. This is used with the New RTF Annotations used on the Log.

**RTF Line and Boxes Toolbar**

Turns the RTF Line and Boxes Toolbar on and off. This toolbar is dockable and can be moved to different places on the screen. This is used with the New RTF Annotations used on the Log.

**Status Bar**

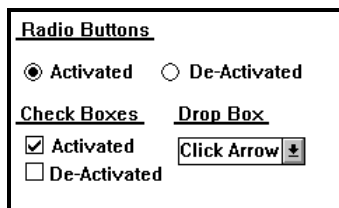
Turns the Status Bar, located at the bottom of the Power*Log / Core & Curve™ screen, on and off.

This is the Power*Log / Core & Curve™ Status Bar...

The **Status Bar** displays system status and any error messages in the lower left corner of the screen. If there are no errors the status bar will indicate "For Help, press F1".

For Help, press F1 | pgeology | UPDATE KB: 597.6

Note: The KB Elevation is displayed in the lower right corner of the **Status Bar**



The On-line Help is divided into four(4) main categories:

Commands - Descriptions of each menu command within Power*Log™.

Toolbar - Shortcuts to common commands are explained.

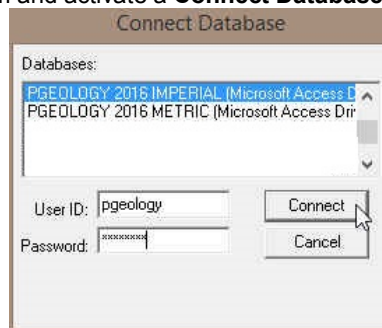
Database Table Operations - Commands/functions related to the Database Table are described.

Quick Reference Guide - The portion of the **On-line Help System**, that quickly refers you to some of the more commonly performed tasks.

This tutorial will guide you through the process of creating and editing a core log.

Connecting to the Database

- 1.) **Double click** on the **PowerCore 2016** icon. Acknowledge the Security Information window by **clicking** on the **OK** button. This will initiate the program and activate a **Connect Database** window.

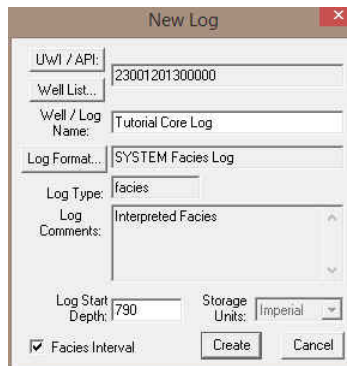


- 2.) Highlight the **PGEOLGY 2016 IMPERIAL (Microsoft Access Driver[*].mbd)** database.
- 3.) Move your mouse pointer to the **User ID** field and **click**. This will activate a flashing cursor in the **User ID** field. **Type "pgeology"** in the **User ID** field. **Press the Tab key** on the keyboard to move to the **Password** field.
- 4.) **Type "pgeology"** in the **Password** field and then **click** on the **Connect** button. The program will now load various dictionaries and then activate an **Open Log** window.

Creating a New Well / Log

The first step in creating a new log is to **click** on the  **New Log** button on the **Toolbar** or to **select New** under **File** on the **Selection Bar**. This will open the **New Log** window.

This more than likely will appear after connecting to the Database without you have to do the above procedure if this was the first time you have activated Power*Core.



- 1.) The **Well/Log Name** field is where you enter the name of the well (no more than 50 characters long). **Type "Tutorial Core Log"** into the **Well / Log Name** field.

- 2.) Click on the **UWI / API:** button to activate the **UWI / API Format** window.

The UWI / API Format window contains the following fields:

- Use:** API / I (dropdown)
- UWI / API:** (text field)
- DLS (Dominion Land Survey System):** Survey System, Loc. Ex, LSD, Sec, Township, Range, E/W, Mer, D/A, Event Sequence.
- NTS (National Topographic Series System):** Survey System, Loc. Ex, 1/4, Unit Block, P. Quad, L. Quad, Sixteenth, Event Sequence.
- API Code / Name:** 23001201300000
- Buttons:** OK, Cancel

- 3.) The default or flashing caret is in the API Code / Name field. **Type** in “23001201300000”. The 23 is a State Code, the 001 is a County Code, the 20130 is the Unique Well ID, the 00 is for the sidetrack code, and the last 00 is for the Event Sequence.
- 4.) Click on the **OK** button when you have finished entering the **UWI**.
- 5.) Click on the **Log Format...** button to activate the **Log Format List** window.

The Log Format List window displays a list of log formats with the following options:

- ☒ V SYSTEM Facies Log [SYSTEM (I)]
- ☐ V SYSTEM [SYSTEM (I)]
- ☐ V SYSTEM 2 Well Correlational [SYSTEM (I)]
- ☐ V SYSTEM 3 Well Correlational [SYSTEM (I)]
- ☐ V SYSTEM Composite Geology [SYSTEM (I)]
- ☐ V SYSTEM Core Carbonate Lithology Restricted Layers [SYSTEM (I)]
- ☐ V SYSTEM Core Carbonate LR Layers Depth Grid On [SYSTEM (I)]
- ☐ V SYSTEM Core Carbonate No Lith Restricted Layers [SYSTEM (I)]
- ☐ V SYSTEM Core Carbonate No LR Layers Depth Grid On [SYSTEM (I)]
- ☐ V SYSTEM Core Composite Lithology Restricted Layers [SYSTEM (I)]
- ☐ V SYSTEM Core Composite LR Layers Depth Grid On [SYSTEM (I)]
- ☐ V SYSTEM Core Composite No Lith Restricted Layers [SYSTEM (I)]
- ☐ V SYSTEM Core Composite No LR Layers Depth Grid On [SYSTEM (I)]
- ☐ V SYSTEM Core Log Lithology Restricted Layers [SYSTEM (I)]
- ☐ V SYSTEM Core Log LR Layers Depth Grid On [SYSTEM (I)]
- ☐ V SYSTEM Core Log No Lithology Restricted Layers [SYSTEM (I)]
- ☐ V SYSTEM Core Log No LR Layers Depth Grid On [SYSTEM (I)]
- ☒ V SYSTEM Gamma Curve Only [SYSTEM (I)]
- ☐ V SYSTEM Geo / Mudlog All Gas [SYSTEM (I)]
- ☐ V SYSTEM Geo / Mudlog Some Gases [SYSTEM (I)]
- ☐ V SYSTEM Geology Log [SYSTEM (I)]
- ☐ V SYSTEM Horizontal Log PowerLog Vertical Format [SYSTEM (I)]
- ☐ H SYSTEM HORZ [SYSTEM (I)]
- ☐ H SYSTEM HORZ [Desc Track] [SYSTEM (I)]

Buttons on the right: Query, Select, Clear Field, Cancel.

- 6.) Click on “**V SYSTEM Facies Log [SYSTEM (I)]**” to highlight it and then click on the **Select** button. You may also double click on “**V SYSTEM Core Log (BR) grid off [SYSTEM (I)]**”
- 7.) Once you have been returned to the **New Log** window, double click in the **Log Start Depth** field. This will highlight the zero (0) and activate a flashing cursor. **Type 790** in the **Log Start Depth** field.
- 8.) **Activate** the **Facies Interval Check** box ☒ as shown above.
- 9.) Once the information is entered, click on the **Create** button. This will initiate the **New Log** and activate a window named **For Layer ‘Environment’**.

There will be number of Add Curves windows presented to the user to identify, Curve Name, Units, Null Values, Scales, Backup Scales and Grid Type. The User can change any or all of these curve options.

- 10.) Click on the **OK** button for the Add Curve Windows for **SP** and **Gamma Ray** Curves as the default values are good.

The Add Curve window for SP curve shows:

- UWI / API:** 23001201300000
- Curve Heading:** Name: SP, Curve Units: Mv
- Depth Units:** ft, **Null Value:** -999.25000
- Curve Scale:** Depth Interval: 0.00 to 0.00, Scale: 100.00000 to 200.00000, Backup Scale: straight shift, Grid Type: Linear
- Buttons:** OK, Cancel

The Add Curve window for Gamma Ray curve shows:

- UWI / API:** 23001201300000
- Curve Heading:** Name: Gamma Ray, Curve Units: gapi
- Depth Units:** ft, **Null Value:** -999.25000
- Curve Scale:** Depth Interval: 0.00 to 0.00, Scale: 0.00000 to 150.00000, Backup Scale: straight shift, Grid Type: Linear
- Buttons:** OK, Cancel

- 11.) When the **Density** and **Neutron Porosity** Curves are added you will need to **change** the **left scales** from **60.0000** to **0.60**. The examples of each are shown below. This is done as the values in the curves being imported to these curves are fractional and not in percentage format. If you do not do this your curves will import

but will not show and you will have to change scales from the right click menu. Now **Click** on the **OK** button for the Add Curve Windows for **Density and Neutron Porosity** once the scale values are good.

The image shows four 'Add Curve' dialog boxes arranged in a 2x2 grid. The top row shows 'Density Porosity' and the bottom row shows 'Neutron Porosity'. Each dialog box has the following fields: 'UWI / API' (23001201300000), 'Curve Heading', 'Name' (Density Porosity / Neutron Porosity), 'Curve Units' (%), 'Depth Units' (ft), 'Null Value' (-999.25000), 'Curve Scale' (Depth Interval: 0.00 to 0.00, Scale: 60.00000 to 0.00000, Backup Scale: straight shift, Grid Type: Linear), and 'OK' / 'Cancel' buttons.

12.) **Click** on the **OK** button **3 times** for the Add Curve Windows for **Deep, Medium and Shallow Induction** Curves as the default values are good.

The image shows three 'Add Curve' dialog boxes arranged horizontally. Each dialog box has the following fields: 'UWI / API' (23001201300000), 'Curve Heading', 'Name' (Deep Induction / Medium Induction / Shallow Induction), 'Curve Units' (fthms), 'Depth Units' (ft), 'Null Value' (-999.25000), 'Curve Scale' (Depth Interval: 0.00 to 0.00, Scale: 0.20000 to 2000.00000, Backup Scale: straight shift, Grid Type: Logarithmic), and 'OK' / 'Cancel' buttons.

13.) The next piece of information required for the log in the addition of the V Shale calculations GR Layer. The layer requires a Gamma Ray curve so the User must **select** the previously entered **Gamma Ray Curve**. **Click** on "Gamma Ray (gapi)" to highlight it and then **click** on the **Select** button. You may also **double click** on "Gamma Ray (gapi)"

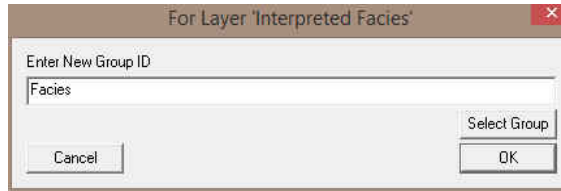
The image shows a 'Curve List selection for V Shale calculations' dialog box. It has a list box containing the following curves: Gamma Ray (gapi), Deep Induction (fthms), Density Porosity (%), Gamma Ray (gapi), Medium Induction (fthms), Neutron Porosity (%), Shallow Induction (fthms), and SP (Mv). The 'Gamma Ray (gapi)' curve is highlighted. To the right of the list box are four buttons: 'Query', 'Select', 'Clear Field', and 'Cancel'.


14.) This will activate the GR values for a clean Sand and a clean Shale. In our case we will utilize **20** gapi units for a clean sand and **120** gapi units for a clean shale. **Type** those values into the fields and **click** on the **OK** button.

The image shows a 'V Shale Options' dialog box. It has two input fields: 'Gamma Ray Clean' (20) and 'Gamma Ray Shale' (120). There are 'OK' and 'Cancel' buttons. At the bottom, there is a checkbox labeled 'Output in Percentage' which is checked.

The log you have selected has an **Interpretive Facies** Layer that can utilize existing groups (in your case none exist) or add new ones. These layers allow the user to define an interval with a color and/or pattern as well as a long name



or short name displayed in various ways. This layer also controls the Automated Dean Starks and Automated Test Interval Indicators.

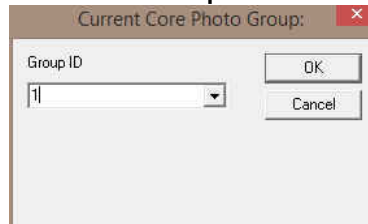


- 15.) This will activate the Enter a New Group Id for the Depositional Environment. **Type** in **Facies** and **Click** on the  **button**

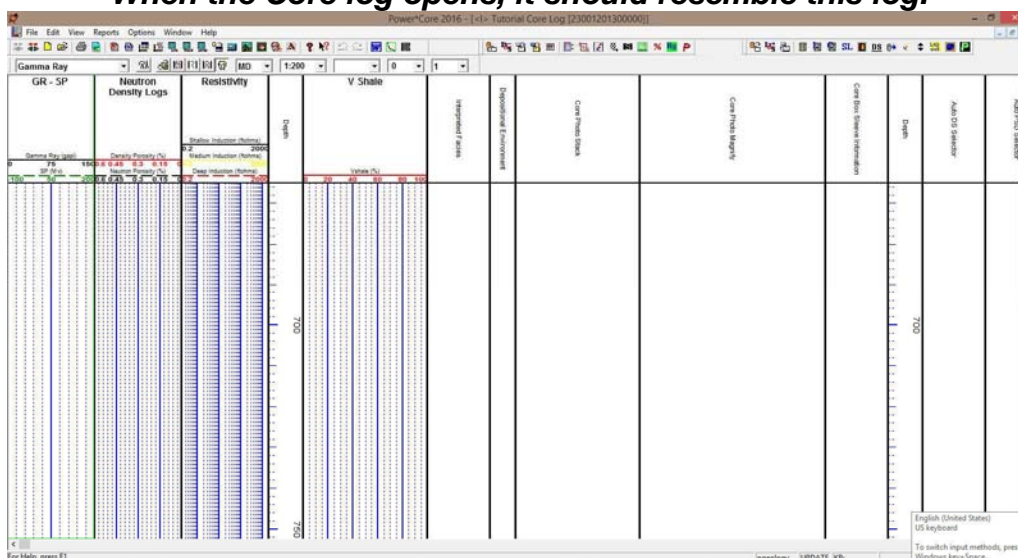
The log you have selected has **one generic fill category** that can utilize existing groups (in your case none exist) or add new ones. These layers allow the user to define an interval with a color and/or pattern as well as a long name or short name displayed in various ways. These are catch all categories that can be used for all sorts of data types. The one that is associated with this core log is called Depositional Environments.



- 16.) This will activate the Enter a New Group Id for the Depositional Environment. **Type** is **Depositional Environment** and **Click** on the  **button**
- 17.) Lastly for this log creation the User will have to identify the **Core Photo Graphic Group** for the Core Photo Stacking, Core# and sleeve data and the Core Photo Magnify Layers. The User can **type** in **1** in the **4 separate windows** and then **Click** on the  **button 4 separate times.**



****When the Core log opens, it should resemble this log.****



- 1.) You can now fill in your pertinent well information by selecting **Well** under **Edit** pull down menu on the **Selection Bar** to activate the **Well** window.

Well

Save Undo New Del First Prev ? Next Last Storage Units: Imperial Original Units:

API: 23001201300000 Surf. Location: 2300 1201 3000 00

Well Name: Tutorial Core Log Btm. Location: 2300 1201 3000 00

Operator: Anybody Oil & Gas Co. Licensee: Anybody Oil & Gas Co. Permit #: 342561

Drilling Contractor: Core em Up Pool: Big Field: Bigger

County: Ameriloo Rig #: 32

Province/State: Texas Elevations

Country: USA Reference: Ground Ground / Collar: 3

KB: 12 Casing Flange: 3

Surface Coordinates

Latitude: 35.326634 N/S: 400 ft. North of the South boundary

Longitude: 102.067410 E/W: 550 ft East of the West boundary

Intermediate Casing Point Coordinates

Latitude: N/S:

Longitude: E/W:

Bottom hole Coordinates

Latitude: 35.326751 N/S: 401 ft. North of the South boundary

Longitude: E/W: 5550 ft. East of the West boundary

UTM Surface Coordinates

Northing: 3912119 Easting: 766574

Hole Direction: Vertical ☐ Faulted ☐ Deviated Hole ID: First Well

Depths

Drillers T.D. (Tally) MD	Drillers T.D. (Tally) TVD (Strap) MD	Drillers T.D. (Tally) TVD (Strap) MD	Loggers T.D. MD	Loggers T.D. TVD
1130	1130	1130.45	1130.45	1128.6
KB to Ground	Cut	Fill	Plugback	Sidetrack
9		2		

Water Depth Reference: Water Depth:

Date Time Work Schedule

Spud: May 12, 2016 12:30 Curves

T.D.: May 19, 2016 17:30 Mud Types

Rig Release: May 21, 2016 08:00 Dir. Surveys

Well Status: Potential Austin Oil Sand Producer Det. Lith.

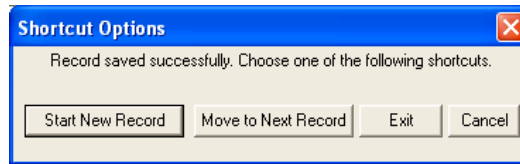
Abstract

- 2.) Fill in the information you feel is necessary (The well window shown above has been filled in to give you an idea of how to complete the fields) and then **click** on the **Save** button to save any changes you have made to the database.

Note: Some of the fields in the **Well** window have character restrictions or mandatory requirements. Consequently, if any of these restrictions have been violated or if any requirements have not been met, the offending field will be

highlighted. The nature of the problem will be displayed on the **Status Bar** (lower left corner of the screen), and you will be prompted with a system error message window.

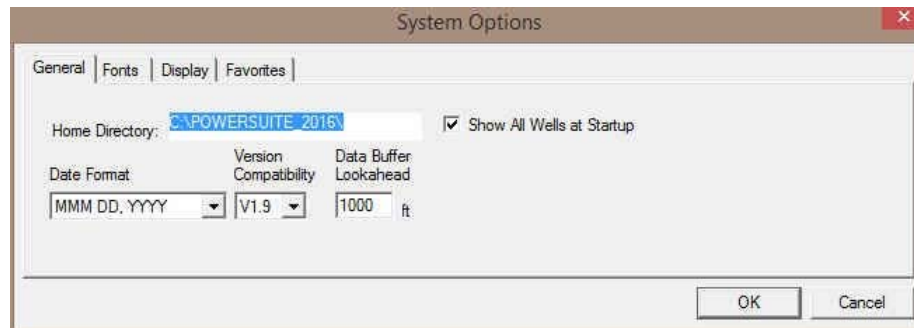
- 3.) If the record has been successfully saved, **click** on the **Exit** button, when prompted with the **Shortcut Options** window.



The System Options Window

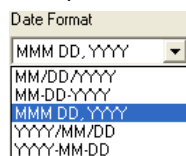
To activate the System Options window **click** on the **Options** selection on the menu toolbar and then **select** the **System Options** selection to activate the System Options window.

General Tab



Home Directory - This is the directory on your hard drive where **Power*Log**, **Power*Core** and **Power*Curve** is being executed. The user will not see any symbols on their log or print out any of our reports if you have the wrong home directory.

☒ **Show All Wells at Startup** This check box when ☒ activated will populate the Open Log window with all the wells in the database. If it is unchecked it may help our corporate users and the time it take to retrieve thousands of wells from the database and to populate the Open Log window with that information. If this check box is deactivated and you wish to see all your wells then simply **click** on the **Clear Query** button in the Open Log window to see all their wells if this option is deactivated.



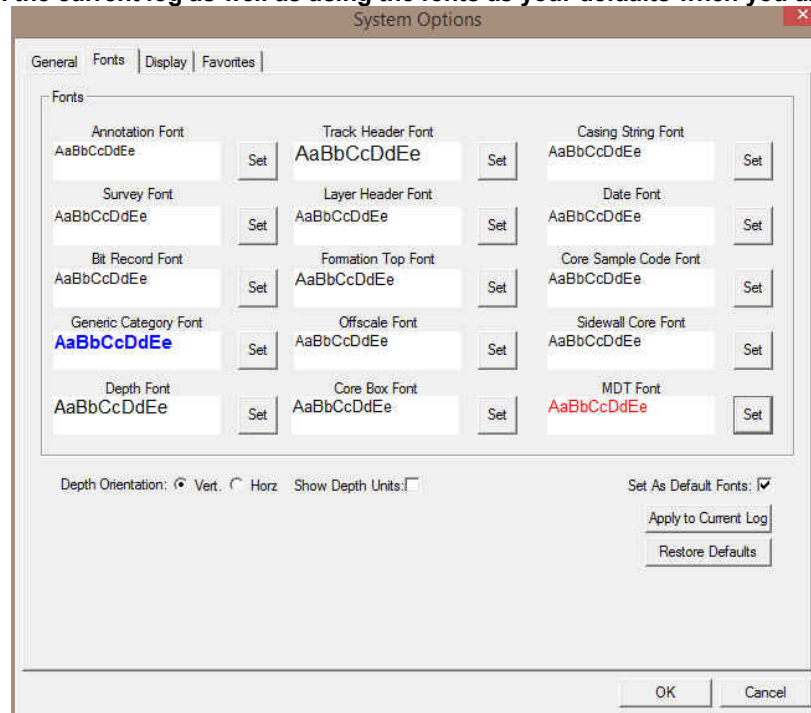
Date Format - From this drop box, you can select the date format. This selection determines how every date in **Power*Log / Core & Curve** will be entered and displayed. If you import a log with different date formats, **Power*Log / Core & Curve** will change the dates to comply with the format you've chosen here. The user can change this at any time and all the Date formats will be changed in the database.

Version Compatibility - Enables the user to achieve compatibility for Annotations in the older Versions of Power*Suite (V1.81 and before) and the Annotations in the newer Versions of Power*Suite (V1.9 and later).

Data Buffer Lookahead - The number placed in this field determines how far ahead and behind the current top depth will be stored in the computers buffer. The larger the look ahead number, the longer it takes for Power*Log / Core & Curve to refresh the screen when you exceed the look ahead value. However, until you meet or exceed the look ahead value, scrolling will be much faster, because the database is not yet being accessed.

Fonts Tab

This tab allows the user to set up most if not all of the fonts used in Power*Log, Core and Curve. You can set it up to be used on the current log as well as using the fonts as your defaults when you are making new logs.



Annotation Font - Allows you to determine the default font style, type, color and size of your annotations on your log. Also this is the default when you use any of the Sample Description Transfer options.

Survey Font - Allows you to determine the font style, type, color and size of your survey data associated with the Survey Layer on your log.

Bit Record Font - Allows you to determine the font style, type, color and size of your bit record data associated with the Bit Record Layer on your log.

Generic Category Font - Allows you to determine the font style, type, color and size of your Long or Short Name display option in all the Generic Category Layers displayed on your log.

Depth Font - This allows you to determine the font style, type, color and size of the depth markers in the **Depth** track of the log.

Depth Orientation: ☐ Vert. ☒ Horz - These radio buttons allows the user to change the orientation of the Depth Font on the Layer. Beware you may have to change the Track Width to accommodate the Font size and orientation. Refer to the Log Configuration Builder to do this.

Show Depth Units This check box ☒ when activated will display the depth units with the depth on the Depth Layer. ie. 1000 or 1000 ft. vs. 1000 ft. tvd.

Track Header Font - Allows you to determine the font style, type, color and size of your Track Headers on your log. All track headers use the same font across the entire log.

Layer Header Font - Allows you to determine the font style, type, color and size of your Layer Headers on your log. All Layer headers use the same font across the entire log.

Formation Tops Font - Allows you to determine the font style, type, color and size of your Formation Tops data associated with the Formation Tops Long and Expanded Layers on your log.

Offscale Font - Allows you to determine the font style, type, color and size of your curve values displayed when the curve pegs off scale.

Core Box Font - Allows you to determine the font style, type, color and size of your Core Box data entered in the Core Box layer.

Casing String Font - Allows you to determine the font style, type, color and size of your Casing string data displayed on the Casing String layer. This data is entered through the Casing String Report.

Date Font - Allows you to determine the font style, type, color and size of your Date data entered in the Date layer.


Core Sample Code Font - Allows you to determine the font style, type, color and size of your Core Plug data entered through the Core Plug Report. This font is displayed on the Core Sample Code layer.

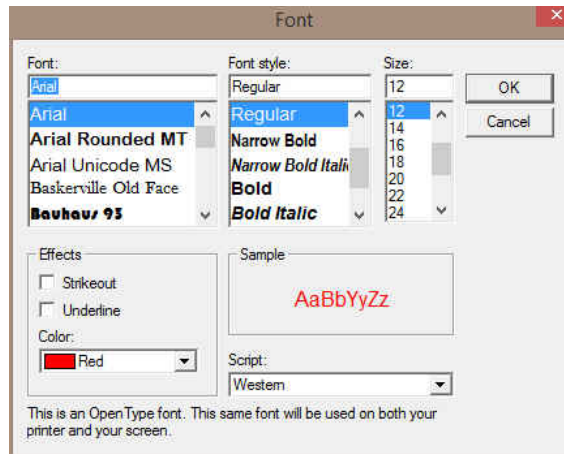
Sidewall Core Font - Allows you to determine the font style, type, color and size of your Sidewall Run and Sample Number data entered through the Sidewall Core Report. This font is displayed on the Sidewall Core layer.


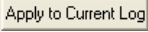
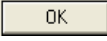
MDT Font - Allows you to determine the font style, type, color and size of your MDT Run and Test Number data entered through the MDT Report. This font is displayed on the MDT layer.

☒ **Set As Default Fonts** This check box ☒ when activated will make the font setting in this window your defaults for any new log created regardless on the Fonts stored in the template.

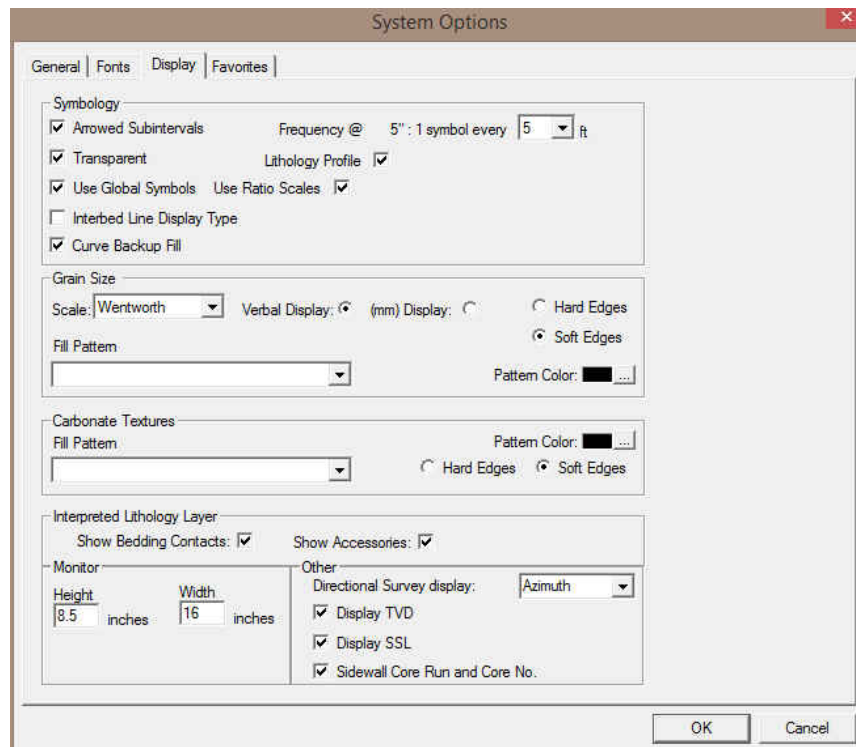
How to Set your Fonts.

1. Click on **System Options selection** under the **Options** menu selection To activate the System Options window.
2. Then click on the **Font Tab** to activate the Tab.
3. Click on the  button beside the **MDT Font option** that we wish to change and this will activate the Font Window.

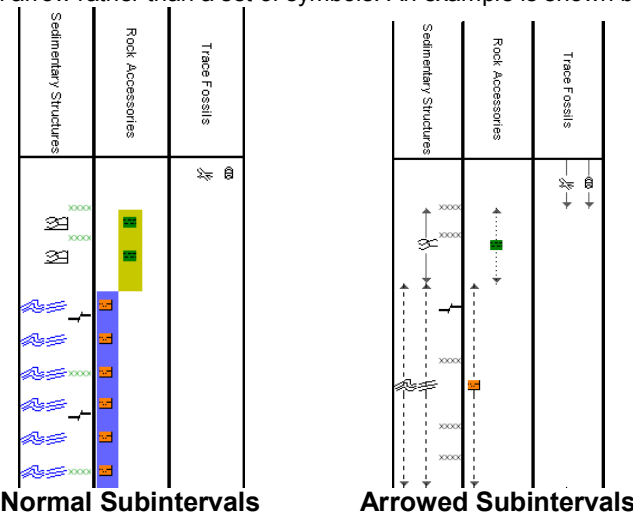


4. Select form the Font (Arial), Font Style (Regular), Size (12) and Color (Red). When you are finished click on the  button
5. Repeat steps 2-4 for all Font types that you wish to change.
6. Click on the  button.
7. If you want to set these as your default Font settings click on the ☒ **Set As Default Fonts** check box.
8. Click on the  button in the **Systems Options** Tab dialogue window.

Display Tab



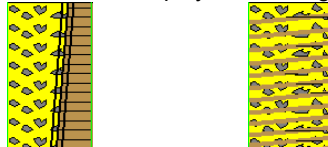
Arrowed Subintervals - This check box ☒ when activated will indicate the top and bottom of your subintervals (portion of an interval) with an arrow rather than a set of symbols. An example is shown below.



Transparent - This check box ☒ when activated, this function makes the background of the accessory symbols transparent, so that the bed in the background shows through. If deactivated, a white background surrounds the accessory symbols in order to separate them more from the beds.

Use Global Symbols - With the ability to edit existing metafiles the user may have imported a well that has used metafiles or symbols that have been modified to look differently than the one existing within your system symbols. If you wish to use your symbol set instead of the revised imported ones you can select this check box ☒ to make that change.

Interbed Line Display Type - This check box ☒ when activated will display the interbed data with a line display splitting the two lithology types or when unchecked will display the lithology in an interbed fashion as displayed below.

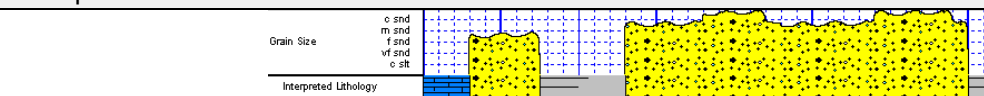


Curve Backup fill - This check box ☒ when activated will show a sideways hatching fill pattern when a curve goes off scale or in the backup mode. If unchecked there will be no hatching pattern when the curve goes off scale.

Frequency @ 1:240 - This drop box determines how often symbols are drawn on a **Lithology Layer**, with the scale of 1:240. For example: 1 symbol every 1 meter at 1:240, 2 symbols every 1 meter at 1:120, 1 symbol every 2 meters at 1:480, and so on. These frequencies are only in effect if you utilize the entire interval in **Oil Shows**, **Rounding**, **Sorting**, **Framework**, or designated an interval in **Sedimentary Structures**, **Traces Fossils** and **Rock Accessories**.

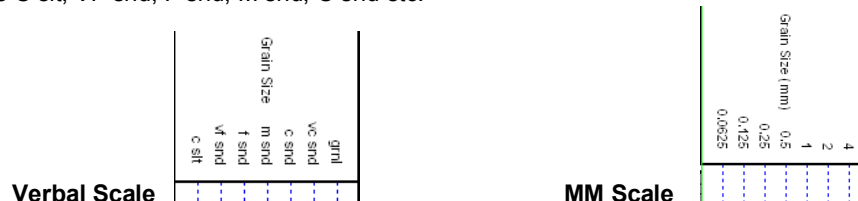
Lithology Profile - This check box ☒ when activated will fill in the Carbonate Texture and Grain Size layers with the interpretive lithology. It will draw the lithology to the maximum size filled in over the interval.

Note: The user may wish to turn off the track borders when this option is selected. You will see an example of this shown below.



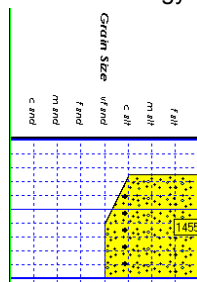
Grain Size Scale List box - You may choose between **Wentworth**, **Canstrat** or **Amstrat** scales, when using the **Grain Size Builder**. The Wentworth Grain size only allows full grain size while Canstrat / Amstrat allow half grain sizes when drafting in the Grain size and matrix layers.

Verbal Display - This ☒ radio button will display the **Grain Size Track header** with the equivalent verbal grain sizes such as such as C slt, VF snd, F snd, M snd, C snd etc.

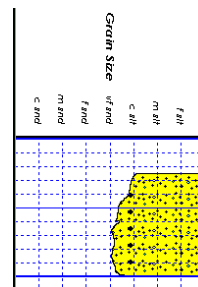


(mm) Display: ☐ This ☒ radio button will display the **Grain Size Track header** with the equivalent numeric grain sizes (in mm) such as .0625, .125, .25, .5, 1, 2 etc. as shown above.

☐ Hard Edges This ☒ radio button will display the grain size with strait edges and right angles between the grain sizes. The illustration below is shown with Lithology Profile activated.



Hard Edges

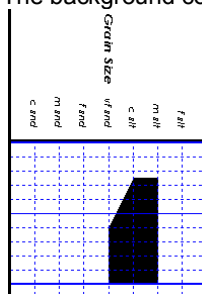


Soft Edges

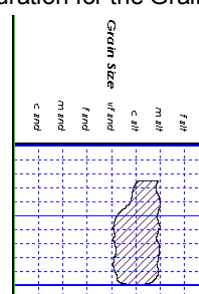
☒ Soft Edges This ☐ radio button will display the grain size with curved edges and rounded angles between the grain sizes.

Grain Size Fill Pattern Upward hatch (left to right) at 45 degrees This drop box allows the user to select a hatching pattern when using the Grain Size Layer with the Lithology Profile not activate.

Grain Size Pattern Color: This color selector allows the user to pick the line color (foreground) when the fill pattern option is used. The background color is found in the Layer configuration for the Grain Size.



Grain Size No Pattern Hard edges



Grain Size Pattern Soft edges

Carbonate Texture Fill Pattern Upward hatch (left to right) at 45 degrees This drop box allows the user to select a hatching pattern when using the Carbonate Texture Layer with the Lithology Profile not activate.

Carbonate Texture Pattern Color: This color selector allows the user to pick the line color (foreground) when the fill pattern option is used. The background color is found in the Layer configuration for the Carbonate Texture Layer.

Carbonate Textures ☐ Hard Edges This ☒ radio button will display the grain size with strait edges and right angles between the Carbonate Textures. The illustration below is shown with Lithology Profile activated.

Carbonate Textures ☒ Soft Edges This ☐ radio button will display the grain size with curved edges and rounded angles between the Carbonate Textures.

Interpreted Lithology Layer - Show Bedding Contacts: ☒ -When this check box ☒ is activated the bedding contacts (lines) between the drawn lithology types in the Interpretive Lithology Layer will be shown.

Interpreted Lithology Layer - Show Accessories: ☒ When this check box ☒ is activated it will turn on the accessories in the Interpretive Lithology Layer.

Monitor Height - This option allows you to scale your monitor for Power*Log / Core so you may correlate on-screen wells with hard copy logs that you may have. It is recommended that you take an opportunity to measure the vertical viewing area of your monitor in inches and then insert that value in the **Monitor Height** field. Be aware, however, that if you adjust the screen height knob on your monitor, this will affect the monitor height setting.

Monitor Width - This option allows you to scale your monitor for Power*Curve so you may correlate on-screen wells with hard copy logs that you may have. It is recommended that you take an opportunity to measure the horizontal viewing area of your monitor in inches and then insert that value in the **Monitor Width** field. Be aware, however, that if you adjust the screen width knob on your monitor, this will affect the monitor width setting.

Note: You must restart **Power*Log / Core & Curve** for the **Monitor Width / Height** changes to take effect.

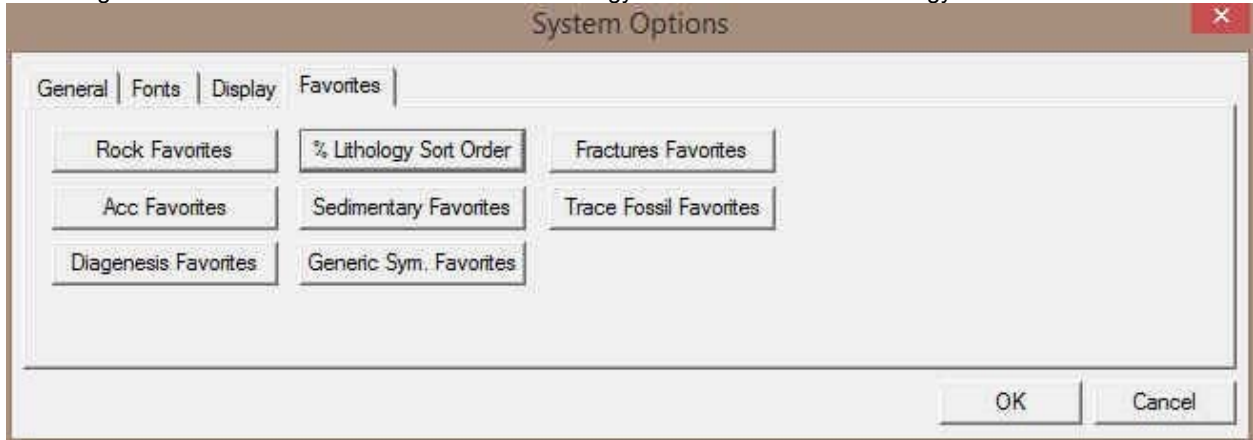
Directional Survey display: Azimuth This drop box option will display your directional surveys on your log in either Quadrant format N 62 ° W) or Azimuth format (AZ 298 °)
 Display TVD check box ☒ when activated will display the survey with TVD values

Display SSL check box ☒ when activated will display the survey with SSL values

☒ Sidewall Core Run and Core No. This check box ☒ when activated will display the Sidewall Core Run & Core numbers above the core triangle indicator on the Sidewall Core layer.

Favorites Tab

This tab allows the user to define their System favorites for all the data categories that support these choices. This tab dialogue also allows the user to access the % Lithology Sort order for the % Lithology Track.



Rock Favorites - Allows the user to determine their favorite **Rock Types** and then displays them in a Toolbox menu generated by the activation of the **Rock Type Builder** window in the **Interpretive Lithology** track. I would not be too concerned about the favorites at this point in time.

- 1.) Click on the **Rock Favorites** button in the **System Options** window, Favorites Tab.
- 2.) You can now **Select** the following **Rock Types** from the **Rock Type Favorites** list window.

Note: Once the category has been highlighted you can start typing in the first and second letters to pinpoint to a specific portion of the list. List is activated by the short name spelling.

Mdst [Mudstone]
Mrlc [Marlstone calcareous]
Sh blk [Shale black]
Sh m gy [Shale medium gray]
Sh brn [Shale brown]
Ss [Sandstone]
Sltst [Siltstone]

- 4.) Click on the **OK** button to return to the System Options window.

Acc Favorites - Allows the user to determine their favorite **Accessories** and then displays them in a pop-up menu generated by the activation of the **Accessory Builder** window in the **Interpretive Lithology** track / layer as well as the Rock Accessories track / layer.

- 1.) Click on the **Acc Favorites** button in the System Options window.
- 2.) Click on the **Clear All** button in the **Accessory Favorites** list window to prepare it for the selection of your **Accessory Favorites**.
- 3.) **Select** the following **Accessories** from the **Thinbed**, **Components**, and **Cement** headings in the **Accessory Favorites** list window.

Note: Once the category has been highlighted you can start typing in the first and second letters to pinpoint to a specific portion of the list. List is activated by the short name spelling.

Thinbed

cht dk pebbles [chert dark pebbles]
pyr nods [pyrite nodules]
sh dk gy stringers [shale dark gray stringers]
sltst stringers [siltstone stringers]
ss stringers [sandstone stringers]

Component

aren [arenaceous]
arg [argillaceous]
calcs [calcareous]
carb [carbonaceous]
foss [fossiliferous]
glauic [glaucinitic]
pl rmns [plant remains]

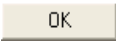
pyric [pyritic]
micmica [micromicaceous]
slty [silty]


Matrix


arg [argillaceous]
kao [kaolinite]

Cement

calcs [calcareous]
sils [siliceous] no maximum

4.) Click on the  button to return to the System Options window.

 - Allows the user to determine their favorite Trace Fossils and then displays them in a pop-up menu generated by the activation of the Trace Fossil Builder window in the Trace Fossil track/layer

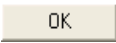
1.) Click on the  button in the System Options window, Favorites Tab.

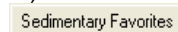
2.) Click on the  button in the **Trace Fossil Favorites** list window to prepare it for the selection of your Favorites.

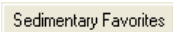
3.) **Select** the following Trace Fossils from the window.

Note: Once the category has been highlighted you can start typing in the first and second letters to pinpoint to a specific portion of the list. List is activated by the short name spelling.

Trace Fossils
Asterosoma
Planolites
Zoophycoes

4.) Click on the  button to return to the System Options window.

 - Allows the user to determine their favorite Sedimentary Structures and then displays them in a pop-up menu generated by the activation of the **Sedimentary Structures Builder** window in the **Sedimentary Structure** track / layer.

1.) Click on the  button in the System Options window, Favorites Tab.

2.) Click on the  button in the **Favorites** list window to prepare it for the selection of your **Favorites**.

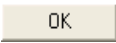
3.) **Select** the following **Sedimentary Structures** from the **Bedding / Cross Bedding, Laminations / Cross laminations**, and **Other** headings in the **Favorites** list window.

Note: Once the category has been highlighted you can start typing in the first and second letters to pinpoint to a specific portion of the list. List is activated by the short name spelling.

Bedding / Cross Bedding
massive [massive / homogenous bedding]
normgrad [normal graded bedding]


Laminations / Cross laminations
clmbrip [climbing ripple cross laminations]
cppxlam[current ripple cross laminations]
wavylam[wavy laminations]

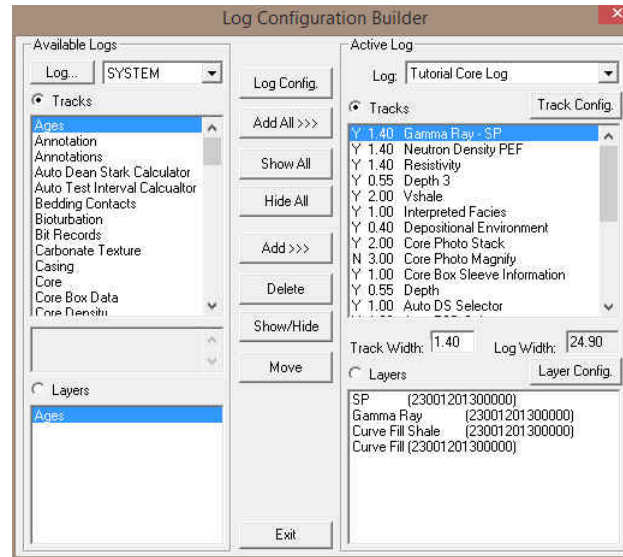
Other
mudchips [mud chips]
root [roots / root trace]

4.) Click on the  button to return to the System Options window.

The Log Configuration Builder window

- This is the heart of the Log/Track/Layer configurations and controls the way your well's information is displayed on the log.
- The well may have a lot of information stored in the database, but that information cannot be shown graphically on the log until the necessary layers are available to illustrate that information.

1. Click on **Log Configuration Builder** under the **Options** menu on the **Selection Bar** or click on the **Log Configuration Builder**  button on the **Toolbar** to activate window:



Fundamentals of the Log Configuration Builder Window

The left side of the Log Configuration Builder window: Available Logs

The **Available Logs** section or **left** side of the **Log Configuration Builder** window allows you to take any track or layer from **Available Logs** and add it to the log you are currently creating/building. On the **left** side of the window, below the **Tracks** radio button ☒ Tracks, is a list of the tracks available for adding to the **Active Log**.

The **Available Logs** section or left side of the window contains the track and layer configuration of the **SYSTEM [SYSTEM]** log, when the window first opens. You have the option of using any of the existing **Tracks** and their associated layers or any of the existing **Layers**, that are associated with any of the system logs in the log database.

The user can click on the **Log...** **SYSTEM** button on the left side of the screen to activate a selection list of all log formats that are in your database. The list is comprised of two (2) names with the first name in the list being the system **Log Name** and the second name (in brackets), being the **UWI** of its primary well. **Double click** on the log format you wish to copy from.

Below the **Layers** radio button ☒ Layers, on the **left** side of the window, is a list of the layers available in the track highlighted above. They will be added all at once, if you add their parent track. However, they can also be added on an individual basis, if you only want to add one (1) layer to an existing **Active Log** track.

The right side of the Log Configuration Builder window: Active Log

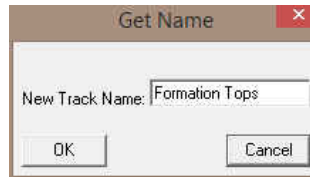
The **Active Log** section or **right** side of the window displays the track and layer configuration of the **Active Log** (the log you are currently creating), in the main **Power*Log** window. The name of the log is viewed in the **Log** field. In this case, it will be "**Tutorial Core Log for Facie Intervals.**" Below the **Tracks** radio button ☒ Tracks, on the **right** side of the window, is a list of the tracks that are currently found within the **Active Log**. The track at the top of this list is drawn on the left side of the log, while the track on the bottom of the list is drawn on the far right of the log with all of the other tracks drawn in between, respectively. Below the **Layers** radio button ☒ Layers, on the **right** side of the window, is a list of the layers that are associated with the track highlighted above.

The middle of the Log Configuration Builder window: Selection Buttons

The **selection** buttons, found in the middle column of the window, are for adding layers or tracks from the **Available Logs** to the **Active Log**, activating/deactivating the **Active Log's** tracks, deleting active log tracks or layers, and moving tracks or layers within the **Active Log** itself. Step-by-step instructions for accomplishing these tasks are provided on the following pages.

Adding a Formation Tops Track to the Tutorial Core Log

- 1.) On the left hand side of the Log configuration window scroll down the list of tracks and **click** on the **Formation Tops** track. The track will become highlighted and the Tracks radio button will become activated.
- 2.) On the right hand side of the Log configuration window **click** on the **Gamma Ray- SP** track. The track will become highlighted and the Tracks radio button will become activated.
- 3.) In the middle of the Log configuration window **click** on the **Add >>>** button. This will activate a System Message asking the user "Do you really want to ADD the selected (track) from the available log to the active log?"
- 4.) **Click** on the **Yes** button. This will activate a Get Name window asking the user to name the track.
- 5.) We will accept the Track Name so **click** on the **OK** button and the track will be added above the Gamma Ray - SP Track or to the left on the log.

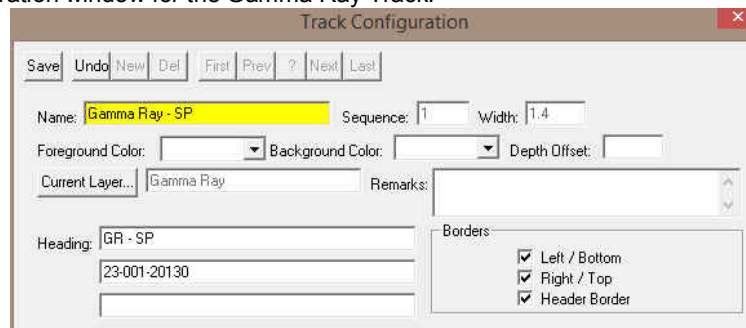


Deleting the Formation Top (Long name and Short name) layers from the Formation Tops track...

- 1.) On the **right** side of the **Log Configuration Builder** window, **click** on the **Formation Tops** track to highlight it. Notice that the layers associated with this track are displayed below, in the **Layers** list box.
- 2.) Highlight the **Formation Top (Long Name)** layer, in the **Layers** list box, by **clicking** on it **once**. Notice that the **Layers** radio button ☒ **Layers** is automatically activated by highlighting a given layer.
- 3.) **Click** on the **Delete** button. This action will prompt you with a system message, **“Do you want to delete the selected layer in your log?”** **Click** on the **Yes** button. The **Formation Tops (Long Name)** layer has now been removed from the log.
- 4.) **Repeat Step 1-3 for removing the Formation Tops (Short Name)**

Configuring the Gamma Ray - SP track...

- 1.) On the **right** side of the **Log Configuration Builder** window, **click** on the **Gamma Ray -SP** track to highlight it.
- 2.) On the **right** side of the **Log Configuration Builder** window, **click** on the **Track Config.** button. This will activate the Track Configuration window for the Gamma Ray Track.



- 3.) In the second heading field, **type** in the location, **“23-001-20130”**. This would help identify the location of the well.
- 4.) **Click** on the **Save** button. This action will prompt you with a system message, **“Record Saved successfully. Do you wish to exit?”** **Click** on the **Yes** button.

Turning off a track...

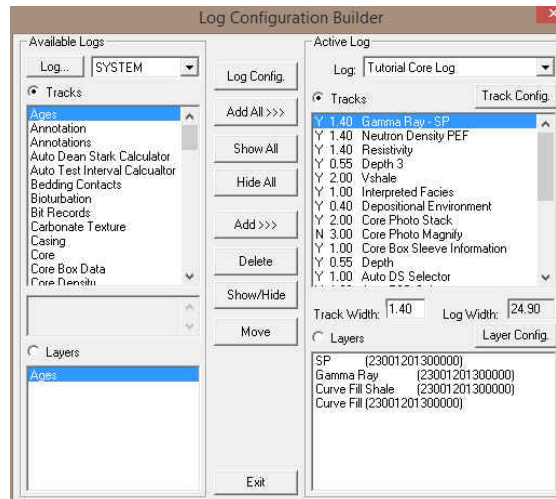
- 1.) Scroll down the tracks list, on the **right** side of the **Log Configuration Builder** window, and **click** on the **Depositional Environment** track.
- 2.) **Click** on the **Show/Hide** button to turn the **“Y”**(yes), to the left of the track name, to **“N”**(no), indicating that the track will not be shown on the log, until it is reactivated.

Resizing some tracks...

- 1.) Scroll down the tracks list, on the **right** side of the **Log Configuration Builder** window and **click** on the **Lithology Description** track.
- 2.) **Double click** in the **Track Width** field and change the track width from 2.00 inches to a new width of **2.5** inches. Then, **press** the **Tab** key and the total width of the log itself will change to reflect the increase in the width of the **Lithology Description** track as well as the Log width field.
- 3.) Scroll up the tracks list, on the **right** side of the **Log Configuration Builder** window and **click** on the **Rock Accessories** track.
- 4.) **Double click** in the **Track Width** field and change the track width from 1.2 inches to a new width of **.95** inches.
- 5.) **Click** on the **Vshale** track. **Double click** in the **Track Width** field and change the track width from 2.0 inches to a new width of **1.4** inches.

Moving the Oil Staining track...

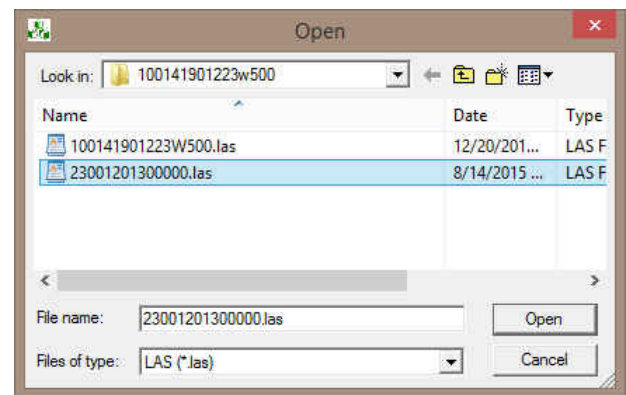
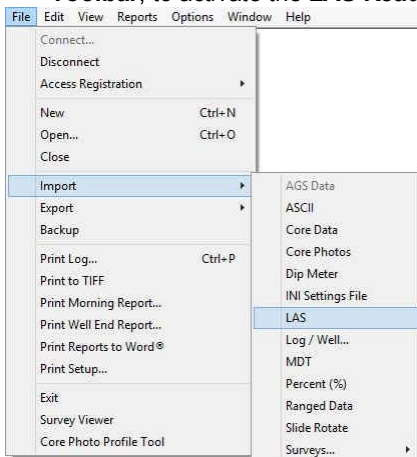
- 1.) On the **right** side of the **Log Configuration Builder** window, and **click** on the **Oil Staining** track to highlight it.
- 2.) **Click** on the **Move** button and it will change to **Move Start** button. Then, **click** on the **Physical Structures** track. The **Oil Staining** track will then be placed above the **Physical Structures** track (to the left of the **Physical Structures** track on the log).



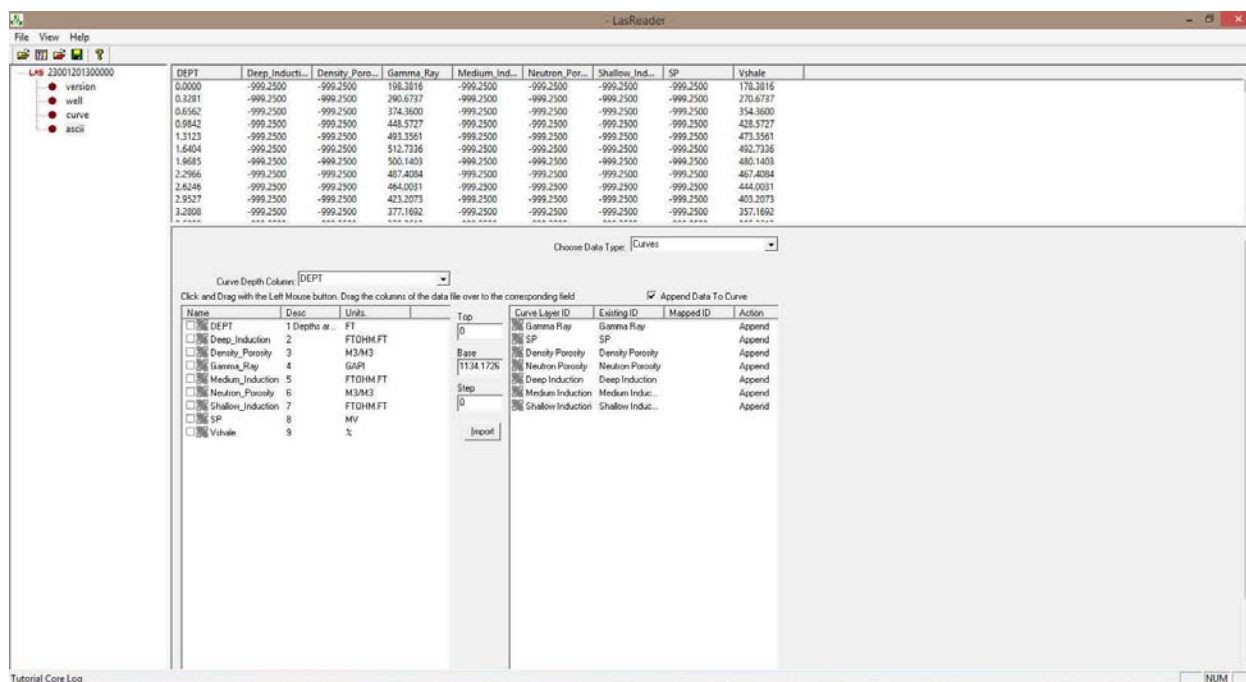
17.) Click on the **Exit** button. This will close the builder and the log will reflect all the changes you just made.

Importing LAS Curve Data

1. Click on the **File** pull down menu selection and click on **Import** and then click on **LAS** from the pop out-menu or simply click on the **LAS** button, on the **Import Toolbar**, to activate the **LAS Reader** window.



2. This will then activate the Open window which allows the user to select the LAS file you wish to import the data from. You can find the file in the PowerSuite_2016\System\100141901223W500\230012013000000.las and highlight the file by clicking on it once and then click on the **Open** button. You will see the window shown below. We will default to the importing of Curve data.



Overview of window

The **left hand side** of the **LAS Reader** window (shown on the right) allows the user to see the tree view of the data file format including the different data, parameter and definition blocks. The tree enables the user to select different sets of data or definitions. We have the choice to import these data types into the predefined data sets such as curves, Inclineretry, Tests, Tops and Core Data within the Power*Suite application. We default the window to select the log data or curve data if it is available

The **upper right hand side** of the **LAS Reader** window (shown below) allows the user to see the data associated with the different data and parameters and definition blocks.

DEPT	CNTC	HNPO	AT10	DIP_APP	AO60	PEF8	TT4	DS08	PEFZ	ATCO90	TNPH_SAN	C1	HNPO_DOL	HDEV	DP
0	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-99
0.32808	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-99
0.65616	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-99
0.98424	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-99
1.31232	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-99
1.6404	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-99
1.96848	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-99
2.29656	2074.46583	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-99
2.62464	1645.84017	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-99
2.95272	1707.42817	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-999.25	-99

The **bottom left hand side** of the LAS Reader window (Shown below left) displays the curve data sets that available to be imported. These can then be dragged to the import side of the LAS reader.

Name	Desc	Units
<input type="checkbox"/> DEPT	Depth Curve	FT
<input type="checkbox"/> CNTC	HGNS-B	2IN CO...
<input type="checkbox"/> HNPO	HGNS-B	2IN EN...
<input type="checkbox"/> AT10	AIT-H	3IN ARR...
<input type="checkbox"/> DIP_APP	DIPP APPERTURE	DEGA
<input type="checkbox"/> AO60	AIT-H	3IN ARR...
<input type="checkbox"/> PEF8	HDRS-B	2IN HI...
<input type="checkbox"/> TT4	DSLTH	2IN TR...
<input type="checkbox"/> DS08	HDRS-B	2IN HI...

Curve Layer ID	Existing ID	Mapped ID	Action
<input type="checkbox"/> Gamma Ray	Gamma Ray		Append
<input type="checkbox"/> SP	SP		Append
<input type="checkbox"/> Density Porosity	Density Porosity		Append
<input type="checkbox"/> Neutron Porosity	Neutron Porosity		Append
<input type="checkbox"/> Deep Induction	Deep Induction		Append
<input type="checkbox"/> Medium Induction	Medium Induction		Append
<input type="checkbox"/> Shallow Induction	Shallow Induction		Append

The **bottom right hand side** of the LAS Reader window (shown above right) shows the Import side displaying the Curve Layers and Curve names associated with the log that is open and active at the time the LAS Reader window was invoked.

Importing LAS Curve Data files

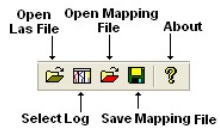
Curve Depth Column: DEPT

Click and Drag with the Left Mouse button. Drag the columns of the data file over to the corresponding field ☒ Append Data To Curve

Name	Desc	Units	Top	Base	Step	Curve Layer ID	Existing ID	Mapped ID	Action
<input checked="" type="checkbox"/> GR	HGNS-B	6IN	CA...	GAPI		Gamma Ray	Gamma Ray	GR	Append
<input type="checkbox"/> AO30	AIT-H	3IN	ARR...	FTOH		SP	SP	SP	Append
<input type="checkbox"/> AO10	AIT-H	3IN	ARR...	FTOH		Density Por...	Density Porosity	DPHI_SAN	Append
<input type="checkbox"/> HTEM	HGNS-B	6IN	CA...	DEGC		Neutron Por...	Neutron Porosity	NPOR_SAN	Append
<input type="checkbox"/> HNPO...	HGNS-B	2IN	EN...	M3/M		Deep Induct...	Deep Induction	AT90	Append
<input checked="" type="checkbox"/> NPOR...	HGNS-B	6IN	EN...	M3/M		Medium Ind...	Medium Induc...	AT30	Append
<input checked="" type="checkbox"/> AT30	AIT-H	3IN	ARR...	FTOH		Shallow Ind...	Shallow Induc...	AT10	Append
<input checked="" type="checkbox"/> SP	AIT-H	6IN	SPD...	MV					
<input type="checkbox"/> RHOZ	HDRS-B	2IN	ST...	KG/M					
<input type="checkbox"/> HCAL	HDRS-B	1IN	CA...	MM					

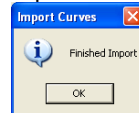
Top: 0
Base: 1134.17256
Step: 0.32808
Import

- On the lower left side of the window **Click and drag** the **SP** curve to the **SP** layer on the lower right side and release it when the layer becomes highlighted.
- You can repeat for the clicking and dragging for all the curve layers as shown above. Or you can open the mapping file that has been save for you by clicking on the Open mapping file button on the toolbar and selecting the "tutorial las mapping file.cvm" from the PowerSuite_2016\System\100141901223W500\ Folder.



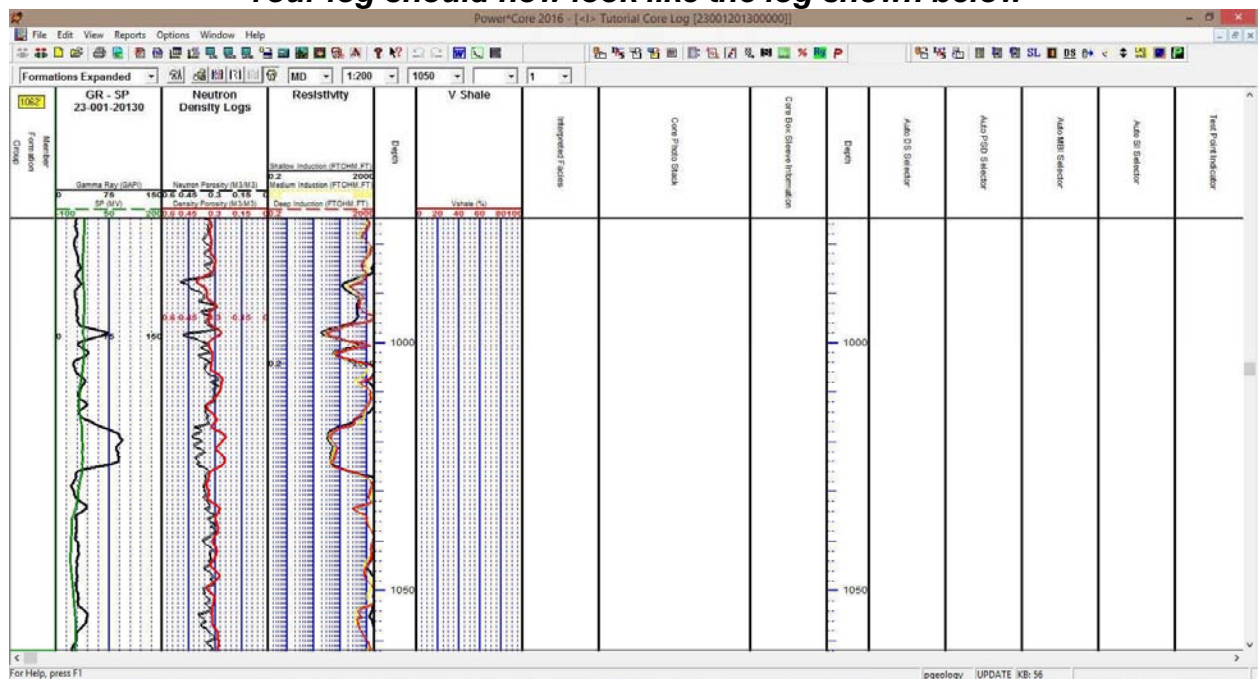
N.B. The user can **Right click** on the **Curve Layer ID** to remove the mapping or switch the action from append to replace. The Symbol color will either be purple for replace or blue for append.

- The user can save this mapping procedure at this time by **clicking** on the button or **click** on the **File** menu and **Select the Save map file** option and giving this procedure a file name and folder to be used again at a later date when you would have to import similar LAS Curve data again.
- Click** on the **Import** button. You will then be prompted with a system message after the import has finished.

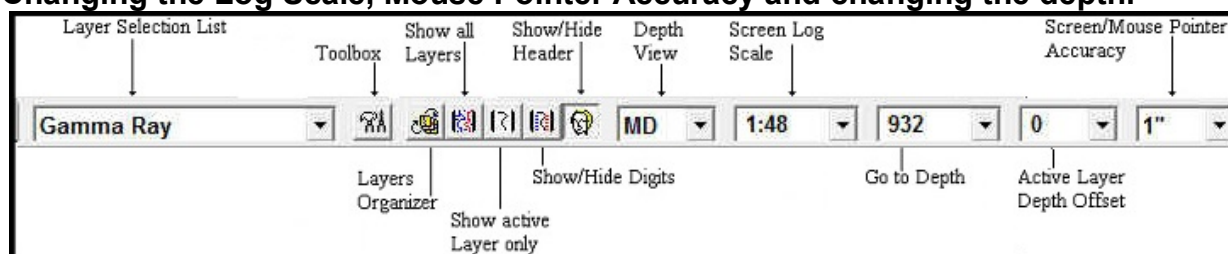


- Acknowledge** the Finished Import message. **Click** on the **OK** button and then **click** on the button to exit or **click** on the **File** menu and **select the Exit** option to close the LAS Reader Window.

****Your log should now look like the log shown below****



Changing the Log Scale, Mouse Pointer Accuracy and changing the depth.

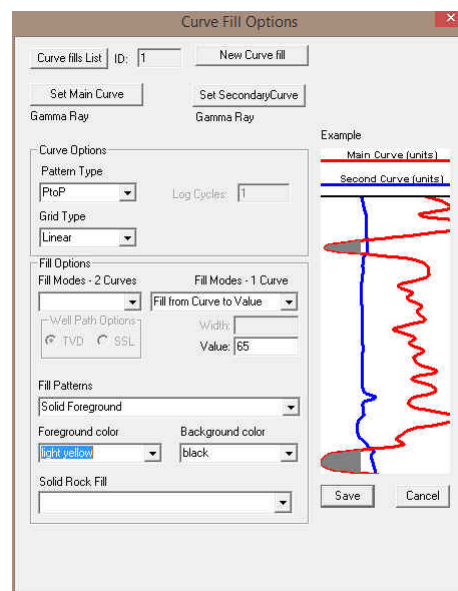


- 1.) Click on the **Screen Log Scales** drop box and **select 1:48**. This will make your screen or monitor log scale represent your log at a 1:48 depth scale. The user can type any scale in here between 1:1 and 1:5000.
- 2.) Click on the **Screen/Mouse Pointer Accuracy** drop box and **select 1"**. This will make your mouse pointer accurate down to the inch.
- 3.) Click in the **Go to Depth** field and **type in 932** and then **press the Tab Key** on your keyboard to place 932 at the top of your Screen. The user can scroll up or down by using your mouse roller button or use the Scroll bars on the left side of the log. Arrow goes ¼ page, area between thumb and arrow full page. Thumb will not work.

Setting up two Curve Fill layers with their options.

To work with any layer the user must first select the layer from the Selection list. To set the Curve Fill Options the user must first make the Curve Fill Layers active.

- 1.) Click on the **Gamma Ray - SP Track** containing the first Curve Fill layer and then **select the Curve Fill layer** from the **Layer Selection List** field at the far left of the **Selection Bar**.
- 2.) **Double click** anywhere within the **Curve Fill** layer or **click on the Toolbox** button beside the layer selection list to activate the **Curve Fill Options** window. An example is shown on the right.
- 3.) Click on the **Set Main Curve** button. This will activate a list of curves associated with this well.
- 4.) Click on the **Gamma Ray** and then **click on the Select** button or **double click on the Gamma Ray Curve**. You will view the curve name below the **Set Main Curve** button.



Curve Options Portion of the Window.

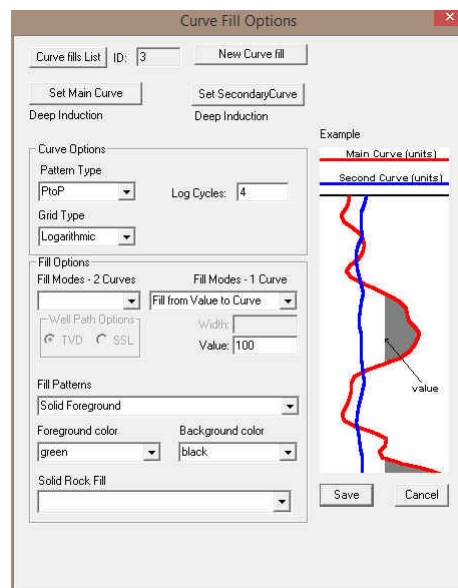
- 5.) Click on the **Pattern Type** down arrow and **select the correct curve pattern** for the main curve. The Gamma Ray Curve is defaulted to PtoP (Point to Point).
- 6.) Click on the **Grid Type** down arrow and **select the correct curve grid type** for the main curve. The Gamma Ray Curve is defaulted to Linear.






Fill Options 1 (One) Curve Portion of the Window.

- 7.) Click on the **Fill Modes – 1 Curve** down arrow and **select the Fill from curve to a value**.
- 8.) **Type in 65** in the **Value Field**
- 9.) Click on the **Fill Patterns** down arrow and **select Solid Foreground**.
- 10.) Click on the down arrow beside the **Foreground Color** and **select Light Yellow**.
- 11.) Click on the **Save** button. The Curve Fill Options window will close and the changes you have made will be shown on the layer.
- 12.) Click on the **Layer Selection List** one last time and **select the Gamma Ray Curve Layer** to make it active. This will also display the grid pattern on the track.

Setting up the Second Curve Fill layer.


- 1.) Click on the **Resistivity Track** containing the second Curve Fill layer and then **select the Curve Fill layer** from the **Layer Selection List** field at the far left of the **Selection Bar**.

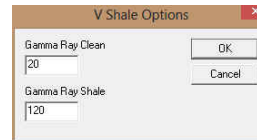


- 2.) **Double click** anywhere within the **Curve Fill** layer or **click** on the **Toolbox**  **button** beside the layer selection list to activate the **Curve Fill Options** window. An example is shown on the next page.
 - 3.) **Click** on the **Set Main Curve**  **button**. This will activate a list of curves associated with this well.
 - 4.) **Click** on the **Deep Induction** and then **click** on the **Select**  **button** or **double click** on the **Deep Induction Curve**. You will view the curve name below the **Set Main Curve**  **button**.
- Curve Options** Portion of the Window.
- 5.) **Click** on the **Pattern Type** **down arrow** and **select** the correct **curve pattern** for the main curve. The Deep Induction Curve is defaulted to PtoP (Point to Point).
 - 6.) **Click** on the **Grid Type** **down arrow** and **select** the **Logarithmic grid type** for the Deep Induction curve.
 - 7.) The Log Cycles should be 4. If it is not **type** in **4** in the **log cycles** field.
- Fill Options** 1 (One) Curve Portion of the Window.
- 8.) **Click** on the **Fill Modes – 1 Curve** **down arrow** and **select** the **Fill from value to a curve**.
 - 9.) **Type** in **100** in the **Value Field**
 - 10.) **Click** on the **Fill Patterns** **down arrow** and **select** **Solid Foreground**.
 - 11.) **Click** on the **down arrow** beside the **Foreground Color** and **select** **Green**.
 - 12.) **Click** on the **Save**  **button**. The Curve Fill Options window will close and the changes you have made will be shown on the layer.
 - 13.) **Click** on the **Layer Selection List** one last time and **select** the **Deep Induction Curve Layer** to make it active. This will also display the grid pattern on the track.

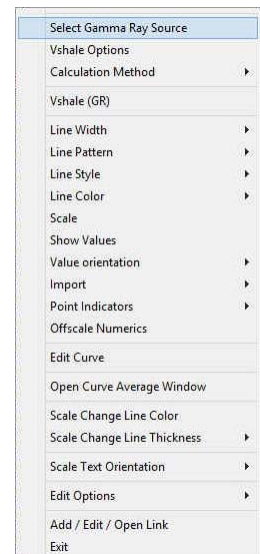
Setting up the Vshale layer / track.

If the Vshale Curve is being displayed move on to the next section of the tutorial. You do not have to select this layer first as it is the only layer associated with this track.

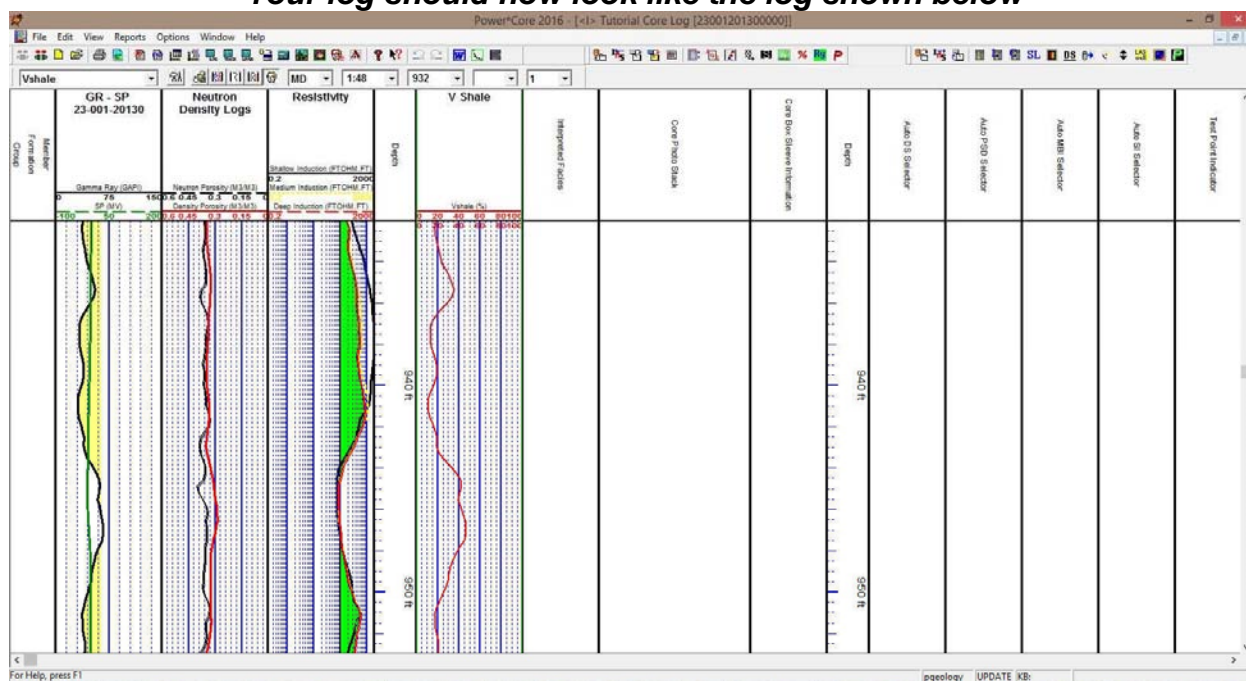
- 1.) **Right Click** on the **Vshale track / layer**. This will activate the pop out menu and **Select** the **Select Gamma Ray Source**. This will activate a list of curves associated with this well.
- 2.) **Select** the **Gamma Ray Curve** by **Double clicking** on the **Gamma Ray** or **click** on the **Gamma Ray** and then **click** on the **Select**  **button**. This will display the calculated V shale using the Index method. You can select different calculation methods by clicking on the Calculation Method and selecting different methods.
- 3.) You may want to adjust the values for clean Shale and Clean Sand Readings. **Right Click** on the **Vshale curve layer** to activate the pop out menu and **Select Vshale Options**. This will activate the Vshale Options window. In this tutorial we suggest you use **20** for clean and **120** for Shale.



The user has the ability to utilize all the Curve layer functions on this track by right clicking. We also have a **Vshale layers** from Porosity Calculations and a layer to show the minimum Vshale values for both the GR and POR curves.



****Your log should now look like the log shown below****



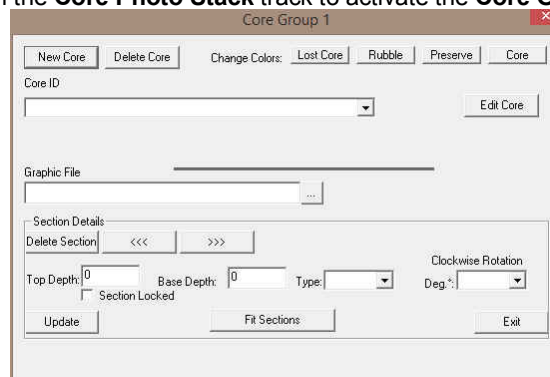
Adding Core Photos to the Core Photo Stack Layer / Track.

This layer allows the user to insert cropped Core Photos from their individual rows in boxes to be lined up in this layer.

These pictures can be done individually or imported. For the sake of this tutorial you will be importing them. But we will attempt to show you how one is done manually and then we will import the photos. We will start with a Core in the middle of the Cored Section it will be shown on the log if your top view is at 932.

Manual Entry of Core Photo to Stacking Layer.

- 1) **Double click** anywhere within the **Core Photo Stack** track to activate the **Core Group builder** window.

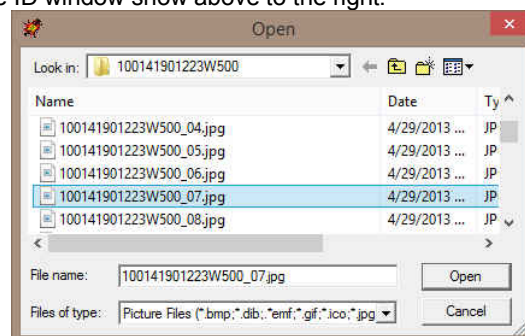


- 2) **Click** on the **New Core** button. This will activate the New Core ID window show above to the right.
- 3) **Type** the **10** into the **Core ID** field.

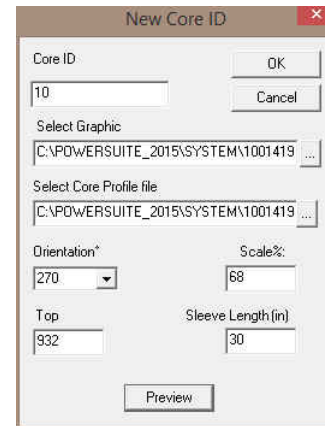
- 4) **Click** on the **...** button beside the Select Graphic file. **This will activate an Open File window.**
- 5) **Select** the **100141901223W500_07.jpg** file from the **PowerSuite_2016\System\100141901223W500** folder and

Click on the **Open** button this will fill in the Core ID window with the Core Photo to be cropped.

- 6) **Click** on the **...** button beside the Select Core Profile file. This will activate an Open File window and **select bottom 2**



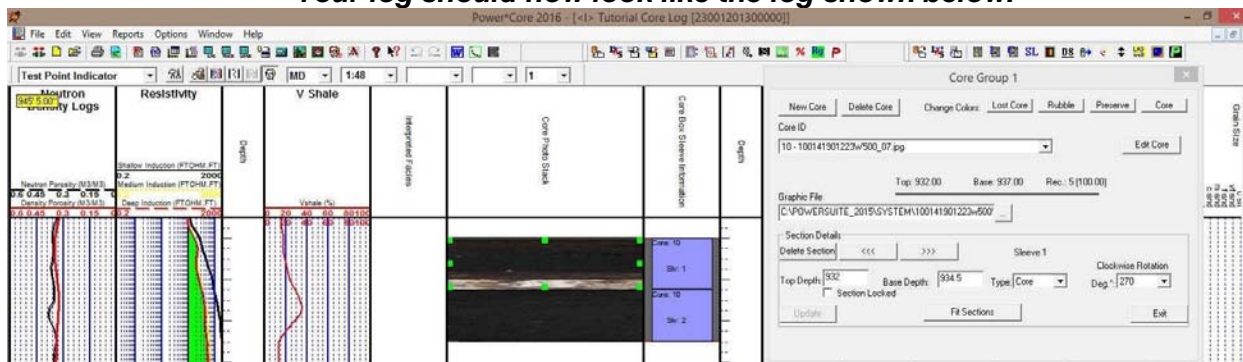
Open



-

- Split
- Lock Section
- Remove all Locks'
- Core
- Empty
- Slough
- Rubble
- Rubble Removed
- Preserved
- Lost Core Mode: Create
- ☒ Scaled View
- Delete Core
- Add Lost Core to Lithology
-
- Toggle Magnify View
- Edit Options
- Add / Edit / Open Link
- Exit

****Your log should now look like the log shown below.****

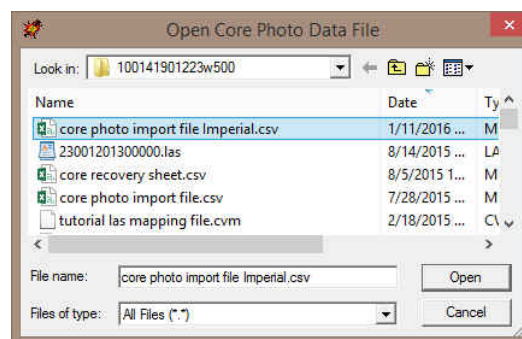
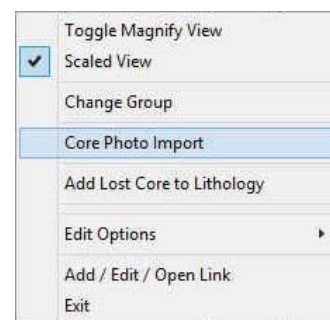
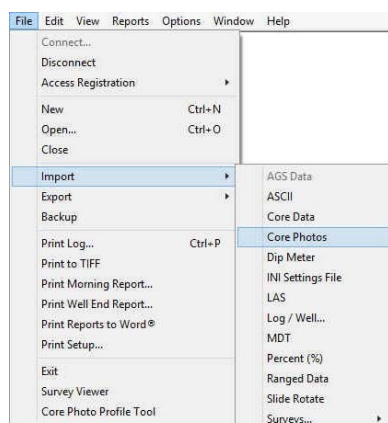


Importing of Core Photos from a file to the Core Photo Stacking Layer / Track.

This method will allow the user to import ASCII or csv file formats into our database. We cannot import xls or any other type of spreadsheet format. If the data comes that way you must resave it in another format before attempting to import the data. The actual core photos are not imported into the database. With MS Access the database is limited to 2GB and core photos can be up to 60MB each. This would seriously hinder the amount of data so we need to have the files stored on the hard drive of the computer. You will need a **Core #, photo name and location, photo cropping template and location, Core top, Sleeve Length, and scale** of the picture in a file. If a single core stretches itself over to 2 core photos then the above information will have to be re-entered with the same core number and two entries in the formatted data.

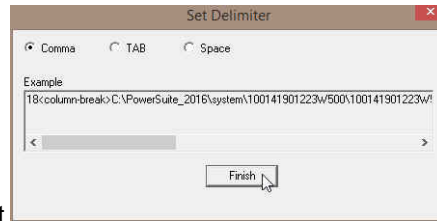
How to Import Core Photos

- To access the Core Photos Import window, click on **Import** under **File** to activate the pop-out menu and then select **Core Photos** or click on the **Import Core Photos Icon** on the **Import Toolbar**. This will activate the open Core Photo data file window as shown below. Or you can **right click** on the **Core Photo Stack layer** and select the **Core Photo Import** Option.

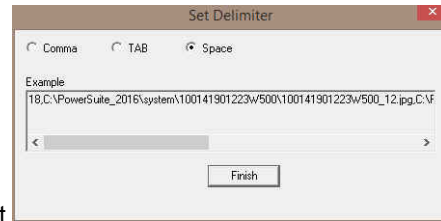


- Select **"core photo import file Imperial.csv"** from the PowerSuite_2016\System\100141901223W500\ folder and either **double click** on the **file name** or **click once** on the file name and **click** on the **Open** button. This will activate the **Set delimiter** window as shown below. You can check out the file format by opening this file in MSXL.

N.B. The one on the left the delimiter is set correctly the one on the right the delimiter is set incorrectly.

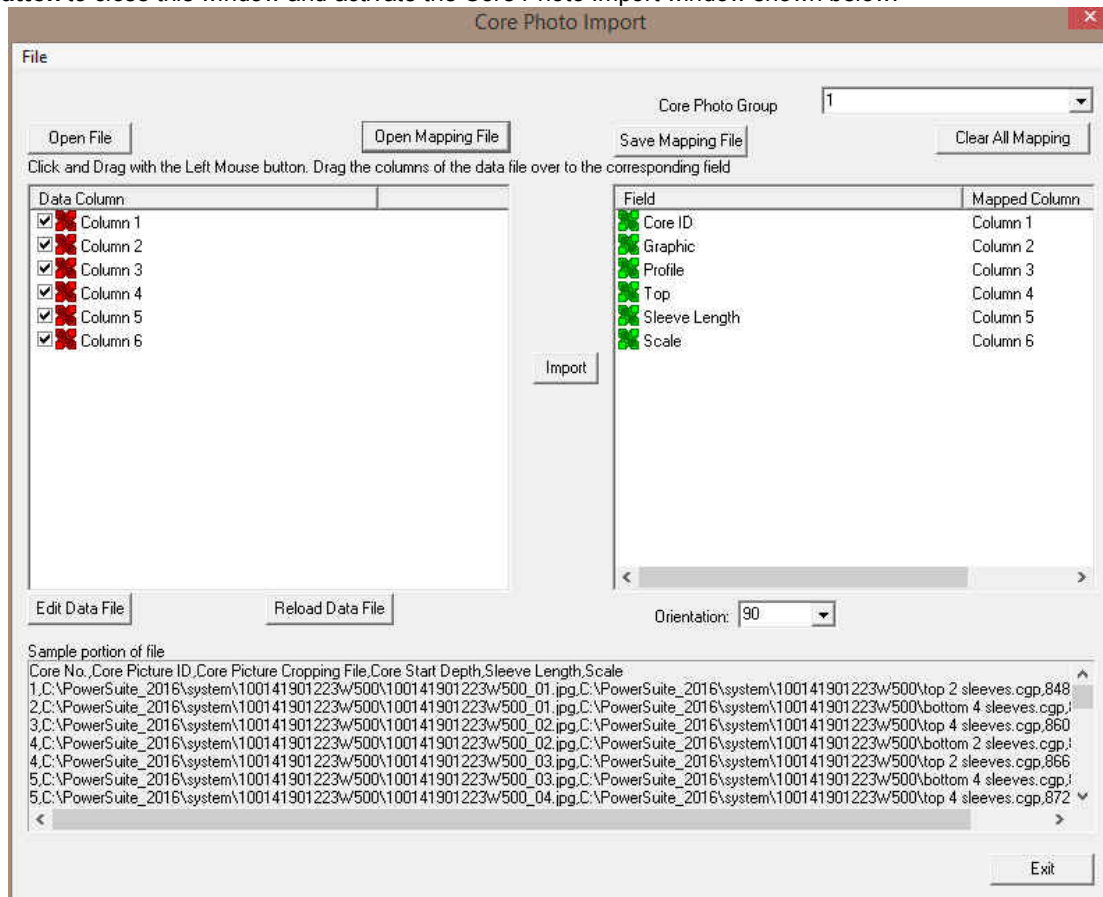


Correct



Not Correct

- Highlight the correct corresponding ☒ button beside Comma, TAB or Space delimiter (if shown correctly the Example should read <column-break> between the data columns. If you see this then **click** on the **Finish** button to close this window and activate the Core Photo Import window shown below.




The **left hand side** of the **Core Photo Data Import window** allows the user to view the different data columns represented in the file numbered in ascending order.

The **right hand side** of the **Core Photo Data Import window** allows the user to see the data fields associated with the Core Photo Data Table supplied by Power*Suite.

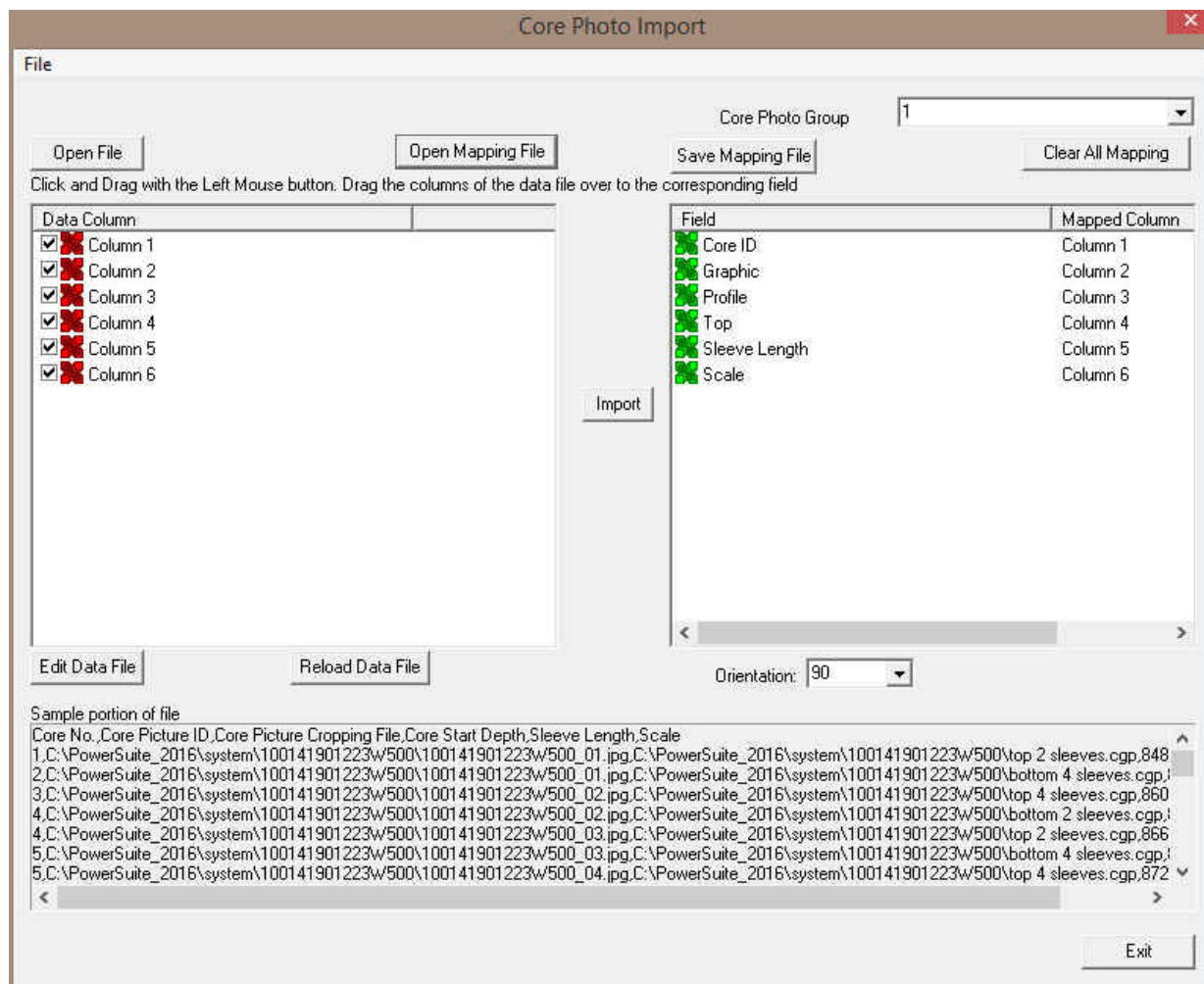
The **Open Mapping File** Button allows the user to utilize the mapping file saved from above to remap data columns in the survey file to database fields in the survey point table in the database. **You do have one in the same folder if you do not want to click and drag each column over. Click on the **Open Mapping File** button and select "tutorial las mapping file.cvm".**

Importing / Mapping of Core Photo data.

- On the **left side** of the window **Click and drag** the **data column** you wish to import to the corresponding **table field on the right side** and release it when the field becomes highlighted. If mapped the field  will turn green on the right and red on the left.

N.B. The user can **Right click** on the **Field** to remove the mapping.

- Repeat the Clicking and Dragging of data columns to fields until all the columns that you want have been mapped.

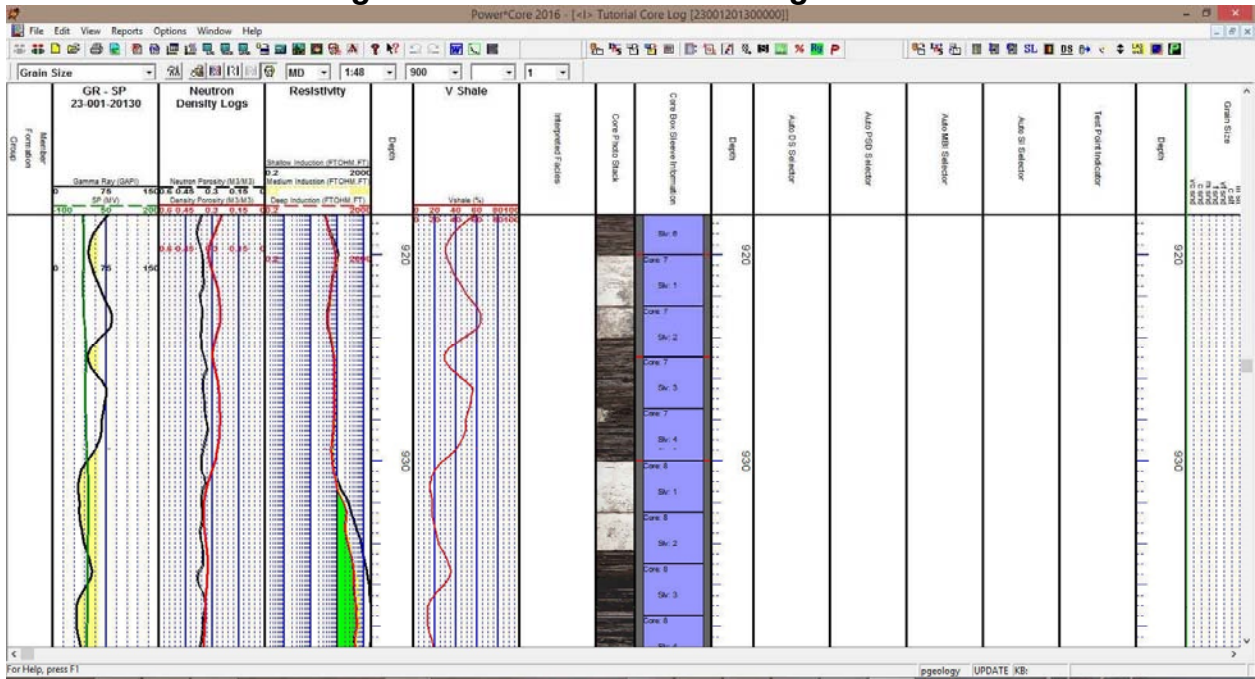


3. Click on the **Import** button. After the data has been imported you will be prompted with a system message.



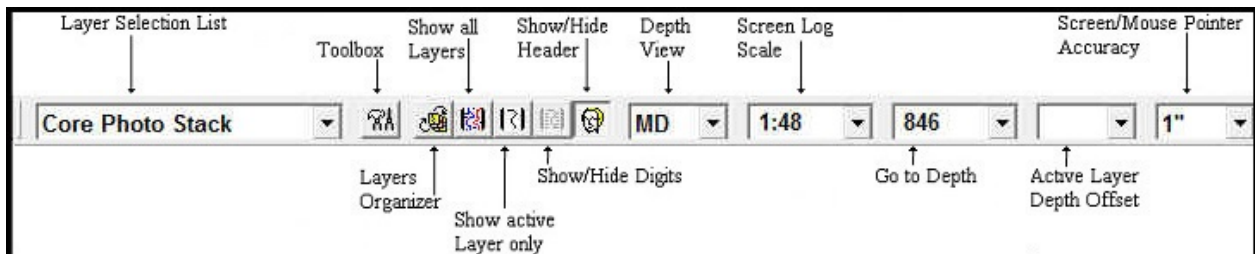
4. **Acknowledge** the Import message. Click on the **OK** button and then click on the to exit or click on the **Exit** button to close the Window and your core photos will be stacked at the depths entered into this window.

****Your log should now look like the log shown below****



Editing the Core Photo Stack Layer.

This layer enables the user to display the Core Photo sleeves that have been cropped from Core Box photos generated by a photographer. The Core photos are displayed on the stacked layer and the sleeve data can be viewed on the sleeve data display layer. Another track that is added when you add this track will give you a magnification for the core sleeves to zoom in on a particular contact or feature that you wish to magnify without having to change the log viewing scale. These photos can be added individually or can be imported by way of an ASCII file with the correct information. Once the photos are displayed they can be moved as a group, moved individually, split, rotated, deleted, indicate rubble and or slough and can be locked to a depth and more specifically can be depth corrected to log data. Once these pictures have been depth corrected on a Facies log and the Facies have been identified then the user can use the automated Dean Stark test intervals can be run along with the automated Test Interval Selector and the Test Point selector to indicate the test intervals for the Core Laboratories to run their test interval. This data can be exported in an ASCII format for ease of testing.



- 1.) Click on the **Screen Log Scales** drop box and **select 1:48**. This will make your screen or monitor log scale represent your log at a 1:48 depth scale. The user can type any scale in here between 1:1 and 1:5000.
- 2.) Click on the **Screen/Mouse Pointer Accuracy** drop box and **select 1"**. This will make your mouse pointer accurate down to the centimeter.
- 3.) Click in the **Go to Depth** field and **type in 846** and then **press the Tab Key** on your keyboard to place 846 at the top of your Screen. The user can scroll up or down by using your mouse roller button or use the Scroll bars on the left side of the log. Arrow goes ¼ page, area between thumb and arrow full page. Thumb will not work.

This will place Core # 1 near the top of the screen. It has to be depth corrected as the top of the core has to be depth corrected to **848 feet 2 inches (848' 2")**.


Editing the Core (Moving all of the sleeves of all the Cores)


This would be done if the Cores have to be depth corrected to match Wireline log or if you have it an imaging tool data. All of this manipulation must be done with the mouse pointer. **All the continuous Cores will be moved** and

the Gaps between Cores will be modified until they are continuous and then moving will commence with these instructions.

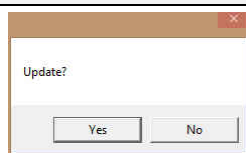
The User may now wish to turn on the **Mouse Hair** (this will be a Horizontal Line following the mouse pointer. With the line on you have a better ability to depth correct to the Well Logs. To turn on the Mouse Hair **Click** on the **View Menu** Selection and **Select** the **Mouse Cross Hairs** from the resulting pull down menu.

We will start the depth correcting from the top of the Cored Interval and work our way down. It is probable the way most cores should be depth corrected as the most common lost core is from the bottom of the cored interval.

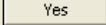
1. **Double click** anywhere within the **Core Photo Stack track** to activate the Core Group window.
2. **Click** on any of the any **Core Sleeves in the Core** in the area. Your selection will be shown in the Core Group Window and will become highlighted with the resizing boxes.
3. **Move Mouse pointer inside the sleeve selected**  and then hold the **CTRL Key down on your keypad** and then **Click and Drag** (with the mouse pointer) **the sleeve up** (you will view the outline of the sleeve moving as


well as the depth difference as viewed in the yellow tracker  [top left corner of screen]) and **release the mouse button**. This will activate an Update message.

In this case I clicked in the exact spot where the contact was. This is not necessary as long as the movement was 1' 10" difference up.



Note: The difference in the drag will be the moved distance of the Cores. In this case all the cores were moved up 1' 10". So the top number is the start of your drag and the bottom number is the new depth that you have dragged to.

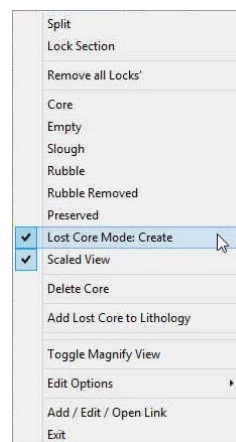
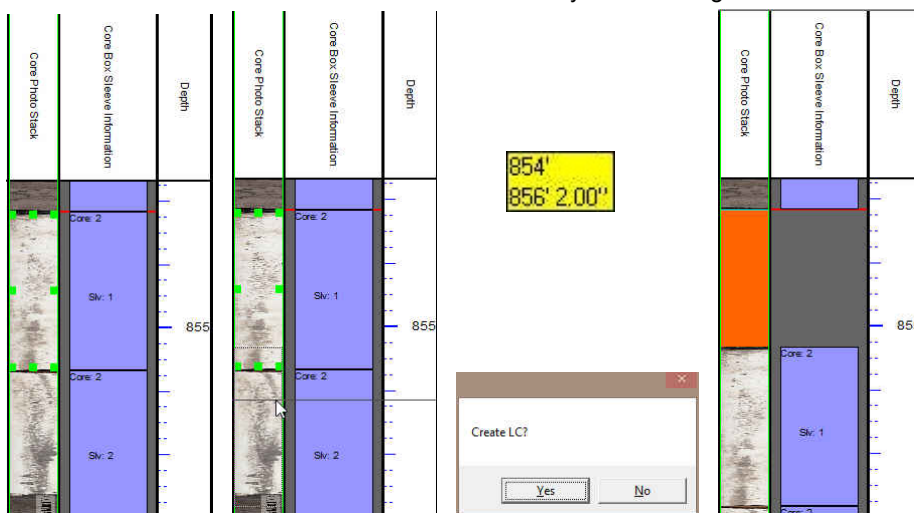
4. **Click** on the  **button**. This will move all the cores up or down depending on your drag.

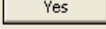
Note: If you happen to do something wrong remember you have an **UNDO** under the **Edit Menu** selection. Also there is an  button on the Toolbar.


Editing the Core Photos (Adding lost Core)

This would be done if the Core Recovery is not full. All of this manipulation must be done with the mouse pointer. According to the depth correction table on page 37 the base of Core 1 sleeve 2 should be 853' 2" and there is a lost core interval below that from 853' 2" to 855' 4". **Right Click** on the **Core Photo Stack layer** to ensure the Lost Core Mode: Create mode is activated.

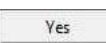
1. Now, **Hold down the Shift key** on the keyboard and **Click and drag down** on **Sleeve 1 Core 2** which will become highlighted with the resizing boxes and you will see an outline of the sleeve moving down.
2. **Move** the outline of the **sleeve down** until you see a difference in the mouse pointer box of **2' 2"** **release the mouse button**. This activate a System message. **Create LC?**



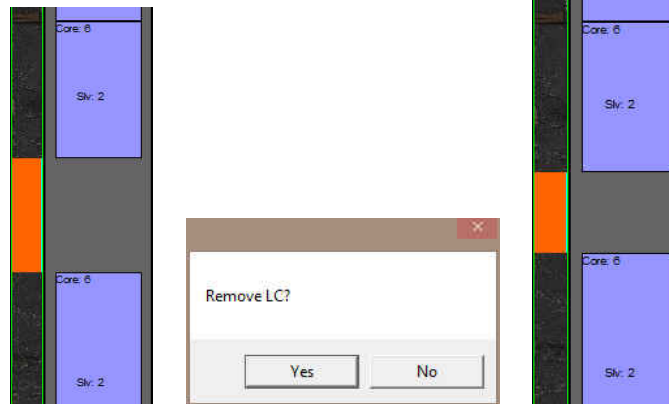
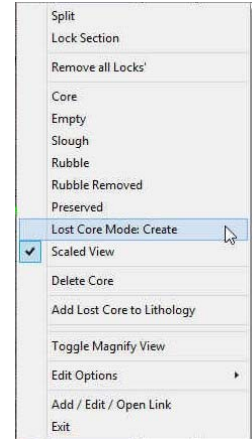
3. Click on the  **button**. This will create a lost core interval (a colored space) from 853' 2" to 855' 4" as illustrated above.

Note: If you happen to do something wrong remember you have an **UNDO** selection under the **Edit Menu** selection. Also there is an  button on the Toolbar.

Editing the Core Photos (Removing Lost Core).

1. **Double click** anywhere within the **Core Photo Stack track / layer** to activate the Core Group window.
2. **Right click** on the Core photo stack layer to see if the **Create Lost Core** menu item is **unchecked**.
3. **Hold the Shift Key down** on your keypad and **Click and drag up on the sleeve** below where the lost core was created. This will activate a System Message "Remove LC?"
4. Click on the  **button**. This will decrease the lost core interval (indicated by a colored space) within the photos and will decrease indicating less Lost Core.

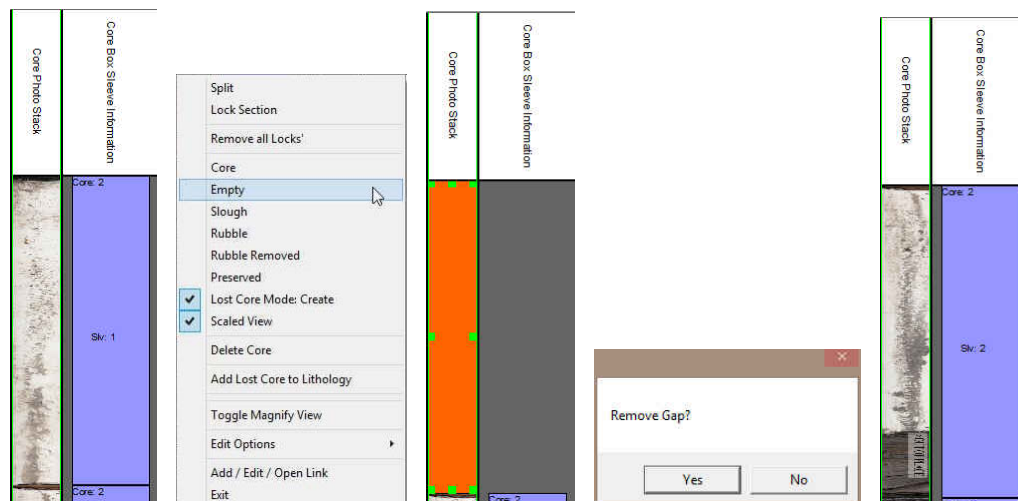
(Undo  will be your friend to retrieve the record.)



Editing the Core Photos (Emptying a portion or all of a sleeve).

This would be done if a sleeve is empty or partially empty. Most of this manipulation can be done through the builder or with the right click of your mouse at a specific depth. Depending on your log scale you may have to Scroll down to be able to view a depth of 855' on your screen.

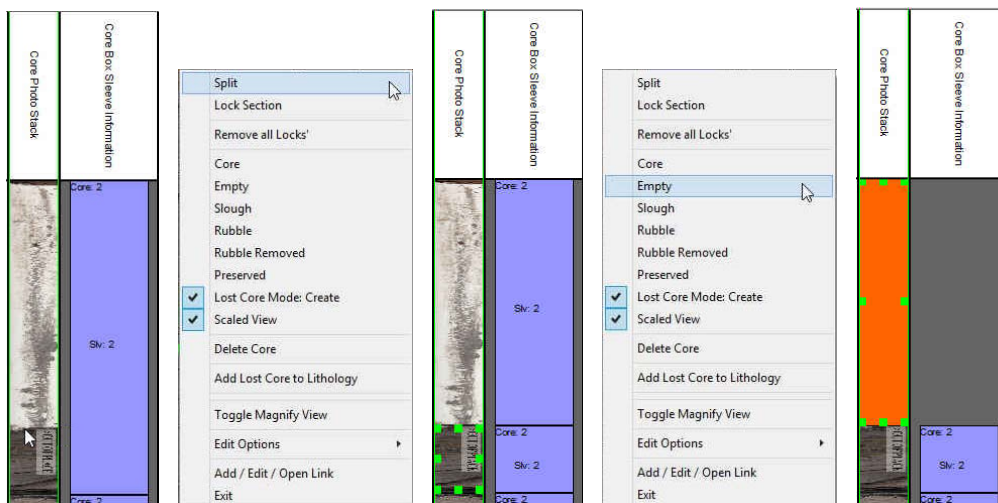
1. **Right Click** on the **Sleeve Core 2 sleeve 1** and select empty from the pop our menu. This will remove the sleeve from the cored interval. . This will remove the sleeve from the core but remember it in the sleeve record table. And bring up a "Remove Gap?" Message.



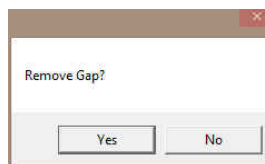
2. Click on the button. This will bring up all the underlying core intervals that are consecutive to fill in the gap created by the empty sleeve.

(Undo  will be your friend to retrieve the record.)

3. **Right Click** on the **Sleeve Core 2 sleeve 2 at a depth of 857' 3"** and select split from the pop our menu. This will split the sleeve 2 and highlight the upper Sleeve 2.




4. **Right Click** on the upper **empty Core sleeve 2** and **select Empty**. This will remove the sleeve from the core but remember it in the sleeve record table. And bring up a "Remove Gap?" Message.



5. Click on the button. This will bring up all the underlying core intervals that are consecutive to fill in the gap created by the empty sleeve picture.
6. Repeat Steps 3-5 for all subsequent Cores to get rid of empty (full or partially empty tubes) for all 31 Cores.

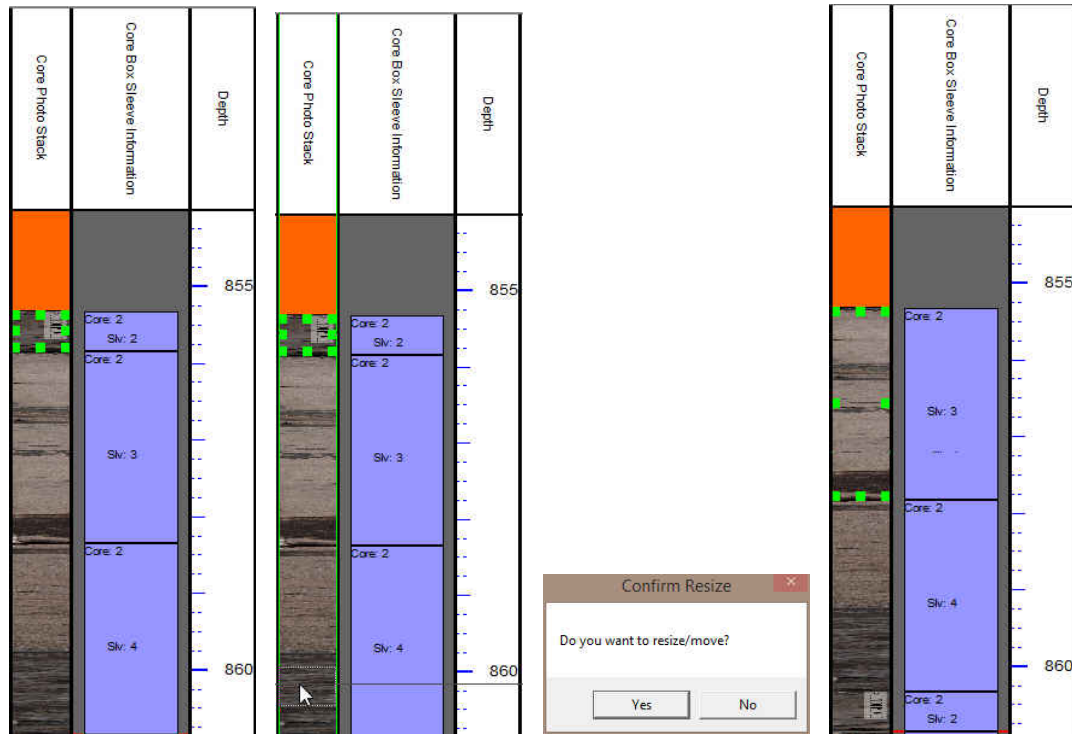
Note: The User can also use the builder to manipulate the Cores. Splitting can only be done on the right click on the Core Photo Stack Layer.

Note: If you happen to do something wrong remember you have an **UNDO** under the **Edit Menu** selection. Also there is an  button on the Toolbar.


Editing the Core Photos (Moving a sleeve within a cored interval).

This would be done if a sleeve has been misplace during the retrieval or core photography. In this example sleeve 2 is out of place and should be down below sleeve 4.

1. **Right Click** on the **Sleeve Core 2 sleeve 2 and drag** the sleeve down into **sleeve 4** and release the mouse button. This will bring up a "Do you want to resize / move?" Message.



2. Click on the button. This will move sleeve 2 below sleeve 4.

If you drag a sleeve up then the sleeve will go above the sleeve to drag it to and vice versa (as in this example) if you drag a sleeve down it will go below the sleeve you drag it to. (Undo  will be your friend to retrieve the record.)

Editing the Core Photos (Emptying, Splitting, Creating lost core in the middle and the base and resizing the existing sleeves to the corrected depth).

This will be done within Core # 3. As per the Core Recovery Sheet on page 37 following this section we have lost core from

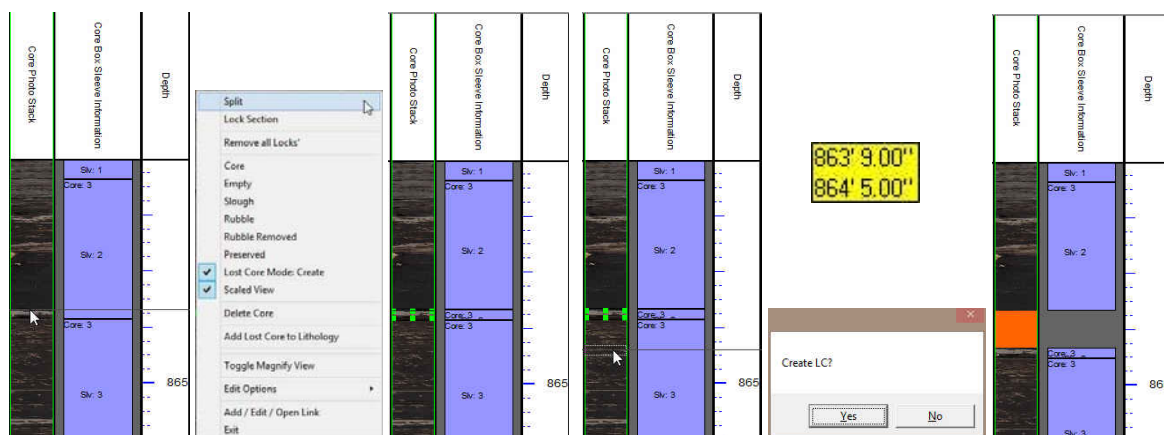
Core # 3	Core Interval 850' 9" to 870' 5"	Lost Core Interval 863' 8" to 864' 4"
		Lost Core Interval 869' 6" to 870' 5"

1. If this has **already be done** skip to step 4 to create lost core, or **Right Click** on **Core 3 sleeve 1 at 861' 10"** and **select split** from the pop out menu. This will split the photo where the empty portion of the tube hits the core.
2. **Right Click** on **Core 3 upper sleeve 1** and **select empty** from the pop out menu. This will initiate the removal of the sleeve from the cored interval and bring up a "Remove Gap?" Message.
3. Click on the button. This will bring up all the underlying core intervals that are consecutive to fill in the gap created by the empty sleeve



Now we are going to create a lost core interval from 863' 8" to 864' 4"

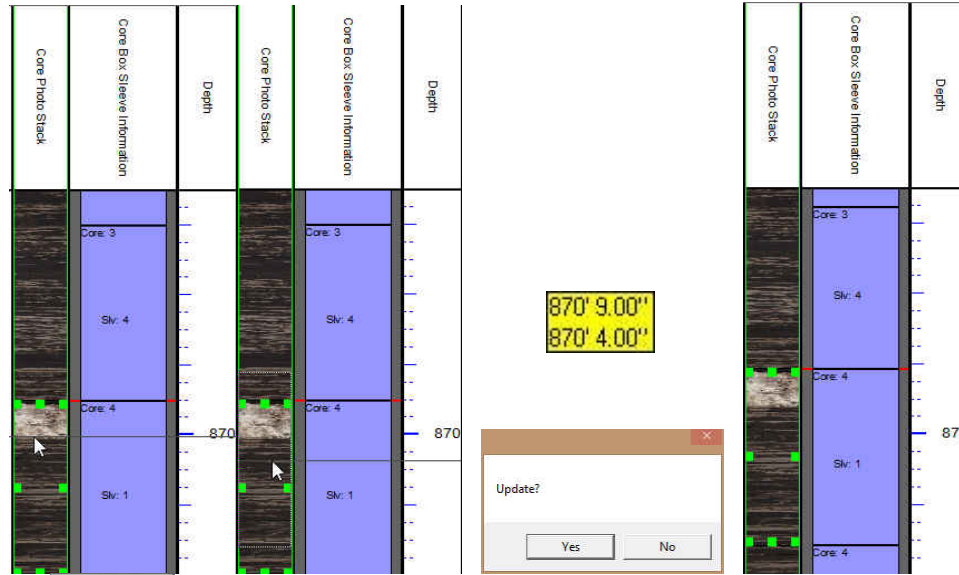
4. **Right Click** at 863' 8" in **Core 3 Sleeve 2** near the bottom. It has a slight break in the picture. Select **split from the resulting pop out menu**. This will split the sleeve so that we can create a lost core interval from 863' 8" to 864' 4" which is a missing core section of 8".
5. **Hold down the Shift key and click and drag the lower portion of Sleeve 2** so that the upper portion of the outline is around 864' 4". You can also follow the mouse depth box tracker and give it an 8" difference.
6. **Release the Mouse Button** and this will activate the System message "Create LC?" **Click on the** **button**



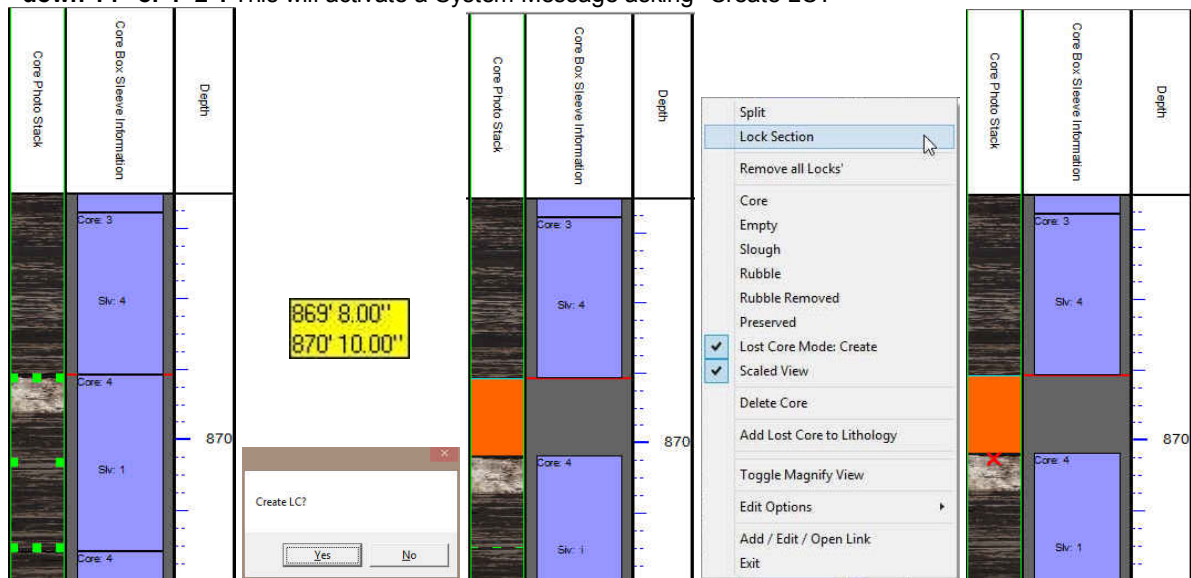
7. **Right Click** on the **Lower Portion of Core 3 sleeve 2** and **select Lock Section** from the resulting pop out menu. This will place an X on the top of the Section and will be locked in place and this will never move from this point on.

So now we will have to adjust the base of the core recovery section to match the Depth Correlated to the log. The base of the recovered interval on this log is 869' 6" (869.52) and the base of the core should be at 869' 1" (869.08). With this in mind we will take **Core 4 Sleeve 1** and push up the bottom of Core 3 Sleeve 4 to match the depth. Ensure you do have a lock above and before the lost core interval. If no you will then adjust more intervals above than you wish.


8. **Hold down the CTRL key** on your keypad and **click on and drag up Core 4 Sleeve 1** up 5 inches and then release the mouse button. This will activate a System message "Update?"



9. Click on the **Yes** button. This will move the lower Core 4 Sleeve 1 up (and all the subsequent core below) and shrink all the core photos above by a little bit up to the Locked Section.
10. To create more lost core, hold the **SHIFT Key** down on your keypad and Click and drag Core 4 Sleeve 1 down 14\" or 1' 2\". This will activate a System Message asking "Create LC?"



11. Click on the **Yes** button. This will create the lost core interval.
12. Continue on with the depth correcting in the table below. Remember to Lock sections after lost core or even when you have a sleeve depth corrected so they will be locked and not move.

Note: Once the lock has been placed the top of the interval the top depth of the locked sleeve will never move.
 Note: If you happen to do something wrong remember you have an **UNDO** under the **Edit Menu** selection. Also there is an  button on the Toolbar.

Core Depth Correction Sheet

Below is the Core Depth Correction Sheet to help you with the Lost Core and Locking Section Below.

Core #	Cored Interval (Depth Corrected)	Lost Core Intervals
1	848' 2" to 855' 4"	853' 2" to 855' 4"
2	855' 4" to 650' 9"	NA

Core #	Cored Interval	Lost Core
3	850' 9" to 870' 5"	863' 8" to 864' 4" 869' 6" to 870' 5"
4	870' 5" to 879' 6"	NA
5	879' 6" to 886' 2"	885' to 886' 2"
5	886' 2" to 896' 8"	895' 10" to 896' 8"
6	896' 8" to 897' 6"	NA
6	897' 6" to 909' 9"	909' 4" to 909' 9"
7	909' 9" to 910' 6"	NA
7	910' 6" to 918' 4"	915' 6" to 918' 4"
8	918' 4" to 924' 8"	923' 8" to 924' 8"
9	924' 8" to 931' 3"	930' 9" to 931' 3"
10	931' 3" to 938' 2"	935' 6" to 938' 2"
11	938' 2" to 950' 9"	946' 4" to 948' 6"
12	950' 9" to 953' 5"	NA
13	953' 5" to 956' 2"	NA
14	956' 2" to 958' 6"	NA
14	958' 6" to 963' 5"	NA
15	963' 5" to 969'	NA
16	969' to 982' 11"	978' 2" to 982' 11"
17	982' 11" to 986' 4"	NA
17	986' 4" to 992' 3"	987' 2" to 988' 10" 990.4" to 992' 3"
18	992' 3" to 998' 8" Go to page 40 in manual to Input Slough	993' 3" to 998' 8"
19	998' 8" to 1000' 6"	NA
19	1000' 6" to 1006' 5"	1005' 5" to 1006' 5"
20	1006' 5" to 1007' 10"	NA
20	1007' 10" to 1012' 5"	NA
21	1012' 5" to 1017' 11"	NA
22	1017' 11" to 1019'	NA
23	1019' to 1025' 7"	NA
24	1025' 7" to 1035' 3"	NA
25	1035' 3" to 1035' 9"	NA
25	1035' 9" to 1045' 1"	NA
26	1045' 1" to 1055"	NA
27	1055" to 1059' 11"	NA
27	1059' 11" to 1065' 7"	NA

Core #	Cored Interval	Lost Core
28	1065' 7" to 1066' 3"	NA
28	1066' 3" to 1074' 6"	NA
29	1074' 6" to 1083' 8"	NA
29	1083' 8" to 1084' 4"	NA
30	1084' 4" to 1088' 3"	NA
31	1088' 3" to 1093' 2"	NA
31	1093' 2" to 1098' 1"	NA

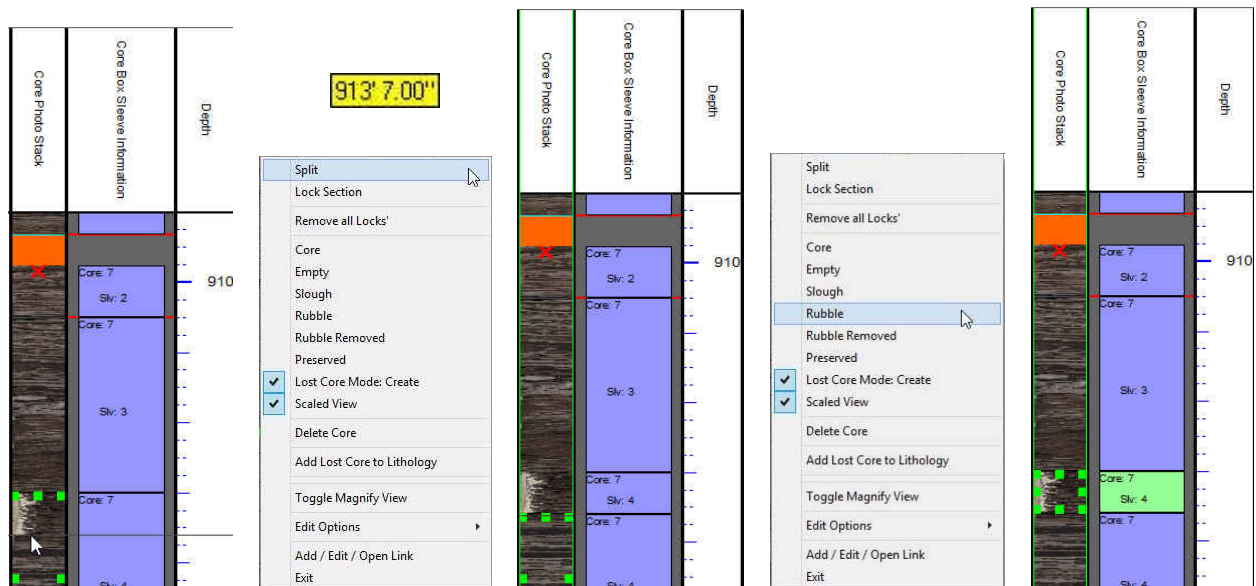
Editing the Core Photos (Indicating Good Core from Rubble and Slough).

This would be done if a sleeve has noticeable slough or rubble where you want the rubble zones to be left out of any Core Analysis. Or the Slough to be taken out of the Core photos. This manipulation can be done through the builder or the Mouse Pointer. The default when adding core sleeves is to indicate all sleeves are good core. When Slough is indicated the Section is removed from the Sleeve. We will preserve the Slough Interval in the Core # and Sleeve data ASCII export. When Rubble is indicated the Sleeve remains but the Dean Stark testing interval will be affected with no Tests to be performed over this rubble zone. The Core # and Sleeve Data will be indicated by a green color vs the normal blue color.

Indicating Rubble

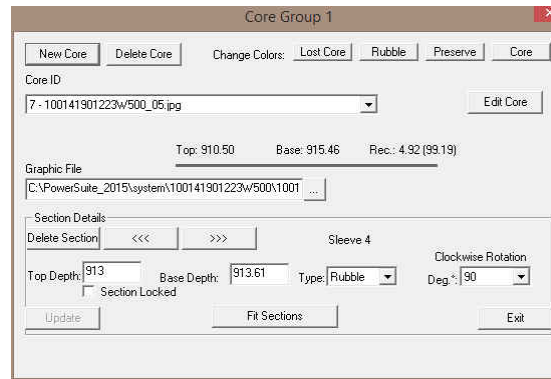
In my example I have depth corrected down to Core 7 indicating lost core intervals and resizing some sleeves to make the Cored interval match the depth corrected sheet above. I have come to some rubble in Core # 7 Top of Sleeve 2. (Core 7 is approximately 909' 4" -918' 4"m)

1. **Click** on the **Core #7 Sleeve 4** at around 913'. Your selection will be shown in the Core Group Window and will become highlighted with the resizing boxes.
2. **Right Click** at the **depth of 913' 7"** and **select Split** from the resulting pop out menu. This will split the sleeve.
3. **Right Click** on the **Sleeve** and **select Rubble** from the resulting pop out menu. This will keep the rubble in the core photos but will omit this interval when it comes to the resulting Automated Dean Stark and other Test intervals.





4. Or the User can **Click** on the **drop box** and **select Rubble** or Rubble Removed from the builder itself and then **Click** on the **Update** **button** and this will either remove the sleeve and for you in the case of **Rubble** or change the sleeve color from blue to green in the case of **Rubble** as indicated below.

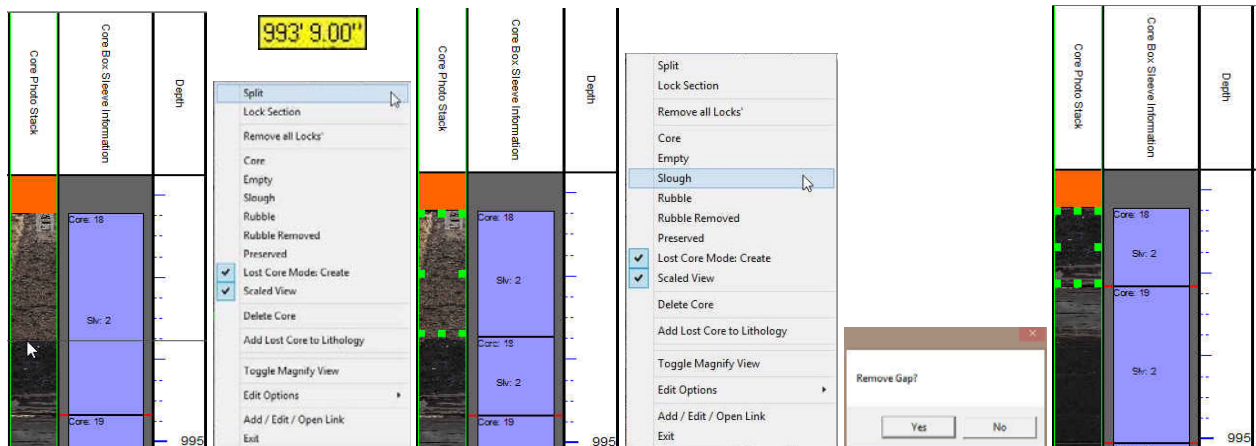


Indicating Slough

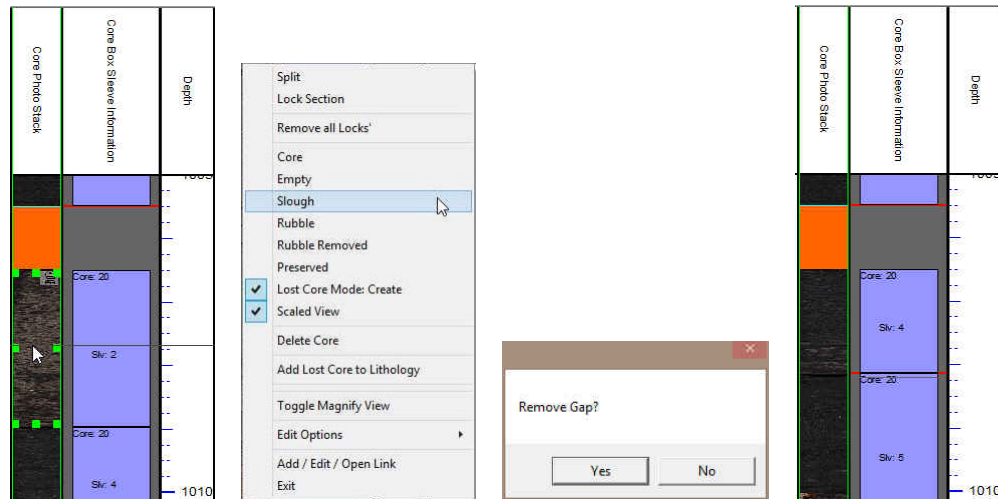
We have some definite Slough in Core #18 Sleeve 2 and also in Core #20 Sleeve 2. The Sleeve 1 was empty and should have been deleted in the previous section. Core # 18 is located @ 992' 3" – 998' 8" so scroll or go to depth to get to that depth. Core 20 is located @ 1006' 5" – 1012' 5"

Depths will vary from the tutorial depending on the empty sleeve process done in a previous section of the tutorial.

1. **Double click** anywhere within the **Core Photo Stack** track to activate the Core Group window.
2. **Right Click** on the **Sleeve Core 18 sleeve 1** and select delete from the pop out menu. This will delete the sleeve from the cored interval.



3. **Right Click** on the **Sleeve 2 Core 18 at a depth of 993' 9"** and select split from the pop out menu. This will split the sleeve 2 and highlight the upper Sleeve 2.
4. **Right Click** on the **Sleeve Core 2 sleeve 2 upper part** and **select Slough** from the pop out menu. This will activate the "Remove Gap" message box.
5. **Click** on the **Yes** **button**. This will remove the slough and bring up the entire section of consecutive cores from below.




Depths will vary from the tutorial depending on the empty sleeve process done in a previous section of the tutorial.

Go to Core 20 (roughly 1005' 6" to 1010' 7") by scrolling with mouse roller button, scroll bars are right side of the screen or type **1005** in the **Go To Depth** field in Selection bar and then **press the tab key**.

6. **Right Click** on **Sleeve 2 Core 20** on the Photo Stacking Layer and **select Slough** from the menu pop out. This will activate the "Remove Gap" message box.

7. **Click** on the **Yes** button. This will remove the slough and bring up the entire section of consecutive cores from below.

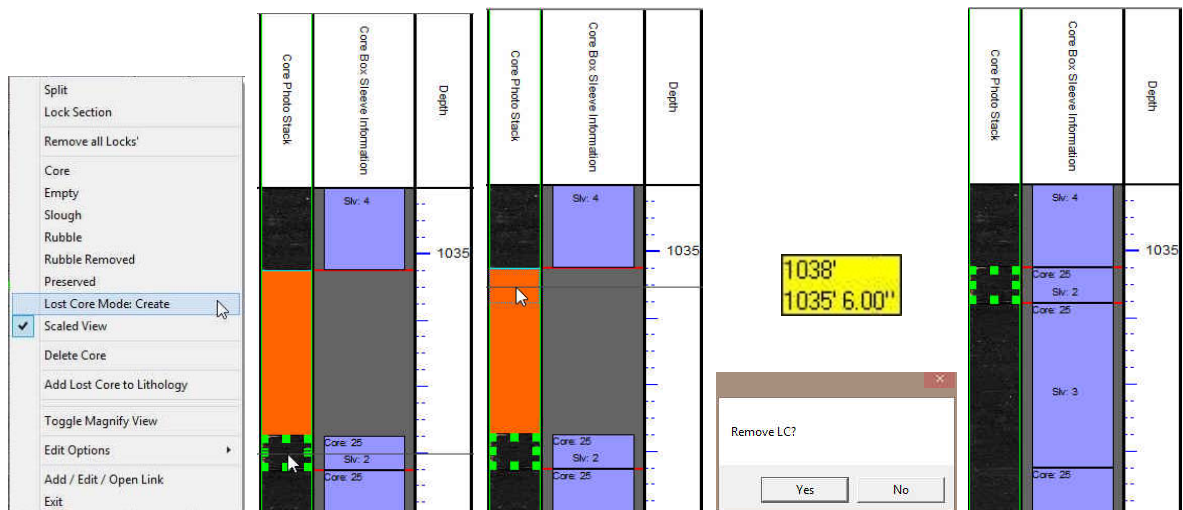
Note: If you happen to do something wrong remember you have an **UNDO** under the **Edit Menu** selection. Also there is an  button on the Toolbar

Note: The System will never allow these moves to overlap pictures. If you drag them to a Lost Core Section and you are not snapping to nearest they must be placed accurately as you will be moving the Lost Core Area from where you dragged to and replacing it where you took the picture from.

Lost Core Created unintentionally by the software. A Remedy

There are times when going through the depth correction process of emptying sleeves, creating lost core and depth correcting that there are some gaps created unintentionally between the top of the cored interval and the first photo. These are always in intervals below where you are working. Below is one way to get these unintentional lost core intervals removed.

1. **Double click** anywhere within the **Core Photo Stack** track to activate the Core Group window.
2. **Right Click** on the **Core Photo Stack** layer and deactivate the **Create Lost Core**

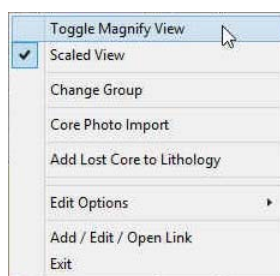


3. **Hold the SHIFT Key down** on your keypad and then **Click and drag up** on the **Upper Sleeve** below the lost core interval until the outline comes very close to the top of the cored interval.
4. **Release the mouse button** and this will activate a System message asking you to "Remove LC".
5. **Click on the button.** This will remove the lost core and bring up the entire section of consecutive cores from below.

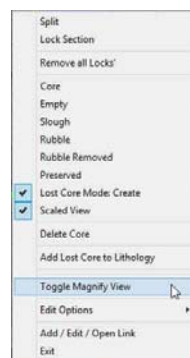
Turn on the Magnify View Layer.

This will allow the user to view small sections of the Core at a larger scale. When depth correcting it is much easier to see deflections in the Curve data at larger scales (1:48 vs 1:1) where all curve data is basically linear on the screen. Hopefully you have completed the depth correction of the core photos. If not then you can just demonstrate to yourself how this works.

1. If the Core Photo Magnify Track is not being displayed **Right Click** on the **Core Photo Stacking** Layer and **select the Toggle Magnify View.** This will turn on the Core Photo Magnify Track. If the builder was open it will automatically close the builder.

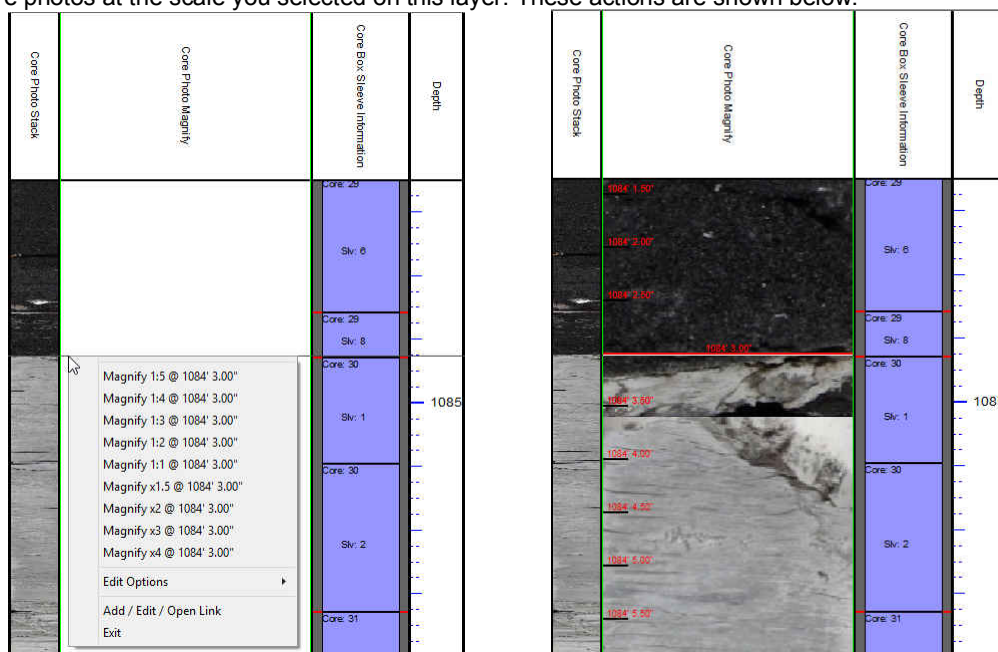


With builder closed



With builder open

2. **Right Click** on the **Core Photo Magnify** track at 1084' 3" and **select one of the Magnify 1:1.** This will display the core photos at the scale you selected on this layer. These actions are shown below.



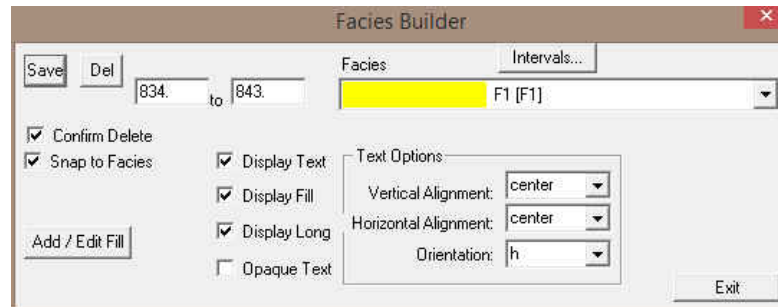
You will see red ruler style lines on the magnify view. The ruler markings are 0.5" divisions to allow the user to figure out at what depth the contact or physical structure you wish to identify is located. I visualize the Sand / Limestone contact @ **1084' 3"**. As far as the log data around this area I see the GR and Vshale curve data indicating a contact @ **1084'**. I would then use this depth to indicate the **Cretaceous / Devonian Unconformity**.

For the User to see the exact movements of your mouse you will want to turn off the **Mouse Hair**. Otherwise your movements will be seen in the upper left corner of the screen. To turn off the Mouse Hair **Click** on the **View Menu** Selection and **Select the Mouse Cross Hairs** from the resulting pull down menu.

Adding Interpretive Facies

This Builder will allow you to draft on the Interpreted Facies Layer. The user can utilize this layer if they have the Power*Core Module. In a **Facies Log** this layer will control the entry of all Bed Restricted Layers. If you do not have an interval of Interpretive Facies you cannot enter any bed restricted data. Consequently if you resize or delete a Facies all bed restricted data will also be affected.

Overview of Facies Builder window.



Save Button The user can enter the depths into the two depth fields with Facies selected and then **click** on the **Save** button. Their interval will now be drawn on the Interpretive Facies Track.

Del Button: The user can click on an existing interpretive Facies interval and the corresponding data will be shown in the builder. The user can then **click** on the **Del** button to delete the interval.

Confirm Delete: Check box when activated will prompt the user with a Confirmation window Do you really want to delete? If this **Confirm Delete** is unchecked the Facies Interval will be deleted without any system message.

Snap to Facies: This Check box when activated will not allow spaces between beds on the Interpretive Facies Layer when you are using the mouse (not the keypad) when entering Lithology Intervals. This function will work if you are within 1/4" of an existing Interval and will snap to the facies interval already drawn on your log.

Intervals... Button will activate a list of the Interpretive Facies Intervals in your active well. The user can select any interval from this list and can then modify or delete this interval.

Add / Edit Fill Button allows the user to Add, Change or Delete Existing Facies Fill Types.

Display Text check box allows the user to turn / off the Text in the drawn facies.

Display Fill check box allows the user to turn / off the Color Fill in the drawn facies.

Display Long check box allows the user to Display the Long Name of the drawn facies if the Text option is selected.

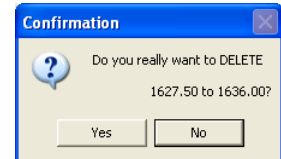
Opaque Text check box allows the user to Display the Name with an Opaque background of the drawn facies if the Text option is selected.

Vertical Alignment: center drop box allows the user to Display the Name of the drawn facies if the Text option is selected at the top centre or bottom of the drawn interval.

Horizontal Alignment: center drop box allows the user to Display the Name of the drawn facies if the Text option is selected at the left centre or right of the drawn interval.

Orientation: h drop box allows the user to Display the Name of the drawn facies if the Text option is either vertically or horizontally within the facies.

Exit Button will close the Facies builder.



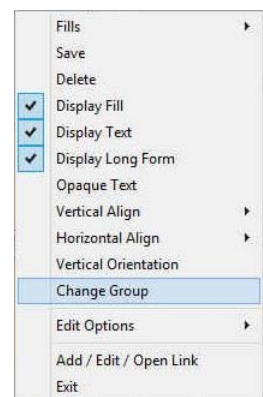
Right Click Menu Items

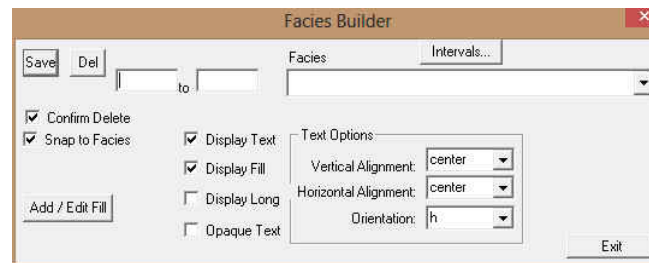
All these menu items are described above as they are part of the Facies Builder as well. Once the display is the way you prefer them you will find that every time you work with this layer the default will now be the same as when you left the builder.

Change Group Selection allows the user to switch to a different FACIES group.

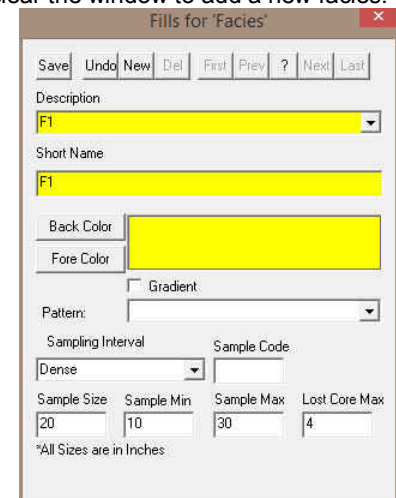
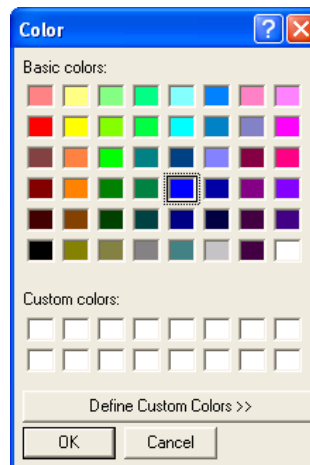
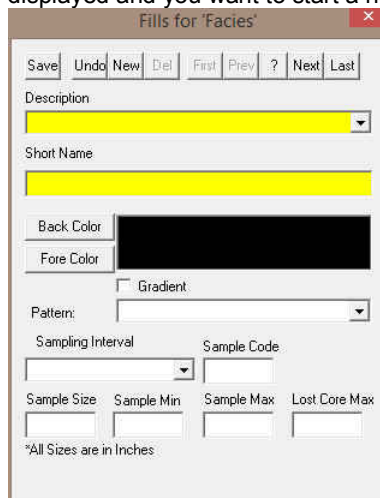
Adding Fill Types to the Interpretive Facies Builder

- 1) **Double click** anywhere within the **Interpretive Facies** track to activate the **Facies Builder** window.

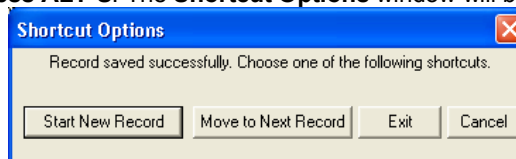




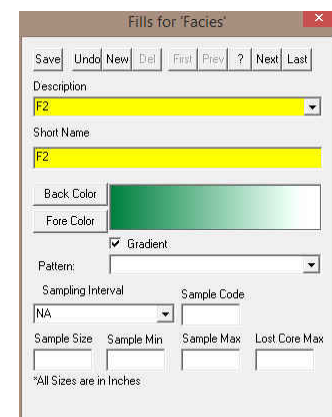
- 2) Click on the **Add / Edit Fill** button. This will activate the window show below. If the window has a fill already displayed and you want to start a new fill then click on the **New** button to clear the window to add a new facies.

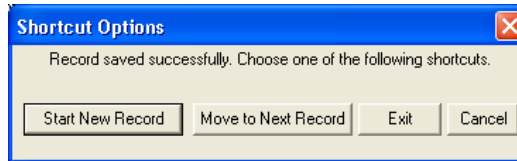


- 3) Type **F1** in the Facies long name into the **Description** field.
- 4) Type **F1** in the Facies short name into the **Short Name** field.
- 5) Click on the **Back Color** button and select **yellow** from the palette and then click on the **OK** button.
- 6) Pick **Dense** from the **sampling Interval** from the drop box.
- 7) Type in a **Sample Code** if you wish. This is a secondary display on the Name when displayed on the Facies Interval.
- 8) Type **20** in the **Sample Size (optimum)** field, Type **10** in the **Sample Minimum** field and Type **30** in the **Maximum sample size field** in the fields provided for the Automated Dean Stark Calculator layer / track to work with in the automation process. These sizes are in inches (1 foot = 12 inches).
- 9) Type **4** in the **Lost Core Maximum** field for the Automation for sampling to be straddled over.
- 10) Click on the **Save** button or press **ALT-S**. The **Shortcut Options** window will be shown.

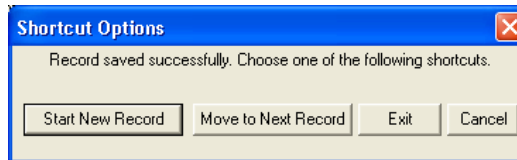
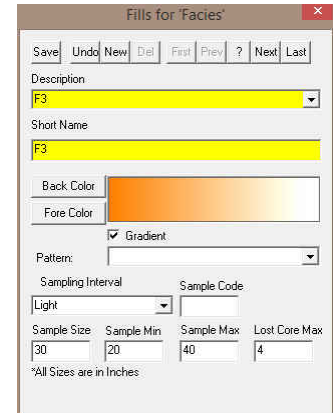


- 11) To enter another Fill for Facies, click on the **Start New Record** button.
- 12) Type **F2** in the Facies long name into the **Description** field.
- 13) Type **F2** in the Facies short name into the **Short Name** field.
- 14) Click on the **Back Color** button and select **grey blue** from the palette and then click on the **OK** button.
- 15) Click on the **Gradient** ☒ **Gradient** to activate a check mark if you want the gradient option.
- 16) Pick **NA** from the **sampling Interval** from the drop box.
- 17) Type in a **Sample Code** if you wish. This is a secondary display on the Name when displayed on the Facies Interval.
- 18) Click on the **Save** button or press **ALT-S**. The **Shortcut Options** window will be shown.





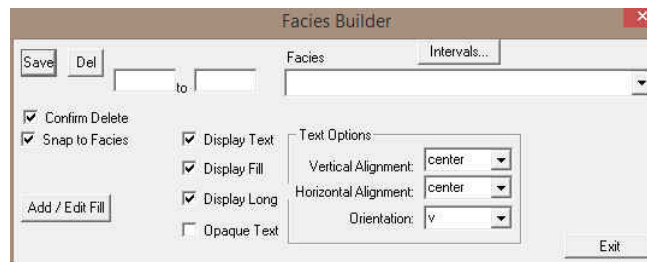
- 19) To enter another Fill for Facies, click on the **Start New Record** button.
- 20) **Type F3** in the Facies long name into the **Description** field.
- 21) **Type F3** in the Facies short name into the **Short Name** field.
- 22) Click on the **Back Color** button and select orange from the palette and then click on the **OK** button.
- 23) Click on the **Gradient** ☒ **Gradient** to activate a check mark if you want the gradient option.
- 24) Pick **Light** from the **sampling Interval** from the drop box.
- 25) **Type in a Sample Code** if you wish. This is a secondary display on the Name when displayed on the Facies Interval.
- 26) **Type 30** in the **Sample Size (optimum)** field, **Type 20** in the **Sample Minimum** field and **Type 40** in the **Maximum sample size** field in the fields provided for the Automated Dean Stark Calculator layer / track to work with in the automation process. These sizes are in inches (1 foot = 12 inches).
- 27) **Type 4** in the **Lost Core Maximum** field for the Automation for sampling to be straddled over.
- 28) Click on the **Save** button or press **ALT-S**. The **Shortcut Options** window will be shown.



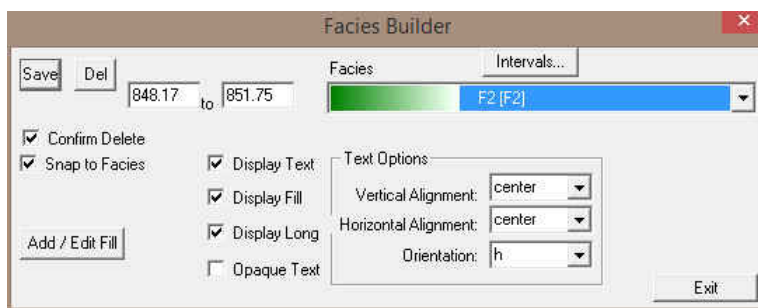
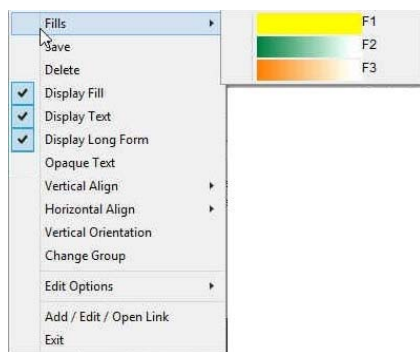
- 29) Select **Exit** from the ensuing **Shortcut Options** window. This will exit the window and the new Facies have been added.

Drafting an Interpreted Facies Interval (Mouse Pointer Method).

1. **Double click** anywhere within the **Interpreted Facies** track to activate the **Facies Builder** window.



2. **Select** the **F2 Facies** from the Facies Fill List, some faster than others.
 - The user can **right click** anywhere within the **Interpreted Facies** track to activate the pop-up menu shown below. Then select by **clicking once** on the desired **Facies** from the pop-up menu.
 - The user can select a **Facies** from the **Facies** field within the **Facies Builder** window.
 - The user can also **click** on a **previously drawn Facies** that is the same as you wish to draw with. If done correctly the selected Facies will be automatically displayed in the **Facies** field within the **Facies Builder** window.



3. **Click and drag** the mouse from **848' 2.00"** to **851' 9.00"** to within a specific track to define the Facies interval. **Or**, If there is a Facies defined above and below (within 300 feet) and you may want to fill in the interval simply **double clicking** in the interval and it will fill in.

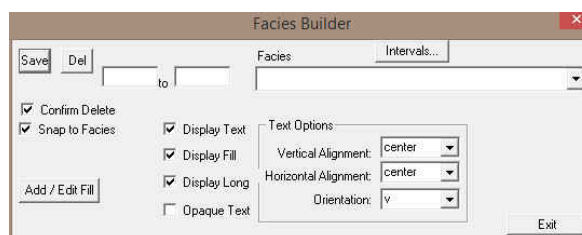
Note: This can be done on any track but more often than not the Interpretive Lithology Track is the most convenient. With the ☒ Snap to Facies activated the Facies being drawn will snap to the previous Facies either above or below depending on your drag if you are within 1/4" of already drawn lithology.

4. **Release** the mouse button and the interval will be drawn accordingly with F2.
 5. **Repeat Steps 2-3 for Each Facies below. Also you can insert your own facies intervals. Up to you.**

From Depth	To Depth	Facies
851' 9"	861' 8"	F3
861' 8"	869' 1"	F1
869' 1"	929' 8"	F2
929' 8"	944' 1"	F1
944' 1"	948' 7"	F2
948' 7"	996' 11"	F1
996' 11"	999' 4"	F2
999' 4"	1017' 9"	F1
1017' 9"	1025'	F2
1025'	1084' 3"	F1
1084' 3"	1098' 1"	F2

Drafting an Interpreted Facies Interval (Keyboard Method).

1. **Double click** anywhere within the **Interpreted Facies** track to activate the **Facies Builder** window.



2. **Type a depth** in the **from Field** (848.17). **Press the Tab Key**. This will advance the cursor to the To Field.
 3. **Type a depth** in the **to Field** (851.75). **Press the Tab Key**. This will advance the cursor to the Facies Field.
 4. **Pick a Facies** from the Facies field (F2). The user can now use the Up / Down arrows on the keypad, use the mouse to select from the Drop Box.
 5. The user can now select the display controls. They default from the previous use of the track so should not have to reset once you have setup display controls.
 6. **Click on the Save button**. Or you can **press the Enter Key** on your Keypad.
 7. Repeat Steps 2-6 for the above Facies.

Inserting a Facies within an existing Facies

You are able to insert thinner Facies of a different **Facies Type** into an existing Facies. This prevents you from having to re-enter the properties of the main Facies above and beneath the inserted thinner Facies.

1. **Double click** anywhere within the **Interpreted Facies** track to activate the **Facies Builder** window.
2. **Select a Facies type.**
3. **Click and drag** the mouse button up or down within a specific track to define the **Facies** interval.
4. **Release** the mouse button, and you will be prompted with a message asking, "**Do you want to add an interbedded interval?**"
5. **Click** on the **button** and the thinner bed will be drawn accordingly.
6. Press the **Esc** key on the keyboard to exit from the **Facies Builder** window.

Resizing an Existing Facies Fill

1. **Double click** on the **Interpreted Facies** track to activate the **Facies Builder** window.
2. **Press and hold** the **Ctrl** key on the keyboard **down**, while moving the mouse pointer over the Facies Fill boundary you wish to resize, the mouse pointer will turn into a resize \updownarrow , (remember if two Fills are touching to look into the builder to see if you have the correct one selected)
3. **Clicking and dragging** the **left** mouse button up or down the **Interpreted Facies** track to either shrink or enlarge the selected interval.

Note: You are not allowed to overlap an existing facies entirely and if you attempt to do so, you will receive an "**Unsupported Add Sequence**" system message.

4. **Release** the mouse button at the desired depth, followed by the release of the **Ctrl** key on the keyboard, and the following system message will be activated, "**Do you really want to RESIZE the interval from _ to _ ?**"

Note: Resizing a **Facies** will result in a resizing its associated bed restricted description category information, i.e. **Grain Size**, **Porosity Grade**, and so on.

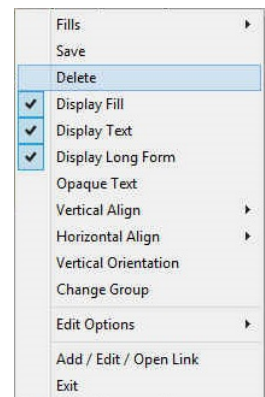
5. Press the **Esc** key on the keyboard to exit from the **Facies Builder** window.

Deleting a Single Facies Fill.

1. **Double click** on the **Interpreted Facies** track to activate the **Facies Builder** window.
2. **Right click** anywhere within the **Interpreted Facies** track to activate the pop-up menu.
3. **Click on Delete** and the following system message will be activated, "**Do you really want to DELETE _ to _ ?**" **Click** on the **button** to confirm the deletion.

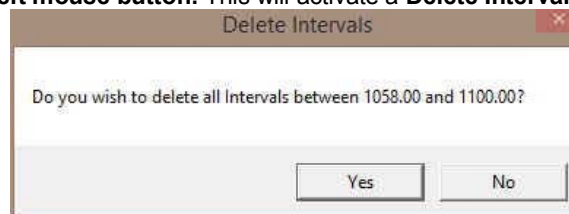
Note: When you delete a **Facies Fill**, you will also delete its associated bed restricted rock description information, i.e. **Grain Size**, **Porosity Grade**, **Type**, **Oil Show** and all other bed restricted data.

4. Press the **Esc** key on the keyboard to exit from the **Facies Builder** window.



Deleting Multiple Facies Fills

1. **Double click** on the **Interpreted Facies** track to activate the **Facies Builder** window.
2. **Hold the SHIFT Key down** and then **click and drag** anywhere within the **Interpreted Facies** track and then let go of the **Shift Key** and **left mouse button**. This will activate a **Delete Intervals** message box.



3. **Click** on **button** and the Intervals dragged over will be deleted.

Note: When you delete a **Facies Fill**, you will also delete its associated bed restricted rock description information, i.e. **Grain Size**, **Porosity Grade**, **Type**, **Oil Show** and all other bed restricted data.

4. Press the **Esc** key on the keyboard to exit from the **Facies Builder** window.

Automated Dean Stark Calculator Layer / Track

This layer allows the user to calculate Dean Stark Test Intervals automatically but this layer requires **Stacked Core Photos** and **Interpretive Facies Layers** data for this to work. This layer is only available with our Power*Core 2015 and beyond. This automation will only be done if you have the Interpretive Facies filled along with the Core Photo's stacked. This should be the last thing you perform after the core has been depth corrected and the facies have been entered. The User can also enter in the data by mouse pointer or keypad methods.

Automated Method

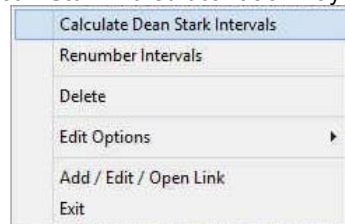
1. **Double click** on the **Auto Dean Stark Calculator track / layer** to activate the Dean Stark Test Intervals **Builder** window.



The 'Dean Stark Intervals' dialog box contains the following fields and controls:

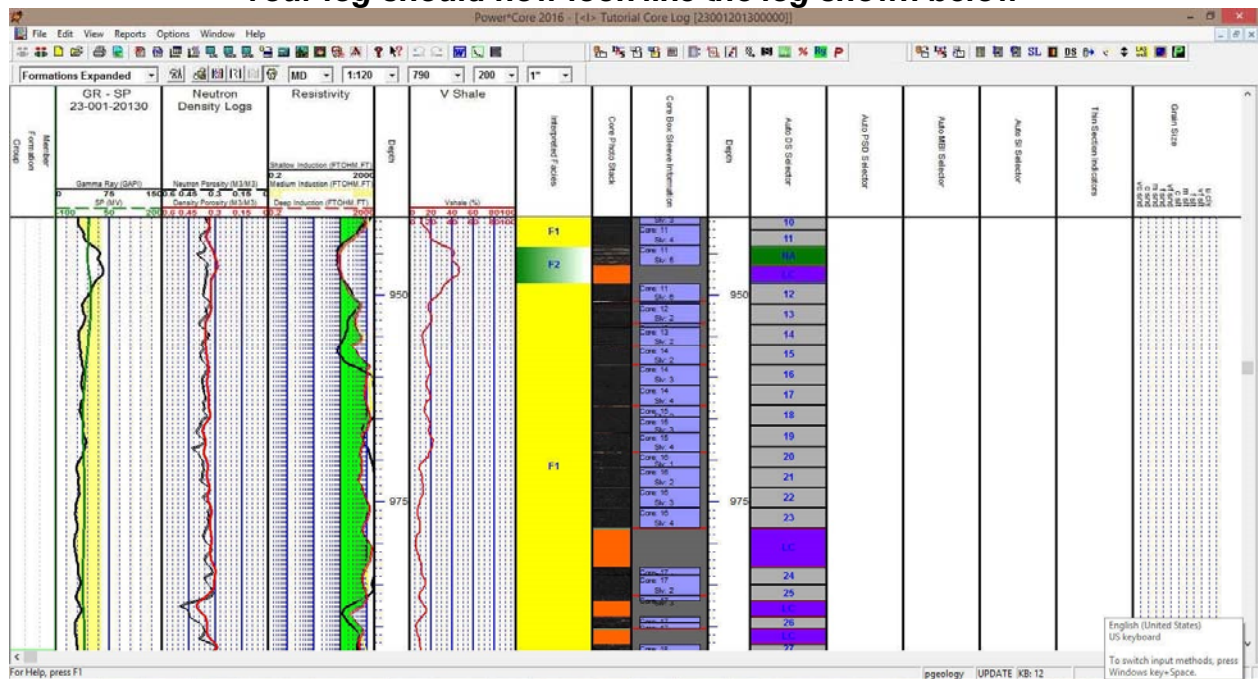
- ID:** A text input field.
- Top:** A numeric input field with the value '0'.
- Base:** A numeric input field with the value '0'.
- Description:** A text input field.
- Snap to Interval:** A checked checkbox.
- Buttons:** Save, Delete, New, and Exit.

2. **Right click** anywhere on the **Auto Dean Stark Calculator track / layer** to activate the pop-up menu.



3. **Click** on the **Calculate Dean Stark Intervals** selection and the Intervals will be calculated for you. This will only be done if you have the Interpretive Facies filled along with the Core Photo's stacked. This should be the last thing you perform after the core has been depth corrected and the facies have been entered.
4. Press the **Esc** key on the keyboard to exit from the **Dean Stark Interval Builder** window.

****Your log should now look like the log shown below****



Manually entering a Test Interval

This is only for your information. The above test intervals will do just fine.

1. Double click on the **Auto Dean Stark Calculator** track / layer to activate the **Dean Starks Intervals Builder** window.

Mouse Pointer Method

2. Click on the **New** Button to clear the data entry form.
3. Click and drag the **Mouse Pointer** within the **Auto Dean Stark Calculator** track / layer.
4. Release the mouse button and the interval will be drawn with a 9999.
5. Repeat Steps 2 – 4 for more intervals.
6. When all your intervals have been entered you will want to **Right Click** on the layer to activate the pop out menu and **select Renumber Intervals**

Or Keypad Method

1. Click on the **New** Button to clear the data entry form.
2. Type in a **Top and Base Depth** into the builder and then click on the **Save** button.
3. Repeat Steps 3-4 for more intervals.
4. When all your intervals have been entered you will want to **Right Click** on the layer to activate the pop out menu and **select Renumber Intervals**

Resizing an Interval

1. Double click on the **Auto Dean Stark Calculator** track / layer to activate the **Dean Starks Intervals Builder** window.
2. Move the mouse pointer over the interval to be resized and Click once. This will activate the interval with the selection resize boxes.
3. Hold the **CTRL Key** down and mouse over the edges and click and drag to a different interval.
4. OR type in a new **top and / or base depth** and click on the **Save** button.

Deleting a Single Interval

1. Double click on the **Auto Dean Stark Calculator** track / layer to activate the **Dean Starks Intervals Builder** window.

2. Right click anywhere within the interval you wish to delete to activate the pop-up menu.
3. Click on **Delete** option and the interval will be deleted accordingly.
4. Repeat Steps 2 and 3 to delete more **Dean Stark** intervals from the **Dean Stark** track / layer.
5. Once all your Dean Stark test intervals have been deleted, you will want them to come out sequentially by depth in the Export Utility you will want to **right click** on the track to activate the pop out menu and select **Renumber Tests**.
6. Click on the **Exit** button or Press the **Esc** key on the keyboard to exit from the **Dean Stark Builder** window.

Deleting Multiple Intervals

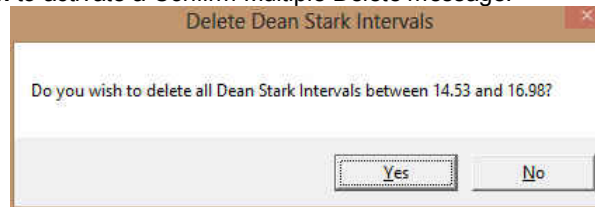
1. **Double click** on the **Auto Dean Stark Calculator** track / layer to activate the **Dean Stark Intervals Builder** window.



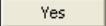

The 'Dean Stark Intervals' window contains the following fields and controls:

- ID:** A text input field.
- Top:** A numeric input field with the value '0'.
- Base:** A numeric input field with the value '0'.
- Description:** A text input field.
- Snap to Interval:** A checked checkbox.
- Buttons:** 'Save', 'Delete', 'New', and 'Exit'.

2. **Press and Hold the SHIFT Key** and then **click and drag an area** anywhere within the intervals you wish to delete.
3. **Release the mouse button** to activate a Confirm Multiple Delete message.



The 'Delete Dean Stark Intervals' dialog box displays the message: "Do you wish to delete all Dean Stark Intervals between 14.53 and 16.98?" with 'Yes' and 'No' buttons at the bottom.

4. **Click on**  **button** and the **Dean Stark** intervals encompassed with your drag will be deleted accordingly.
5. Once all your Dean Stark test intervals have been deleted, you will want them to come out sequentially by depth in the Export Utility you will want to **right click** on the track to activate the pop out menu and select **Renumber Tests**.
6. **Click on the**  **button** or Press the **Esc** key on the keyboard to exit from the **Dean Stark Builder** window.

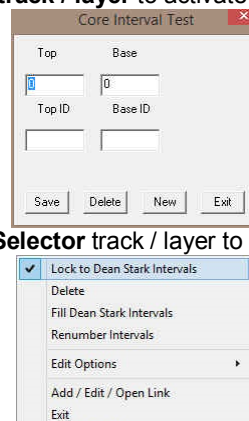
Automated Test Interval Calculator Layer / Track (PSD {Particle Size Distribution})

This layer allows the user to calculate other Test Intervals for PSD automatically but this layer requires **Stacked Core Photos** and **Interpretive Facies Layers** data, and can be tied to the previously entered Dean Stark intervals test for this to work. This layer is only available with our Power*Core 2015 and beyond. This automation will only be done if you have the Interpretive Facies filled along with the Core Photo's stacked. This should be the last thing you perform after the core has been depth corrected and the facies have been entered. The User can also enter in the data by mouse pointer or keypad methods.

Note: If the Intervals are **locked** to the Dean Stark Intervals and the check box is activated then the intervals will be drawn in **Pink** and the intervals **not locked** to Dean Stark Intervals will be in **Grey**. Also Vice Versa, if the Locked option is unchecked then the locked intervals will be drawn in grey and the unlocked intervals will be drawn in pink. The user can only manipulate the data when the intervals that are pink.

Automated Method

1. **Double click** on the **Auto PSD Selector** track / layer to activate the **Core Interval Test Builder** window.



The 'Core Interval Test' window contains the following fields and controls:

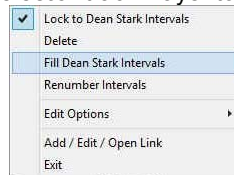
- Top:** A numeric input field with the value '0'.
- Base:** A numeric input field with the value '0'.
- Top ID:** A text input field.
- Base ID:** A text input field.
- Buttons:** 'Save', 'Delete', 'New', and 'Exit'.

Below the window, a context menu is shown with the following options:

- ☒ Lock to Dean Stark Intervals
- Delete
- Fill Dean Stark Intervals
- Renumber Intervals
- Edit Options
- Add / Edit / Open Link
- Exit

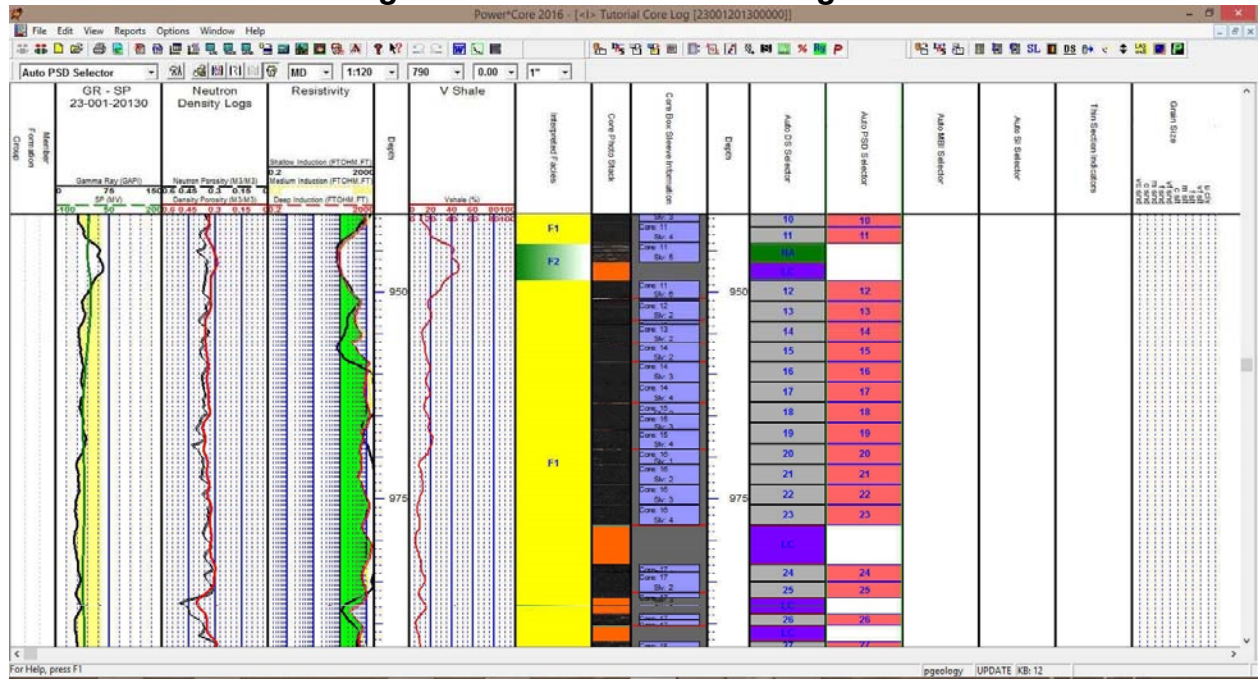
2. **Right click** anywhere on the **Auto PSD Selector** track / layer to activate the pop-up menu.

- Click on the **Lock to Dean Stark Intervals** selection. This will lock the test intervals to the DS intervals previously entered.
- Right click** anywhere on the **Auto PSD Selector** track / layer to activate the pop-up menu.



- Click on the **Fill Dean Stark Intervals** selection. This will fill in the Test Intervals locked to the Dean Stark Intervals previously performed. This will only be done if you have the Dean Stark intervals were calculated.
- Press the **Esc** key on the keyboard to exit from the **Test Interval Builder** window.

*****Your log should now look like the log shown below*****



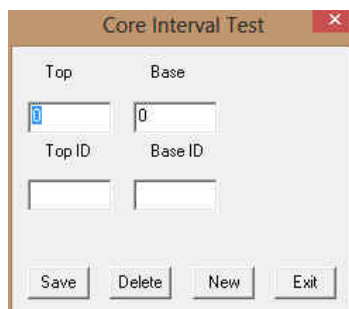
Automated Test Interval Calculator Layer / Track (MBI {Methylene Blue Indicator})

This layer allows the user to calculate other Test Intervals for MBI automatically but this layer requires **Stacked Core Photos** and **Interpretive Facies Layers** data, and can be tied to the previously entered Dean Stark intervals test for this to work. This layer is only available with our Power*Core 2015 and beyond. This automation will only be done if you have the Interpretive Facies filled along with the Core Photo's stacked. This should be the last thing you perform after the core has been depth corrected and the facies have been entered. The User can also enter in the data by mouse pointer or keypad methods.

Note: If the Intervals are **locked** to the Dean Stark Intervals and the check box is activated then the intervals will be drawn in **Pink** and the intervals **not locked** to Dean Stark Intervals will be in **Grey**. Also Vice Versa, if the Locked option is unchecked then the locked intervals will be drawn in grey and the unlocked intervals will be drawn in pink. The user can only manipulate the data when the intervals that are pink.

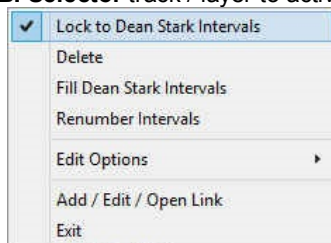
Manually entering an MBI Test Interval

- Double click** on the **Auto MBI Selector** track / layer to activate the **Core Interval Test Builder** window.



The 'Core Interval Test' dialog box has a title bar with a close button. It contains two columns of input fields: 'Top' and 'Base'. Each column has a numeric input field and a 'Top ID' / 'Base ID' label with an empty input field below it. At the bottom, there are four buttons: 'Save', 'Delete', 'New', and 'Exit'.

2. **Right click** anywhere on the **Auto MBI Selector** track / layer to activate the pop-up menu.



A right-click context menu is displayed. It includes a checked item 'Lock to Dean Stark Intervals', followed by 'Delete', 'Fill Dean Stark Intervals', 'Renumber Intervals', 'Edit Options' (with a right-pointing arrow), 'Add / Edit / Open Link', and 'Exit'.


3. **Click** on the **Lock to Dean Stark Intervals** selection. This will lock the test intervals to the DS intervals.

Mouse Pointer Method

4. **Click and drag** the **Mouse Pointer** within the **Auto MBI Selector** track / layer from **around 855' 4" to 863' 8"**.
Note: Just be inside the Dean Stark interval to get the MBI test to get the same depths as the DS Intervals
5. **Release the mouse button** and the interval will be drawn with respect to the previously entered DS Interval and will be represented in pink.

Note: If the Intervals are **locked** to the Dean Stark Intervals and the check box is activated then the intervals will be drawn in **Pink** and the intervals **not locked** to Dean Stark Intervals will be in **Grey**. Also Vice Versa, if the Lock is unchecked then the intervals will be drawn in grey. Now if you uncheck the Lock to Dean Stark Intervals the reverse will happen. The user can only work with the intervals that are pink.



MBI Test Interval	From Depth	To Depth
1	855.33	863.68
2	864.33	869.08
3	918.26	923.67
4	924.68	930.8
5	931.3	935.5
6	938.13	944.08
7	948.58	963.39
8	963.39	978.2
9	982.91	987.02
10	999.33	1005.49
11	1006.51	1017.75
12	1025	1037.34
13	1037.34	1049.69
14	1049.69	1062.03
15	1062.03	1074.38
16	1074.38	1084.25

4. Repeat Steps 4 – 5 with the above intervals.
5. Once all your MBI test intervals are entered or you have added more test intervals, you want them to come out sequentially by depth in the Export Utility you will want to **right click** on the track to activate the pop out menu and select **Renumber Tests**.
6. **Click** on the  button or Press the **Esc** key on the keyboard to exit from the **Core Interval Test Builder** window.

Or Keypad Method


This would probably only be utilized in the intervals that are not locked to Dean Starks as it would be extremely time consuming to type in the top and base of the existing Dean Stark Intervals.

1. **Click** on the  Button to clear the data entry form.

2. **Type** in a **Top and Base Depth** into the builder and then **click** on the  **button**.
3. Repeat Steps 7-8 for more intervals.
4. Once all your test intervals are entered or you have added more test intervals, you want them to come out sequentially by depth in the Export Utility you will want to **right click** on the track to activate the pop out menu and select **Renumber Tests**.
5. **Click** on the  **button** or Press the **Esc** key on the keyboard to exit from the **Core Interval Test Builder** window.

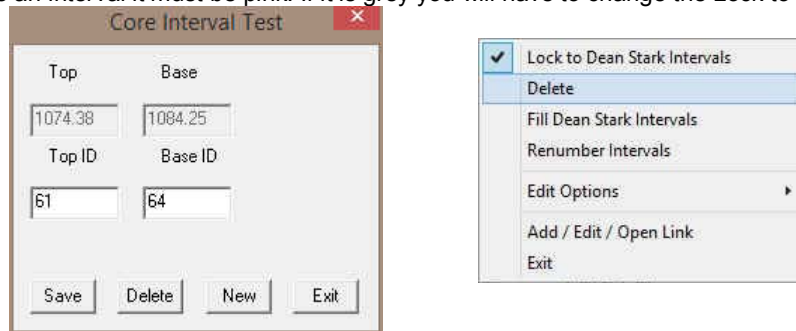
Resizing an Interval


This is only available to Intervals that are not locked with the DS Intervals.

1. **Double click** on the **Auto MBI Selector** track / layer to activate the **Core Interval Test Builder** window.
2. **Move the mouse pointer over the interval** to be resized and **Click once**. This will activate the Builder with the depths of the Selected Test Interval
3. **Type** in a new **top and / or base depth** and **click** on the  **button**.

Deleting a Single Interval

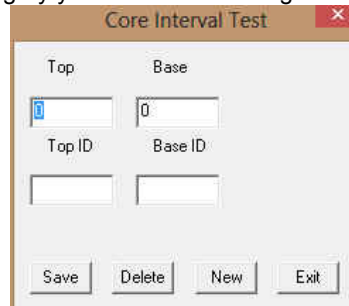
1. **Double click** on the **Auto MBI Selector** track / layer to activate the **Core Interval Test Builder** window. To delete an interval it must be pink. If it is grey you will have to change the Lock to Unlock or vice versa.



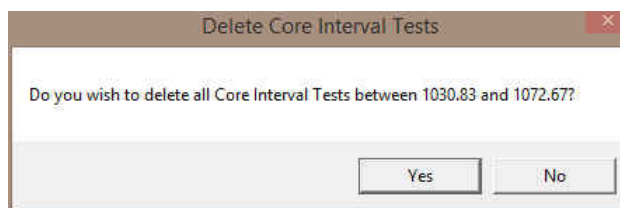
2. **Right click** anywhere within the interval you wish to delete to activate the pop-up menu.
3. **Click on Delete** and the interval will be deleted accordingly.
4. Repeat **Steps 2 and 3** to delete more **Core Interval Test** from the layer.
5. Once all your test intervals have been deleted, you will want them to come out sequentially by depth in the Export Utility you will want to **right click** on the track to activate the pop out menu and select **Renumber Tests**.
6. **Click** on the  **button** or Press the **Esc** key on the keyboard to exit from the **Core Interval Test Builder** window.



Deleting Multiple Intervals

1. **Double click** on the **Auto MBI Selector** track / layer to activate the **Core Interval Test Builder** window. To delete an interval it must be pink. If it is grey you will have to change the Lock to Unlock or vice versa.



2. **Press and Hold the SHIFT Key** and then **click and drag an area** anywhere within the intervals you wish to delete.
3. **Release the mouse button** to activate a Confirm Multiple Delete message.

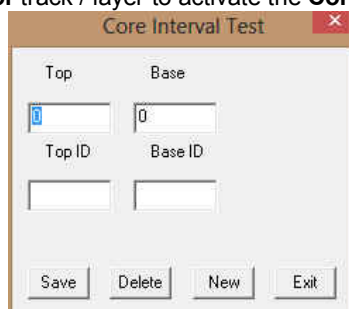


4. Click on the  button and the **Core Interval Test** encompassed with your drag will be deleted accordingly.
5. Once all your test intervals have been deleted, you will want them to come out sequentially by depth in the Export Utility you will want to **right click** on the track to activate the pop out menu and select **Renumber Tests**.
6. Click on the  button or Press the **Esc** key on the keyboard to exit from the **Core Interval Test Builder** window.

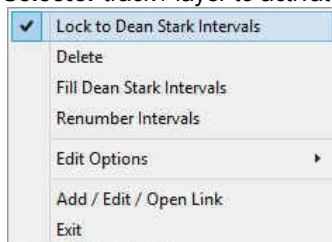
Automated Test Interval Calculator Layer / Track (SI {Soluble Ion})

Manually entering an SI Test Interval

1. Double click on the **Auto SI Selector** track / layer to activate the **Core Interval Test Builder** window.



2. Right click anywhere on the **Auto SI Selector** track / layer to activate the pop-up menu.



3. Click on the **Lock to Dean Stark Intervals** selection. This will lock the test intervals to the DS intervals.


Mouse Pointer Method

4. Click and drag the **Mouse Pointer** within the **Auto SI Selector** track / layer from **around 948' 7" to 978' 2"**.
Note: Just be inside the Dean Stark interval to get the SI test to get the same depths as the DS Intervals
5. Release the mouse button and the interval will be drawn with respect to the previously entered DS Interval and will be represented in pink.

Note: If the Intervals are **locked** to the Dean Stark Intervals and the check box is activated then the intervals will be drawn in **Pink** and the intervals **not locked** to Dean Stark Intervals will be in **Grey**. Also Vice Versa, if the Lock is unchecked then the intervals will be drawn in grey. Now if you uncheck the Lock to Dean Stark Intervals the reverse will happen. The user can only work with the intervals that are pink.

SI Test #	From Depth	To Depth
1	948.58	978.2
2	1025	1057.09
3	1069.44	1081.78

6. Repeat Steps 4 – 5 with the above intervals.
7. Once all your SI test intervals are entered or you have added more test intervals, you want them to come out sequentially by depth in the Export Utility you will want to **right click** on the track to activate the pop out menu and select **Renumber Tests**.

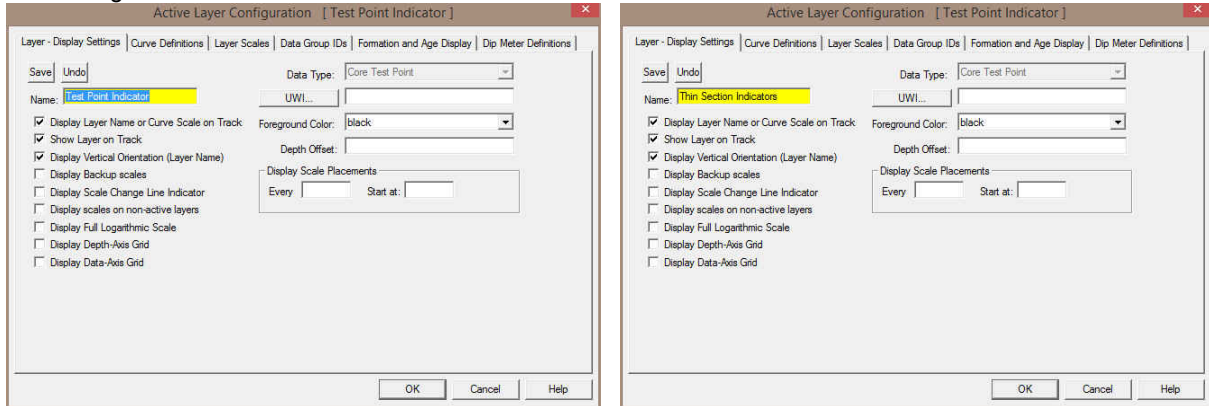
- Click on the  button or Press the **Esc** key on the keyboard to exit from the **Core Interval Test Builder** window.


Test Point Indicator Layer / Track

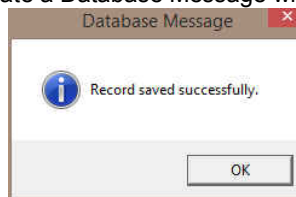
This layer allows the user to indicate other Test points. The layer is only available with our Power*Core application Version 2015 and beyond. The User can also enter in the data by mouse pointer or keypad methods.

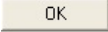
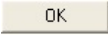
Renaming the Test Point Indicator Layer Name

- Click on the **Test Point Indicator Track** to highlight it in a green outline.
- Click on the **Edit Menu** Selection and **Select Layer Configuration** from the drop list. This will the Layer Configuration window.



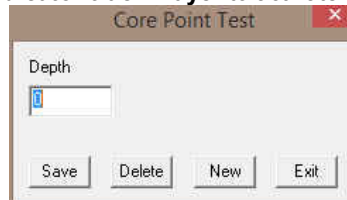
- Change the layer name to **Thin Section Indicator**.
- Click on the  button. This will activate a Database Message window.



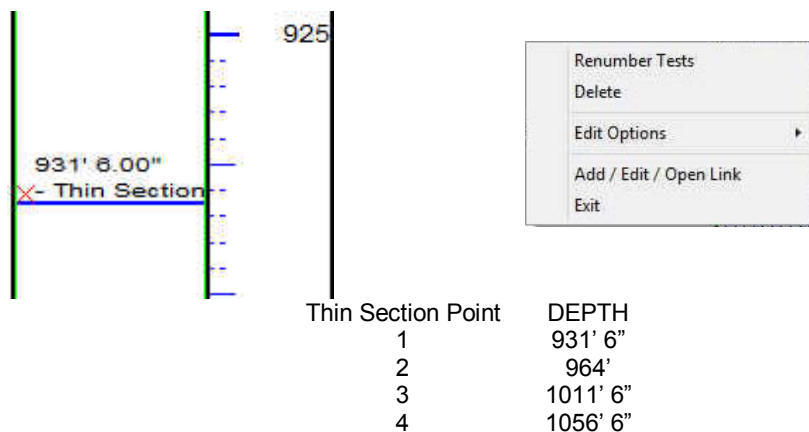
- Click on the  button. This will close the Database Message window.
- Click on the  button in the Layer Configuration Window. This will close the Layer Configuration Window.

Entering Thin Section Points (Mouse Pointer Method)

- Double click on the **Thin Section Indicator track / layer** to activate the **Core Point Test Builder** window.



- Double Click at **284.03 Core Point Test Indicator** track / layer to initiate a test point. The test point will be drawn with a line the layer name and a depth.

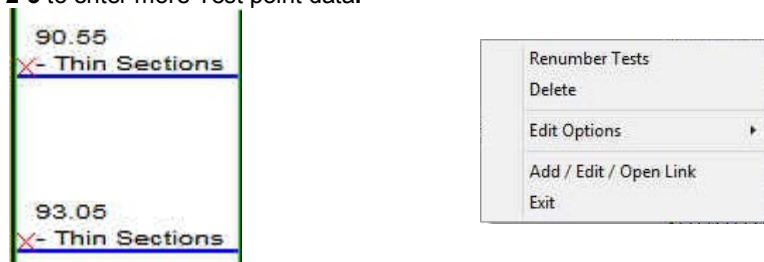


- Once all your test points are entered or you have added more test points, you want them to come out sequentially by depth in the Export Utility you will want to **right click** on the track to activate the pop out menu and select **Renumber Tests**.
- Click on the **Exit** button or Press the **Esc** key on the keyboard to exit from the **Core Point Test Builder** window.

Entering Test Points (Key Pad Method)

- Double click on the **Core Point Indicator** track / layer to activate the **Core Point Test Builder** window.

- Click on the **New** button and **Type** in a **Value** in the Depth field.
- Click on the **Save** button.
- Repeat Steps 2-3 to enter more Test point data.



- Once all your test points are entered or you have added more test points, you want them to come out sequentially by depth in the Export Utility you will want to **right click** on the track to activate the pop out menu and select **Renumber Tests**.
- Click on the **Exit** button or Press the **Esc** key on the keyboard to exit from the **Core Point Test Builder** window.

Deleting a Single Interval

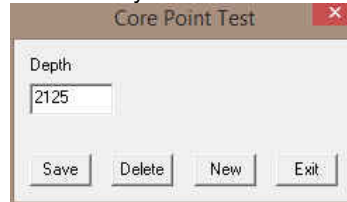
- Double click on the **Test Point Indicator** track / layer to activate the **Core Point Test Builder** window

- Right click** on the **red X** indicating the Test point to activate the Pop out menu and **select Delete**.
- OR** the User can also **type** in a corresponding **value** in the builder and **click** on the **Delete** button.

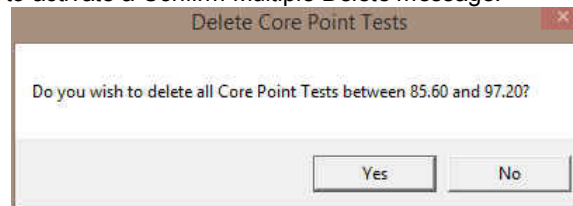
- Repeat **Steps 2** to delete more **Core Point Test** from the layer.
- Once all your test points are entered or you have added more test points, you want them to come out sequentially by depth in the Export Utility you will want to **right click** on the track to activate the pop out menu and select **Renumber Tests**.
- Click on the button or Press the **Esc** key on the keyboard to exit from the **Core Point Test Builder** window.

Deleting Multiple Intervals

- Double click on the **Core Point Indicator** track / layer to activate the **Core Point Test Builder** window.

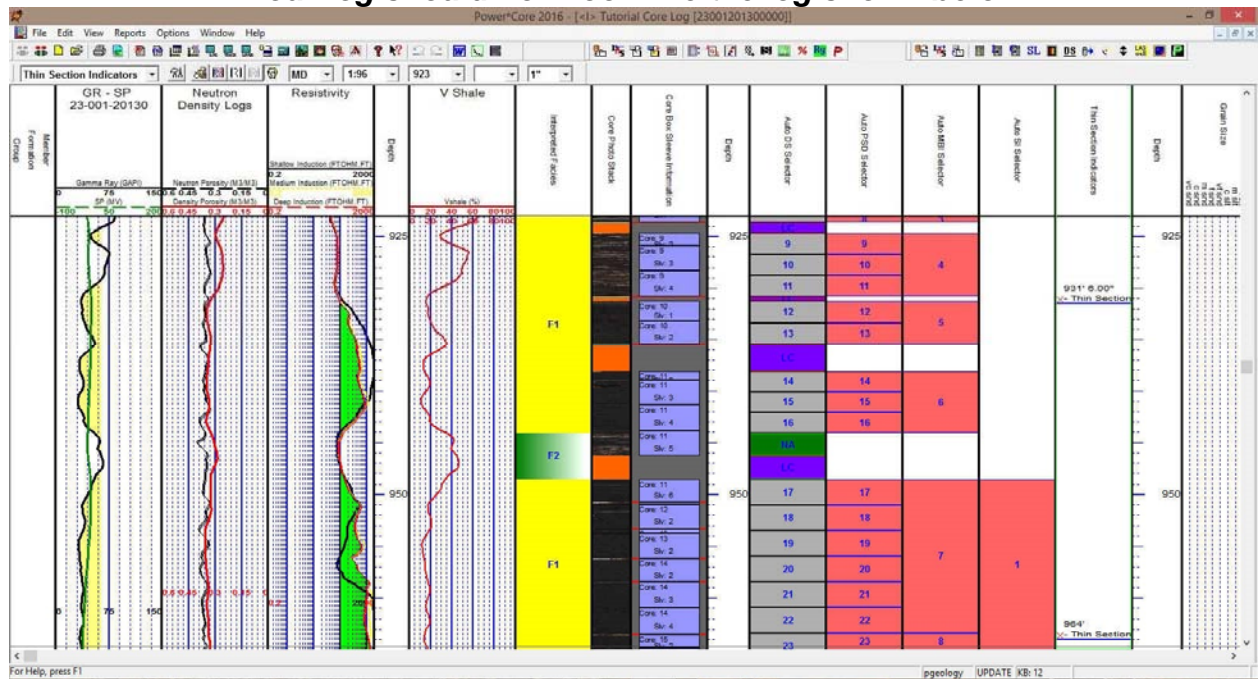


- Press and Hold the **SHIFT** Key and then **click and drag an area** anywhere within the intervals you wish to delete.
- Release the mouse button to activate a Confirm Multiple Delete message.



- Click on button and the **Core Point Test** encompassed with your drag will be deleted accordingly.
- Once all your test points are deleted, you want them to come out sequentially by depth in the Export Utility you will want to **right click** on the track to activate the pop out menu and select **Renumber Tests**.
- Click on the button or Press the **Esc** key on the keyboard to exit from the **Core Point Test Builder** window.

*****Your log should now look like the log shown below*****

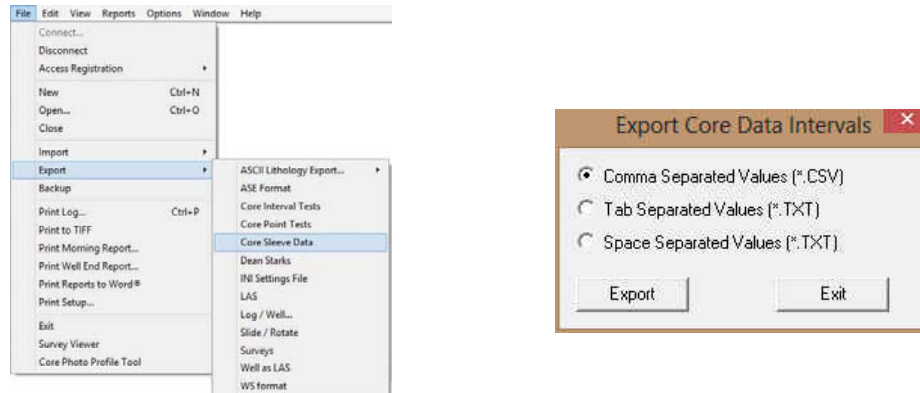



Export Core Sleeve Data

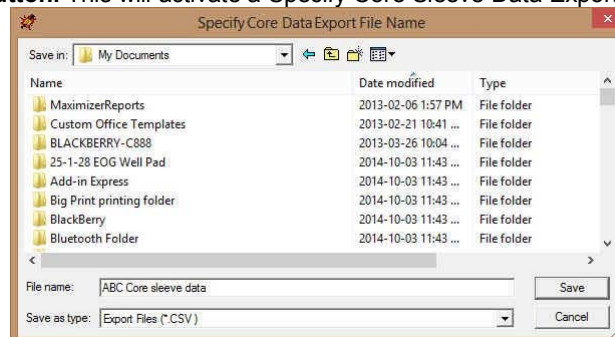
This utility exports your (presumably) depth corrected Core Sleeve data after the Core Photos have been imported and cleaned up to pass back to the Laboratory label the core photos with the corrected depths. The Core sleeve data contains the Core #, Sleeve # along with the top and bottom of each sleeve. Also contained in this data are the core designation types for rubble and slough. This data can be exported into 3 file formats which can then be used by other applications.


Exporting Core Sleeve Data

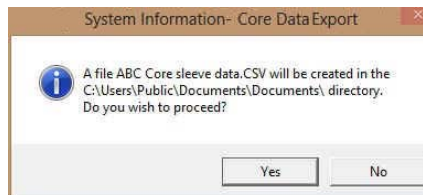
To access the Export Core Sleeve Data window, click on **Export** under **File** to activate the pop-out menu and then **select Export Core Sleeve data**. You can also select the  icon on the Export toolbar. This will activate the Export Core Sleeve Data Intervals window.

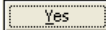


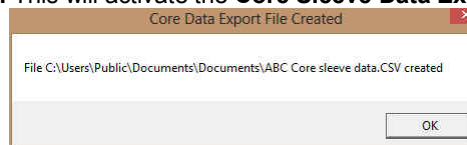
1. Click on the radio button next to the type of the file that you would like to create.
2. Click on the  button. This will activate a Specify Core Sleeve Data Export File Name window.

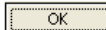


3. Type in a file name and select the drive and directory you wish the survey to be exported to. Then, click on the  button. This will activate the System Information window asking you if you wish to proceed.



4. Click on the  button. This will activate the Core Sleeve Data Export File Created window.



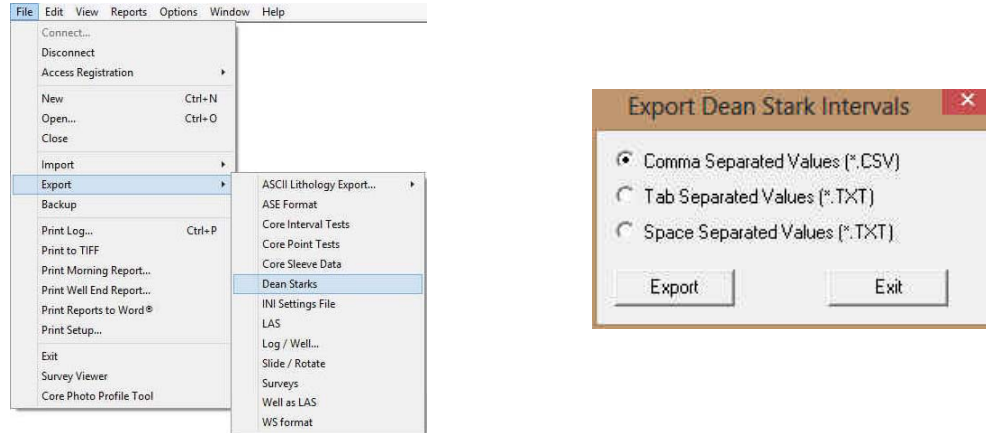
5. Click on the  button to exit Export Core Sleeve Data window.

Export Dean Starks Test Data

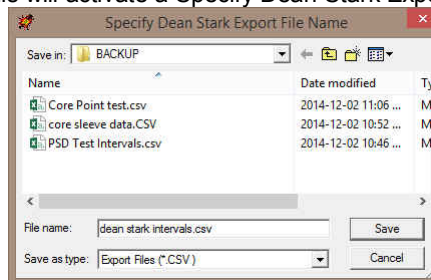
This utility exports your Calculated Dean Starks Intervals automated by the system with the help of the Interpretive Facies layer. This data will be passed back to the Laboratory for the Dean Stark intervals to be performed on the core. The data contains the Test Type (layer Name), Test #, along with the top and bottom of each test interval. This data can be exported into 3 file formats which can then be used by other applications.

Exporting Dean Starks Test Data

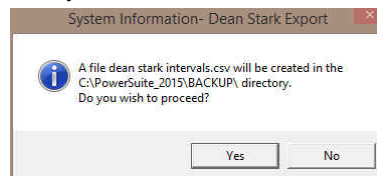
To access the Export Dean Starks Test Data window, click on **Export** under **File** to activate the pop-out menu and then select Export Dean Starks Test Data. You can also select the **DS** Icon on the Export toolbar. This will activate the Export Dean Starks Test Data window.



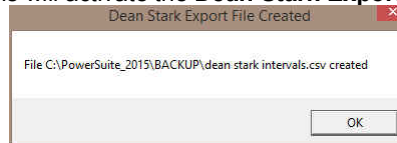
1. Click on the radio button next to the type of the file that you would like to create.
2. Click on the **Export** button. This will activate a Specify Dean Stark Export File Name window.



3. Type in a file name and select the drive and directory you wish the survey to be exported to. Then, click on the **Save** button. This will activate the System Information window asking you if you wish to proceed.



4. Click on the **Yes** button. This will activate the Dean Stark Export File Created window.




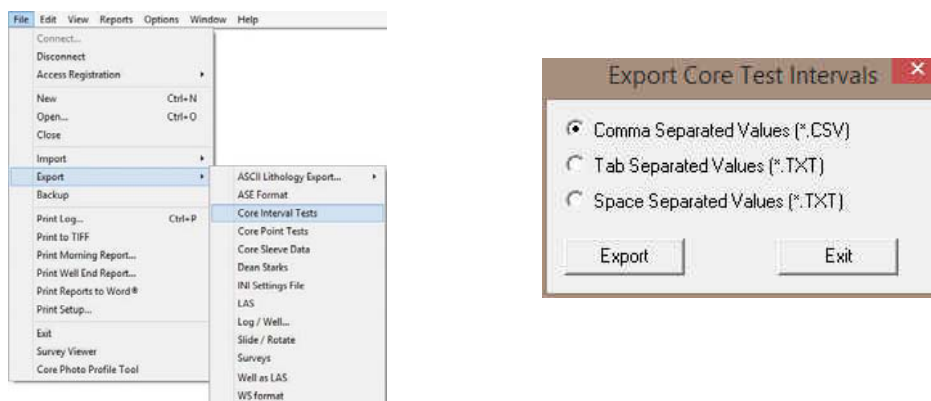
5. Click on the **OK** button to exit Export Dean Stark Data window.


Export Core Interval Test Data

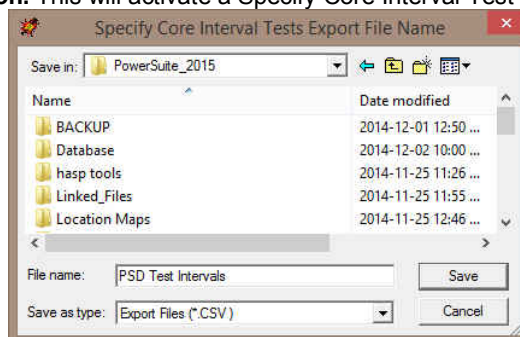
This utility exports your Core Interval Test data (that can be locked to the Dean Stark Intervals or can be random) to pass back to the Laboratory for different Test Intervals to be done on the core. The Core Interval Test data contains the Test #, Test Type (layer name) along with the top and bottom of each Test. This data can be exported into 3 file formats which can then be used by other applications.

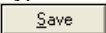
Exporting Core Interval Test Data

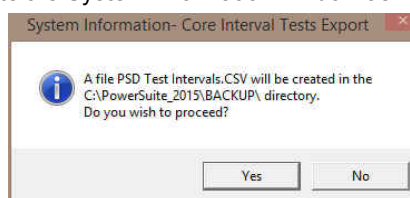
To access the Core Test Interval Data export window, click on **Export** under **File** to activate the pop-out menu and then **select Core Interval Test**. You can also select the  Icon on the Export toolbar. This will activate the Export Core Test Intervals window.

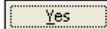


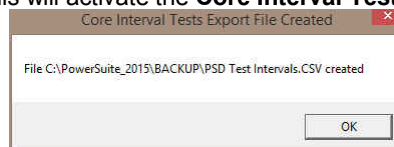
1. Click on the radio button next to the type of the file that you would like to create.
2. Click on the  button. This will activate a Specify Core Interval Test Export File Name window.



3. Type in a file name and select the drive and directory you wish the survey to be exported to. Then, click on the  button. This will activate the System Information window asking you if you wish to proceed.



4. Click on the  button. This will activate the Core Interval Test Export File Created window.



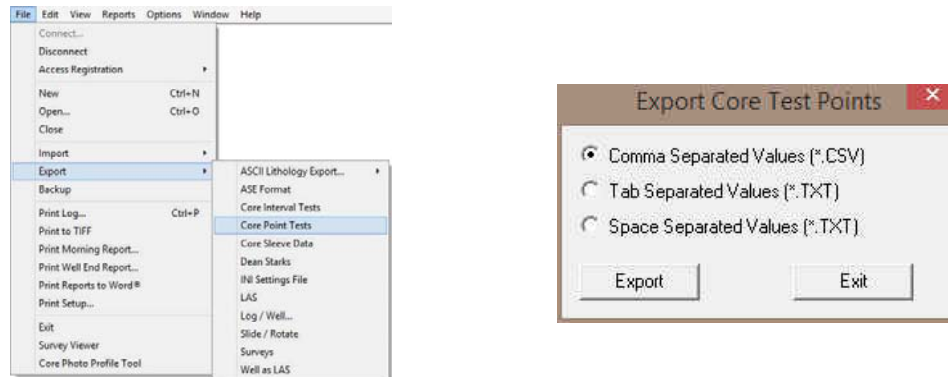
5. Click on the  button to exit Export Interval Test window.


Export Core Test Points Data

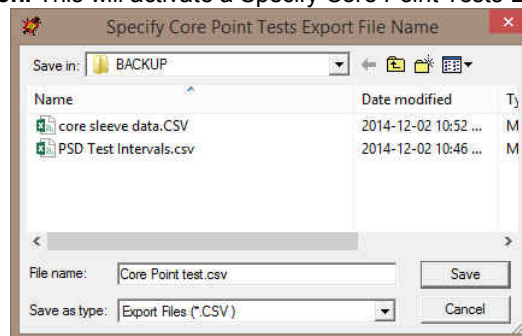
This utility exports your Core Point Test data to pass back to the Laboratory for different Test Points to be performed on the core. The Core Point Test data contains the Test #, Test Type (layer name) along with test point for each Test. This data can be exported into 3 file formats which can then be used by other applications.

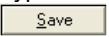
Exporting Core Test Points Data

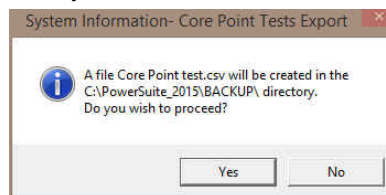
To access the Core Test Points Data export window, click on **Export** under **File** to activate the pop-out menu and then **select Core Point Tests**. You can also select the  Icon on the Export toolbar. This will activate the Export Core Test Point window.

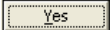


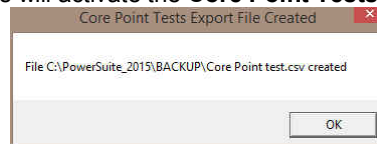
1. Click on the radio button next to the type of the file that you would like to create.
2. Click on the  button. This will activate a Specify Core Point Tests Export File Name window.



3. Type in a file name and select the drive and directory you wish the survey to be exported to. Then, click on the  button. This will activate the System Information window asking you if you wish to proceed.



4. Click on the  button. This will activate the Core Point Tests Export File Created window.

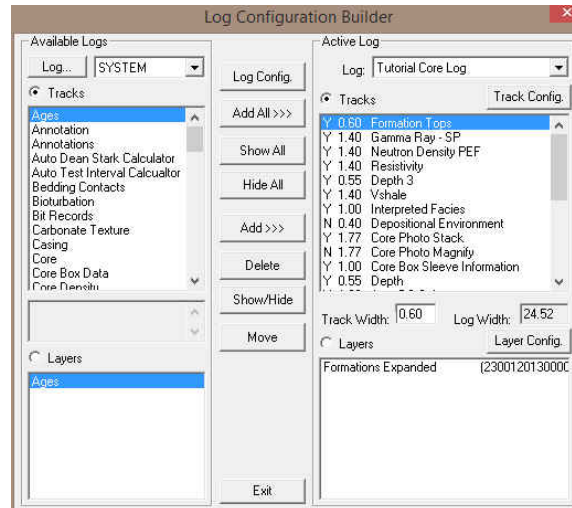


5. Click on the  button to exit Export Point Tests window.

Turning Off / On Tracks that will not be required from this point on.

The Log Configuration Builder window

1. Click on **Log Configuration Builder** under the **Options** menu on the **Selection Bar** or click on the **Log Configuration Builder** button on the **Toolbar** to activate window:



Fundamentals of the Log Configuration Builder Window

The right side of the Log Configuration Builder window: **Active Log**

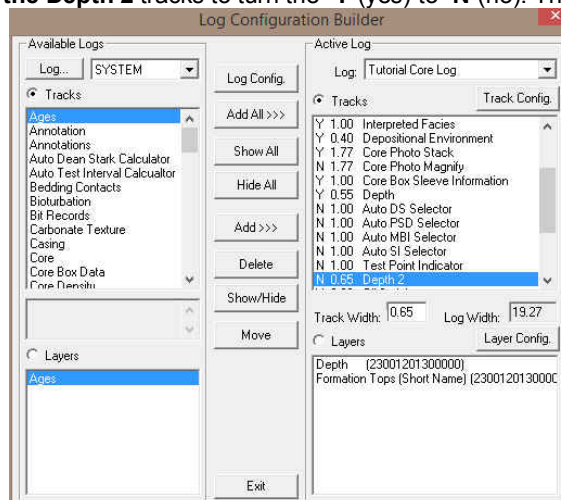
The **Active Log** section or **right** side of the window displays the tracks and layer configuration of the **Active Log** (the log you are currently creating), in the main **Power*Core** window. The name of the log is viewed in the **Log** field. In this case, it will be "Tutorial Core Log for Facie Intervals."

Turning on a track...

- 1.) Scroll down the tracks list, on the **right** side of the **Log Configuration Builder** window, and click on the **Depositional Environment** track.
- 2.) Click on the **Show/Hide** button to turn the "Y"(yes), to the left of the track name, to "N"(no), indicating that the track will not be shown on the log, until it is reactivated.
- 3.) Alternatively, you can simply **double click** on the **Depositional Environment** to turn the "Y"(yes) to "N"(no). The user might notice the log width has now increased.

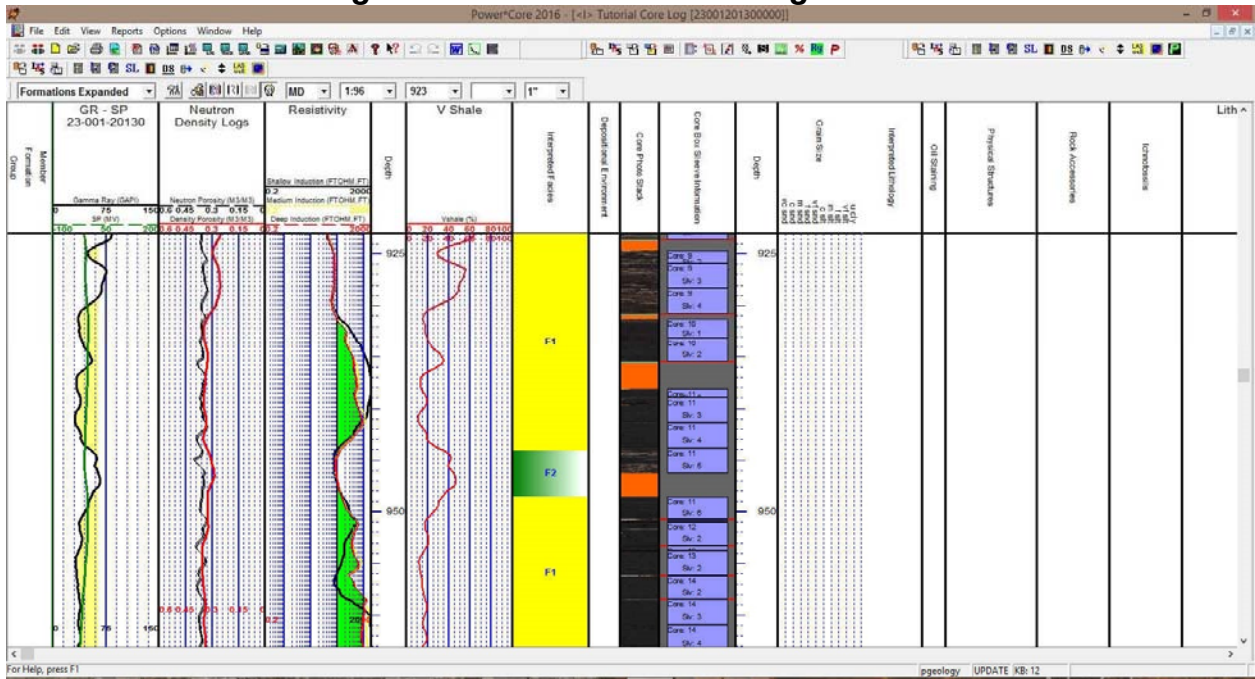
Turning off tracks...

- 4.) Scroll down the tracks list, on the **right** side of the **Log Configuration Builder** window, and **double click** on the **Core Box Sleeve Information**, **Auto DS Selector**, **Auto PSD Selector**, **Auto MBI Selector**, **Auto SI Selector**, **Test Point Indicator**, and the **Depth 2** tracks to turn the "Y"(yes) to "N"(no). This will change the log width.



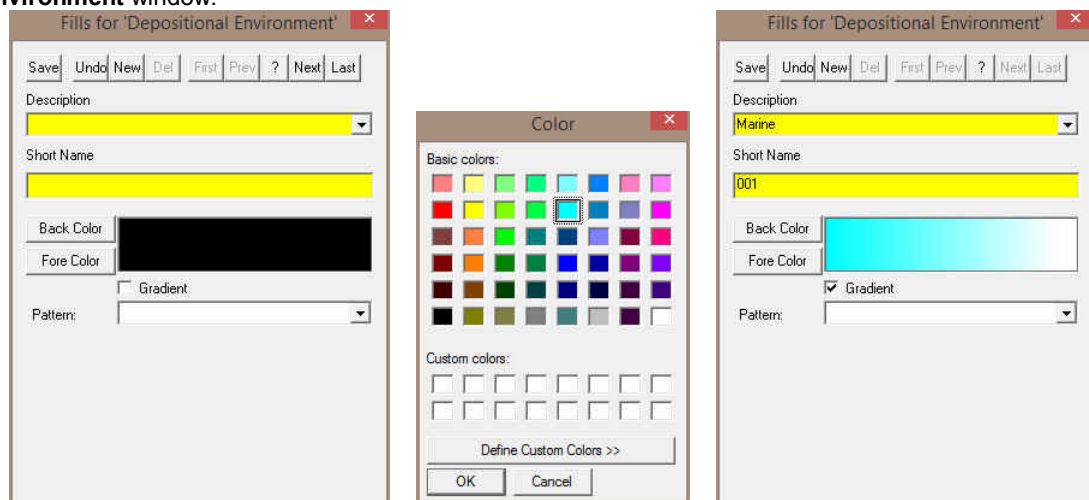
- 18.) Click on the **Exit** button. This will close the builder and the log will reflect all the changes you just made.

****Your log should now look like the log shown below****



Adding Depositional Environments to the Depositional Environment Track

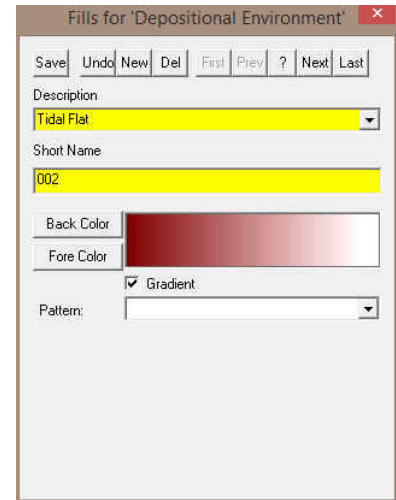
- 1.) **Double click** anywhere within the **Depositional Environment** track to activate the **Fills for Depositional Environment** window.



- 2.) **Type Marine** into the Description field.
- 3.) **Type 001** into the Short name field.
- 4.) **Click** on the **Back Color** button and **select a blue color** from the palette and then **click** on the **OK** button.
- 5.) **Click** on the **Gradient** ☒ **Gradient** to activate a check mark.
- 6.) **Click** on the **Save** button and then **select Start New Record** from the ensuing **Shortcut Options** window. This will clear the window and allow the user to enter a new record.

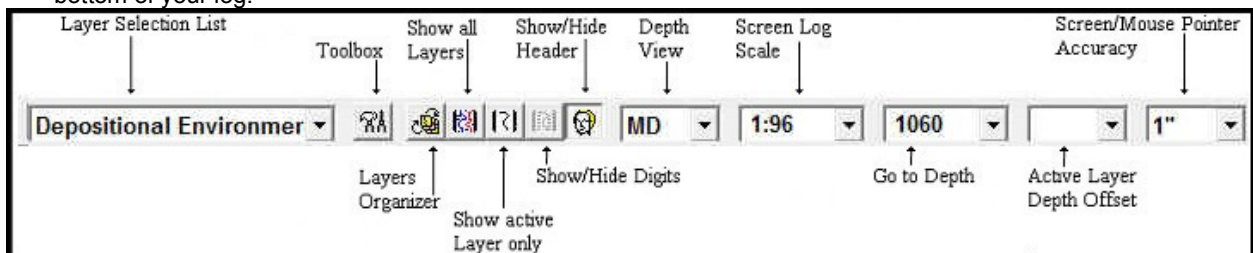
Adding more Environments to the Depositional Environment fill category...

- 7.) **Type Tidal Flats** into the Description field.
- 8.) **Type 002** into the Short name field.
- 9.) **Click** on the **Back Color** button and **select a maroon color** from the palette and then **click** on the **OK** button.
- 10.) **Click** on the **Gradient** ☒ Gradient to activate a check mark.
- 11.) **Click** on the **Save** button and then **select** **Start New Record** from the ensuing **Shortcut Options** window. This will clear the window and allow the user to enter a new record.
- 12.) **Type Channel** into the Description field.
- 13.) **Type 003** into the Short name field.
- 14.) **Click** on the **Back Color** button and **select a brown color** from the palette and then **click** on the **OK** button.
- 15.) **Click** on the **Gradient** ☒ Gradient to activate a check mark.
- 16.) **Click** on the **Save** button and then **select** **Start New Record** from the ensuing **Shortcut Options** window. This will clear the window and allow the user to enter a new record.
- 17.) **Type Estuarine** into the Description field.
- 18.) **Type 004** into the Short name field.
- 19.) **Click** on the **Back Color** button and **select an orangey color** from the palette and then **click** on the **OK** button.
- 20.) **Click** on the **Gradient** ☒ Gradient to activate a check mark.
- 21.) **Click** on the **Save** button and then **select** **Exit** from the ensuing **Shortcut Options** window. This will close the Add / Edit Fills Window and you will be back into the builder window.

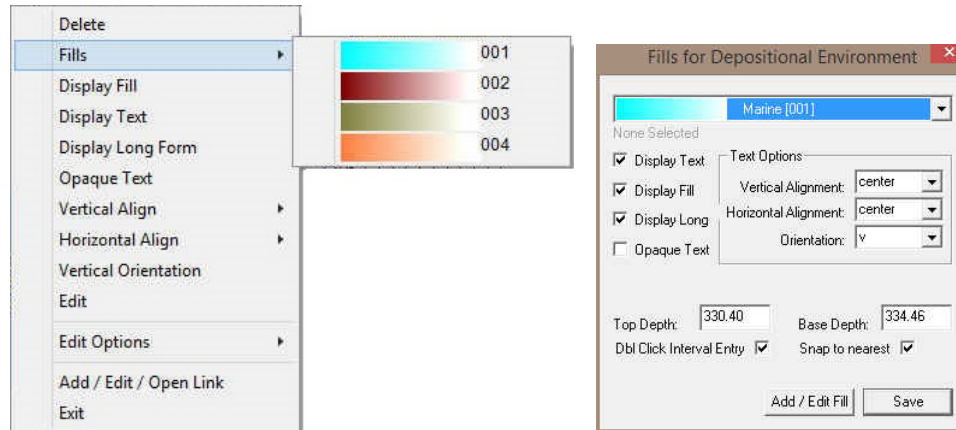


Drawing Environments onto the Depositional Environment Color Fill Track...

- 1.) **Double click** on the **Depositional Environment Track** to activate the window.
- 2.) We will want to move to the lower part of the core log so **type** in the **Go To Depth field 1060** and press tab on key pad. **Change** your log viewing **scale** to **1:96** and your **Mouse pointer accuracy** to **1"**. You should see the bottom of your log.



- 3.) **Right click** in the **Depositional Environment track** to activate the pop out window, **select fills** and **click** on the **001 selection**. Or **click** on the **builder drop box** and **select Marine [001]**.



- 4.) If you have followed the tutorial you will have a facies drawn in over the bottom Limestone interval. You can now **double click** within the Depositional Environment track anywhere between the depths of **1098' 1" to 1084' 3"** If you do not have a facies entered you can **click and drag up or down from 1098' 1" to 1084' 3"** within Depositional Environment track to define the interval. The Marine environment should be displayed in that interval.
- 5.) **Right click** on the **Marine Environment** and **Select opaque Text** and then **right click** on the **Marine interval** and **Select Vertical Orientation**.
- 6.) **Right click** on an empty area in the **Depositional Environment track** to activate the pop out window, **select fills** and **click** on the **003 selection**. Or **click** on the **builder drop box** and **select Channel [003]**.
- 7.) **Double click** within the Depositional Environment track anywhere between the depths of **1025' to 1084' 3"**. Or define the interval by **clicking and dragging** within the environment track from or close to 1/4" (if the **Snap to nearest** is activated) **1025' to 1084' 3"**. You can also **type** in the **depths** in the builder and **click on the** button. The Channel environment should be displayed in that interval.
- 8.) Keep **scrolling** up the log **entering** your **Depositional Environments**.

Below is a table of the Depositional Environments that I have entered.

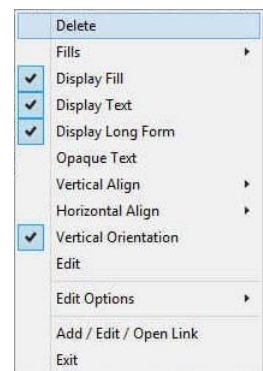
From Depth	To Depth	Long Name	Short Name
1084' 3"	1098' 1"	Marine	001
1025'	1084' 3"	Channel	003
1017' 9"	1025'	Tidal Flat	002
999' 4"	1017' 9"	Channel	003
996' 11"	999' 4"	Tidal Flat	002
948' 7"	996' 11"	Channel	003
944' 1"	948' 7"	Tidal Flat	002
929' 8"	944' 1"	Channel	003
869' 1"	929' 8"	Tidal Flat	002
861' 8"	869' 1"	Channel	003
851' 9"	861' 8"	Estuarine	004
848' 2"	851' 9"	Marine	001

To **resize** an existing fills **hold your Ctrl Key down** on your keypad and **move mouse pointer over the end part of the interval until it turns into a resize cursor** and then **click and drag** to a new depth. Remember you cannot overwrite existing intervals.

To **delete** an existing interval **right click on the interval** and **select delete** from the pop out menu.

To **delete multiple intervals** hold the **SHIFT key** and **click and drag over an interval** within the Depositional Environment track and then release.

- 9.) Click on the close button in the upper right hand corner of the builder. This will close down the Environment builder window.



Adding Formation Tops

- 1) Click on **Formation**, under **Reports**, OR the user can double click on the Group Formation Member Track and this will activate the **Well Formation**. The user can also utilize this window to input data for an Ages layer / track, a Formation Long Name and a formation short name layers / track. Our log has a formation short name layer in the Depth track. A Formation Evaluation and a Tops report can also be generated from this data.

The screenshot shows the 'Well Formation' window with the following data entered:

- Buttons: Save, Undo, New, Del, First, Prev, ?, Next, Last
- K.B.: 12, Ground: 3, Casing Flange: 3
- Group: Short, Long
- Formation: Clearwater
- Member: lw, Wabiska
- Seq#: , Long Name Display Depth:
- Subsea: -791.00, Alignment: right
- Era: cenozoic, Series: lower
- Period: k [cretaceous], Stage: albian
- Age: million years
- Thickness: MD: 48.75, TVD: 48.75, Calculate Thickness
- Tops: MD, TVD
- Prognosis:
- Sample: 803, 803
- Log: 803, 803
- Display: Prog, Smpl, Log (selected)

- 2) If there is a Formation Top entered (the deepest will show up upon activation) Click on the **New** button to clear the form and get you ready to enter another Formation Top.
- 3) **Type Clearwater** into the **Formation Long Name** field.
- 4) **Select conformable** from the **Boundary Type** drop box.
- 5) **Type in 803** in the **Log Top (MD)** field, **tab** and **type 803** in the **Log Top (TVD)** field.
- 6) **Click on the Log radio button** is the Display portion of the window.
- 7) **Click on the Save button** and then select **Start New Record** from the ensuing **Shortcut Options** window. This will clear the window and allow you to enter a new record.

The screenshot shows the 'Well Formation' window with the following data entered:

- Buttons: Save, Undo, New, Del, First, Prev, ?, Next, Last
- K.B.: 12, Ground: 3, Casing Flange: 3
- Group: Short, Long
- Formation: McMurray
- Member: um, Upper
- Seq#: , Long Name Display Depth:
- Subsea: -839.75, Alignment: right
- Era: mesozoic, Series: lower
- Period: k [cretaceous], Stage: aptian
- Age: million years
- Thickness: MD: 76.50, TVD: 76.50, Calculate Thickness
- Tops: MD, TVD
- Prognosis:
- Sample: 851.75, 851.75
- Log: 851.75, 851.75
- Display: Prog, Smpl, Log (selected)

- 8) **Type Mannville** into the **Group long name** field, **tab** twice, and **type McMurray** into the **Formation Long Name** field, **tab**, **type um** into the **Member Short name** field, **tab**, and **type Upper** into the **Member Long Name** field.
- 9) **Select conformable** from the **Boundary Type** drop box.
- 10) **Type in 851.75** in the **Log Top (MD)** field, **tab** and **type 851.75** in the **Log Top (TVD)** field.
- 11) **Click on the Log radio button** is the Display portion of the window.
- 12) **Click on the Save button** and then select **Start New Record** from the ensuing **Shortcut Options** window. This will clear the window and allow the user to enter a new record.

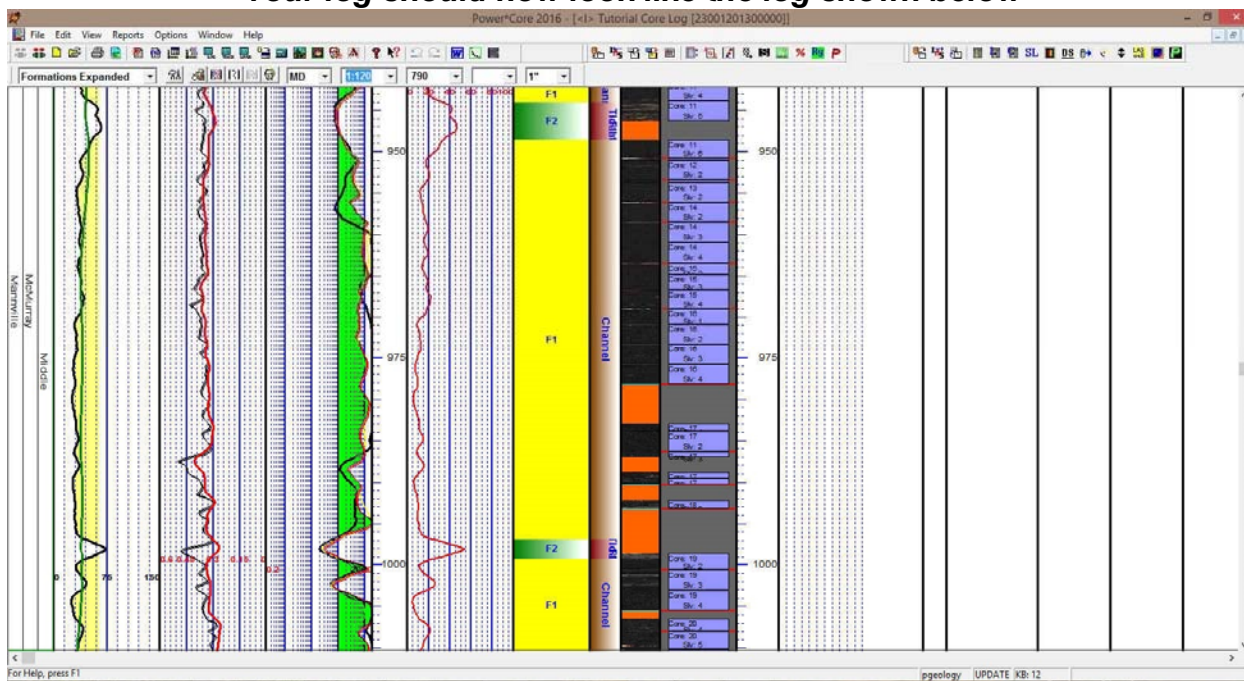
- 13) Type **Mannville** into the **Group long name** field, **tab** twice, and type **McMurray** into the **Formation Long Name** field, **tab**, type **mm** into the **Member Short name** field, **tab**, and type **Middle** into the **Member Long Name** field.
- 14) Select **conformable** from the **Boundary Type** drop box.
- 15) Type in **929.67** in the **Log Top (MD)** field, **tab** and type **929.67** in the **Log Top (TVD)** field.
- 16) Click on the **Log** radio button in the Display portion of the window.
- 17) Click on the **Save** button and then select **Start New Record** from the ensuing **Shortcut Options** window. This will clear the window and allow the user to enter a new record.

- 18) Type **Mannville** into the **Group long name** field, **tab** twice, and type **McMurray** into the **Formation Long Name** field, **tab**, type **lm** into the **Member Short name** field, **tab**, and type **Lower** into the **Member Long Name** field.
- 19) Select **conformable** from the **Boundary Type** drop box.
- 20) Type in **1025** in the **Log Top (MD)** field, **tab** and type **1025** in the **Log Top (TVD)** field.
- 21) Click on the **Log** radio button in the Display portion of the window.
- 22) Click on the **Save** button and then select **Start New Record** from the ensuing **Shortcut Options** window. This will clear the window and allow the user to enter a new record.

- 23) Type **Devonian** into the **Formation Long Name** field.
- 24) Select **angular unconformable** from the **Boundary Type** drop box.
- 25) Type in **1084.25** in the **Log Top (MD)** field, **tab** and type **1084.25** in the **Log Top (TVD)** field.

- 26) Click on the **Log radio button** is the Display portion of the window.
- 27) Click on the **Save** button and then select **Exit** from the ensuing **Shortcut Options** window. This will close the window and allow you to view your data entries on the log.

****Your log should now look like the log shown below****



Core Descriptions

This report allows you to describe a Core on an interval basis. The long descriptions will be used in the Core Description Report that is printed out in the Well End Report print window. The ascending check box has been added so that user can either describe the core from the bottom up or the top down. The depth intervals in the Core Description window must still be entered in ascending order.

Note: If the descriptions are entered into this Core Description report and transferred to the Corelog and then edited on the Corelog the descriptions entered in this Core Description reports remain unchanged.

Core Description

Save Undo New Del First Prev ? Next Last Dictionary

Auto Next ☐ Ascending Interval... Rock Type / Heading

1098.08 1084.25 to 1098.08 TOP OF DEVONIAN

Short Description To Long Desc

LS m - lt gy nuds in lt - m gy ls mtr. Occ lt - m gy ls intbd / lt gy arg ls. TOTAL DEPTH: 1134'

Long Description To Short Desc

TOP OF DEVONIAN

LIMESTONE medium to light gray nodules in light to medium gray limestone matrix. Occasional light to medium gray limestone interbedded with light gray argillaceous limestone. TOTAL DEPTH: 1134'

Transfer Options:

☒ Automatic Description transfer

Transfer to Annotation Group: lithtext1

☐ Transfer Depth Range ☒ Top Depth Only ☒ Transfer Short Form

The **Dictionary** button activates the **Geology Dictionary** window that allows you to add, edit and delete abbreviations and long forms from the expansion dictionary.

The **Auto Next** button with the ☒ **Ascending** check box activated will copy the **from** depth (from the last saved record) and paste it into the **to** field. Core Descriptions from the top down.

The **Auto Next** button with the ☐ **Ascending** check box not activated will copy the **to** depth (from the last saved record) and paste it into the **from** field. Core Descriptions from the bottom up.

This will advance the Top Depth with the Base depth value. This will only be implemented when the record is saved.

The ☒ **Ascending** check box when activated will advance the Top Depth with the Base depth value. This will only be

implemented when the record is saved and the **Start New Record** option is chosen. Core Descriptions from the top down. If the ☐ **Ascending** check box is not activated the descending order will be implied and the Top depth will be place in the Base depth field. **Core Descriptions from the bottom up.**

The **Interval...** button displays a list of descriptions that have been entered to date for the current well.

The **To Long Desc** button expands the text you have typed in the **Short Description** field and places them in the **Long Description** field.

The **To Short Desc** button abbreviates the text you have typed in the **Long Description** field and places them in the **Short Description** field.

Automatic Description Transfer Options

The **Automatic Description transfer** check box ☒ when activated will automatically transfer the sample description to the log when it is saved. It will transfer with the options specified in the transfer Options discussed below.

The **Transfer to Annotation Group** selection drop box indicates which group the description is being transferred to. This window will default to Lithtext1. If this is not the group you wish to transfer you descriptions to select a different group from this drop box.

Note: The first log created for a well will have a lithology description layer identified with a group called lithtext1, the second log created for a well will have a lithology description layer identified with a group called lithtext2 etc. The user can select any annotation group that exists for that well.

The **Transfer Depth Range** check box ☒ when activated will transfer the from and to depth interval to the log.

The **Transfer Top Depth Only** check box ☒ when activated will transfer only the from depth interval to the log.

The **Transfer Short Form** check box ☒ when activated will transfer the short description to the log. When this selection is unchecked the samples long sample description will be transferred to the log.

Adding a Core Description

1. Click on **Core Description** under the **Reports** menu selection to activate the **Core Description** window.
2. If there is a Core Description entered (the deepest will show up upon activation) Click on the **New** button to clear the form and get you ready to enter another Core Description.

3. We will **setup** the Core Description window to **transfer** the Core Descriptions in their long form, with a Top Depth Only, to the Lithtext1 Group. To do so make the Transfer Options according to the picture above.

Every Lithology Description layer or Annotation Layer has a designated group associated with it. The first log created for a Core will have a group lithtext1 associated with it. If it is a second log for that core it will have a lithtext2 group. Etc. etc. etc.

4. Type 1084.25 in the **From** field and press the **Tab** key to advance to the **to** field and type 1098.08. Press the **Tab** key on the keyboard to move to the next field.
5. Type in the **TOP OF DEVONIAN** in the **Rock Type / Heading** field and press the **Tab** key.
6. Type the **Short** (abbreviated) **Description** shown below into the **Short Description** field.
LS m - lt gy nods in lt - m gy ls mtx. Occ lt - m gy ls intbd / lt gy arg ls. TOTAL DEPTH: 1134'.

Note: Any abbreviations that are misspelled or are not found in the **Geology Dictionary** will not be expanded.

Note: When you type your abbreviations in ALL CAPS, your long description will be ALL CAPS as well. Similarly, if you use all lower case letters in your abbreviations, your expanded description will be all lower case. You are also able to use capital letters to begin your abbreviations and leave the remaining letters in lower case. This will produce lower case words that are capitalized in the long description.

Note: You also have the option of typing out the non-abbreviated form of the **Core Descriptions** into the **Long**

Description field and then clicking on the **To Short Desc** button to display the abbreviated form of the **Core Descriptions** in the **Short Description** field.

7. Click on the **Save** button and then select **Start New Record** from the ensuing **Shortcut Options** window. This will clear the window and allow the user to enter a new record.

Note: If you Click more than once on the **Save** button with **Automatic Description transfer** check box ☒ activated the Core Descriptions will keep transferring to the Annotation Layer selected but will be placed 1 meter deeper.

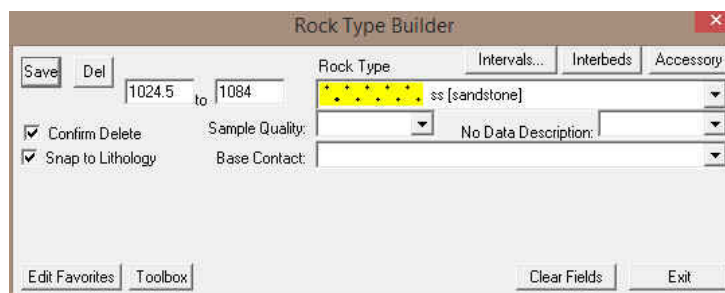
8. **Type 1025** in the **From** field and **press the Tab key twice** to advance to the **Rock Type / Heading** field.
 9. **Type** in the **TOP OF LOWER McMURRAY** in the **Rock Type / Heading** field and **press the Tab** key.
 10. **Type** the **Short** (abbreviated) **Description** shown below into the **Short Description** field.
SS dk brn - blk sd, mas. V Rich O Sd dep. Occlly / rr, mm scale m gy cly strgs @ 1032' - 1032' 6", 1053' to 1054' 10" & 1083' - 1083' 10".
 11. **Click** on the **Save** button and then **select** **Start New Record** from the ensuing **Shortcut Options** window. This will clear the window and allow the user to enter a new record.
 12. Repeat **Steps 8 to 11. For the descriptions below.**
- | FROM DEPTH | TO DEPTH | ROCK TYPE / HEADING | SHORT DESCRIPTION |
|------------|----------|------------------------|---|
| 1084.25 | 1098.08 | TOP OF DEVONIAN | LS m - lt gy nods in lt - m gy ls mtx.
Occ lt - m gy ls intbd / lt gy arg ls.
TOTAL DEPTH: 1134'.
SS dk brn - blk sd, mas. V Rich O Sd dep. Occlly / rr, mm scale m gy cly strgs @ 1032' - 1032' 6", 1053' to 1054' 10" & 1083' - 1083' 10". |
| 1025 | 1084.25 | TOP OF LOWER MCMURRAY | |
| 1017.75 | 1025 | INTBD MDST AND SS | Mdst pred, lt - m gy cly, / rare, mm scale, lt brn sd lams thru.
Dk brn - blk sd, mas. Rich o sd. Mnr Sh lam @ 998' 8"- 1001' 6", 1016' 4"- 1016' 8". |
| 999.33 | 1017.75 | SS | |
| 996.62 | 999.33 | MDST | Mdst pred, lt - m gy cly. |
| 948.58 | 996.62 | SS | Dk brn - blk sd, mas. Rich o sd |
| 944.08 | 948.58 | MDST | Lt - m gy cly intbd / com, mm scale, m - dk brn sd. |
| 929.67 | 944.08 | TOP OF MIDDLE MCMURRAY | SS dk brn - blk, mas o sd, Rich O Sd. |
| 918.17 | 929.67 | SS INTBD / MDST | Ss pred f gred, abnt o stng, dk brn to blk. Mdst fy lamd mm scale. |
| 869.08 | 918.17 | MDST INTBD / SS | Mdst pred, lt gy fy lamd mm scale, Ss dk brn - blk o rich. |
| 861.67 | 869.08 | SS / MNR SH LAM | SS pred, dk brn, o rich sd. Mdst lam dm scale, lt gy, glauic. |
| 851.75 | 861.67 | TOP OF UPPER MCMURRAY | Ss is lt brn, fy lamd / Mdst m gy. |
| 848.17 | 851.75 | MDST | m gy mdst intbd / lt brn sd & glau. |
13. **Click** on the **Save** button and then **select** **Exit** from the ensuing **Shortcut Options** window. This will close the window and allow you to view your data entries on the log.

Note: IT IS IMPORTANT TO SAVE EVERY RECORD!! You must **click** on the **Save** button or press **ALT-S** every time you finish entering a new record.

Interpreted Lithology Layer - Rock Type Builder

This window will allow you to draft on the Interpreted Lithology Layer. The user can utilize the accessory builder. The user may also define the basal contact if they have the Power*Core Module. This layer can be linked to the Interpretive facies layer on a Facies Log in Power*Core.

Overview of Rock type builder window



Save Button The user can enter the depths into the two depth fields with either a rock type or no data fields filled in and then **click** on the **Save** button. Their interval will now be drawn on the Interpretive Lithology Track.

Del Button: The user can click on an existing interpretive lithology interval and the corresponding data will be shown in the builder. The user can then **click** on the **Del** button to delete the interval.

Confirm Delete: Check box when activated will prompt the user with a Confirmation window Do you really want to delete? If this **Confirm Delete** is unchecked the Lithology Interval will be deleted without any system message.

Snap to Lithology: This **Check box** when activated will not allow spaces between beds on the Interpretive Lithology Layer when you are using the mouse (not the keypad) when entering Lithology Intervals. This function will work if you are within 1/4" of an existing Interval and will snap to the lithology interval already drawn on your log.

Edit Favorites Button allows the user to get to the **System Options Favorites Tab**. The user would go into the

Rock Favorites Button will access the Favorites Tab in the System Options window to change their rock favorites.

Toolbox Button allows the user to Turn on or off the Toolbox.

Intervals... Button will activate a list of the Interpretive Lithology Intervals in your active well. The user can select any interval from this list and can then modify or delete this interval.

Interbeds Button Once a Lithology interval has been defined or selected and can be viewed in the builder the user can **click** on

Interbeds Button to activate the Interbeds builder.

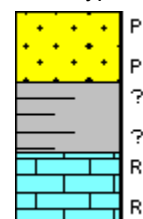
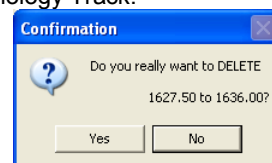
Accessory Button allows the user to switch to the Accessory builder so they can add accessories to the Rock type intervals they have defined in the Rock type builder.

The from and to fields are entered manually through the key board or can be activated through a mouse drag. The rock type drop box will have all the rock types that are in the system.

The **Sample quality** further defines the lithology interval with one of the three qualities such as Questionable, Poor or Rubble core / sample quality symbols as shown on the right.

The **No Data Description** selection allows the user to define a Lithology interval on the log with one of the no data descriptions as shown on the right.

Once a Lithology interval has been defined or selected and can be



Lost Core
Missing
No Sample
Over Burden
Preserved

viewed in the builder the user can **click** drop box and add a basal contact.

- Clear Fields** Button will clear all the fields in the Rock Type builder. The user can then start fresh.
- Exit** Button will close down the Rock Type builder

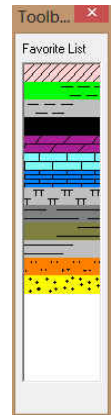
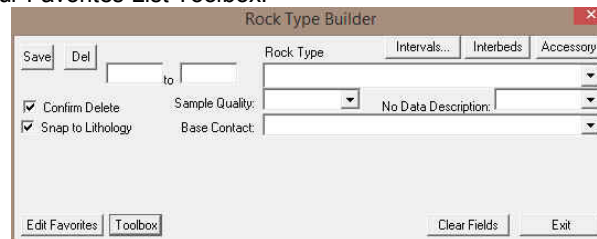
Drafting an Interpreted Lithology Interval

We want you to **change your log scale to 1:48, Go to Depth of type 1080, tab out** and change your **Mouse Pointer Accuracy to 1"**.

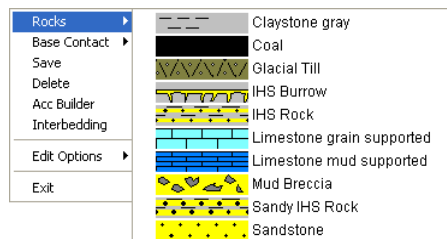
This will be done from the Power*Core Selection bar as shown below.



1. **Double click** anywhere within the **Interpreted Lithology** track to activate the **Rock Type Builder** window as well as your Favorites List Toolbox.

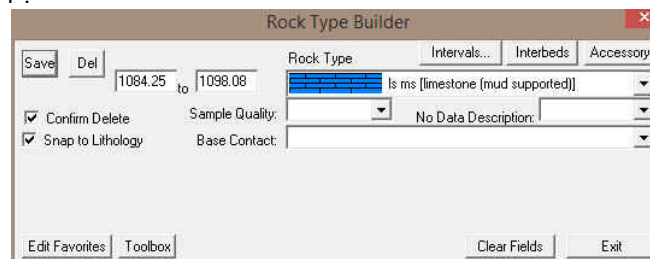


2. **Select Limestone (mud supported).** There are 4 ways to select a rock type, some faster than others.
 - The user can **click** on the desired **Rock Type** from the Favorites Toolbox shown to the right.
 - The user can **right click** anywhere within the **Interpretive Lithology** track to activate the pop-up menu which will also show your favorites list shown below. Then select by **clicking once** on the desired **Rock Type** from the pop-up menu.
 - The user can select a **Rock Type** from the **Rock Type** field within the **Rock Type Builder** window (all your rock types), if the desired **Rock Type** is not displayed in the pop-up menu or Toolbox.
 - The user can also **click** on a **previously drawn lithology** that is the same as you wish to draw with. If done correctly the selected rock type will be automatically displayed in the **Rock Type** field within the **Rock Type Builder** window.



Note: The graphical images utilized in the pop-up menu represent specific **Rock Types** that can be edited by clicking on the **Edit Favorites** button by the user in the **System Options** window (See the **System Options** section).

3. Because your log format is a **Facies Log** the user can **hold the CTRL key down** and **double click** on the interpretive lithology layer and the Limestone will fill in the interval that the interpretive facies has been drawn from 1084' 3" to 1098' 1".




4. **Or you can Click and drag** up or down within a specific track to define the lithology interval from **1084' 3.00"** to **1098' 1.00"**. **Release** the mouse button and the interval will be drawn accordingly.

1084' 3.00"
1098' 1.00"

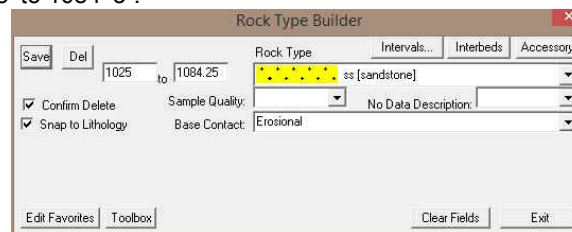
5. **Or Type** in the **Intervals** in the **1084.25** in the **from field** and **1098.08** in the **to field** in the builder and **click** on the **Save** button.
6. If there is a rock type defined above and below (within 300 feet) and you want to fill in the interval simply **double click** in the interval and it will fill in with the No data or Rock type selected.

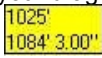
Note: The clicking and dragging can be done on any track (as long as you stay within the confines of that track) but more often than not the Interpretive Lithology Track is the most convenient. With the ☒ **Snap to Lithology** activated the lithology being drawn will snap to the previous lithology either above or below depending on your drag if you are within 1/4 inch of the already drawn lithology.

Note: If you happen to do something wrong remember you have an **UNDO** under the **Edit Menu** selection. Also there is an  button on the Toolbar.

Drafting some more Interpretive Lithology

1. **Select Sandstone for a rock type.**
2. If you have drawn the Interpretive Facies Intervals from a previous section you can now **CTRL key down** and **double click** on the interpretive lithology layer and the Sandstone will fill in the interval that the interpretive facies has been drawn from 1025' to 1084' 3".



3. Clicking and dragging over such a large interval will be impossible to do with the log scale we have. The user will not be able to scroll while dragging. You could change the Log Scale to 1:200 and scroll up 1 page to give you the ability to view the top and bottom of your drag. And now you can **Click and drag** up or down within a specific track to define the lithology interval from . **Release** the mouse button and the interval will be drawn with Sandstone accordingly. Precision at 1:200 is quite lacking at this scale. You could also start the drag to fill in sandstone, scroll and then resize the sandstone to fit.
4. **Or, Type** in the **Intervals** in the **1025** in the **from field** and **1084.25** in the **to field** in the builder and **click** on the **Save** button.
5. If there is a rock type defined above and below (within 300 feet) and you want to fill in the interval simply **double click** in the interval and it will fill in with the No data or Rock type selected.

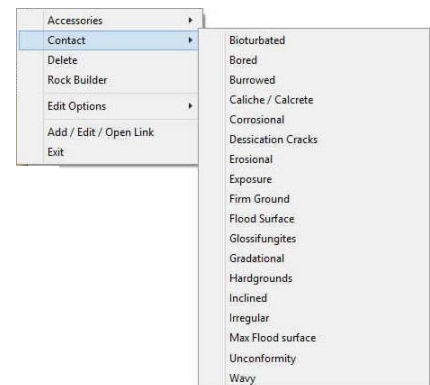
Basal Contacts

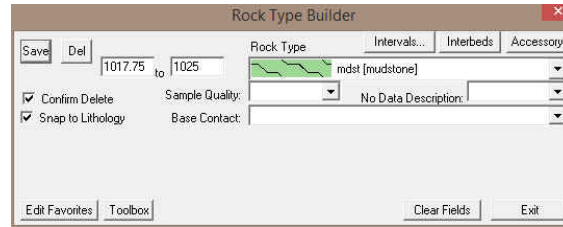
6. The user can now define the basal contact type by **right clicking** on the **Sandstone bed** just drawn above to activate the pop out menu.
7. **Click** on **Base Contact** Selection to activate the pop out menu.
8. **Click** on the **Erosional** Contact. This will fill in the contact between the mud support limestone and the sandstone bed you just drew.

The basal contacts will be displayed on the interpreted lithology layer, the grain size and carbonate texture layers, as well at the bedding contacts layer if any are present.

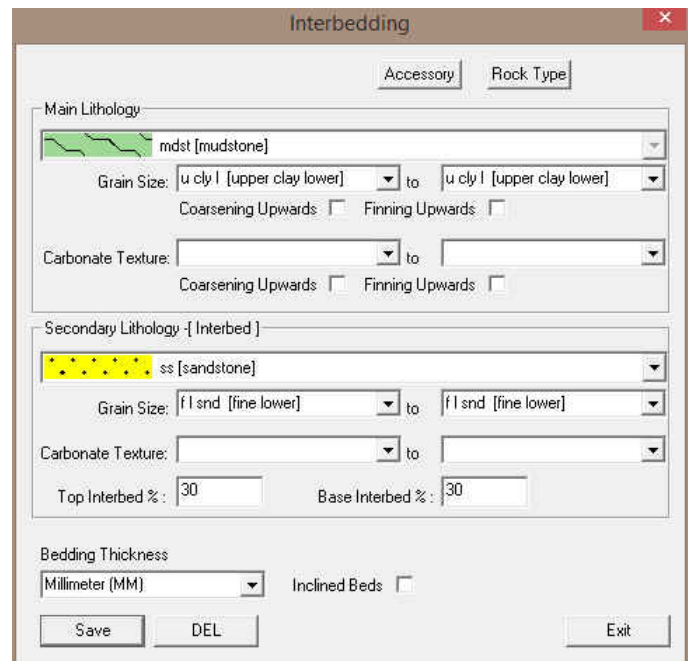
Drafting some more Interpretive Lithology with Interbedding

1. **Scroll** up the log so you can see the interval **1017' 9" to 1025'**.
2. **Click** on the **Clear Fields** button to get rid of the Erosional Base Contact. Otherwise the Mudstone you are about to draw will have an erosional contact.
3. **Select Mudstone for a rock type.**
4. If you have drawn the Interpretive Facies Intervals from a previous section you can now **CTRL key down** and **double click** on the interpretive lithology layer and the Mudstone will fill in the interval that the interpretive facies has been drawn from 1017' 9" to 1025'.





5. **Or Click and drag** up or down within a specific track to define the lithology interval from **1017' 9.00"** to **1025'**. **Release** the mouse button and the interval will be drawn with Mudstone accordingly.
6. **Or, Type** in the **Intervals** in the **1017.75** in the **from field** and **1025** in the **to field** in the builder and **click** on the **Save** button.
7. **Right Click** on the **Mudstone** and **select Interbedding** from the pop out menu as shown below or **Click** on the **lithology** and **Click** on the **Interbeds** button in the Rock Type Builder. This will activate the Interbedding window also shown below.

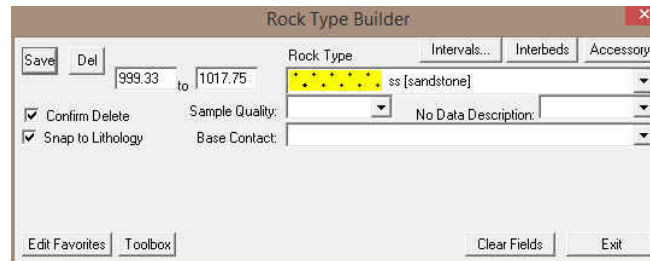


1. **Select u cly l (Upper Clay Lower)** the Main Lithology **Grain Size** from drop boxes
2. **Select the SS (sandstone) Secondary Lithology (Interbeds)** from the **drop box**.
3. **Select f l snd (fine Lower)** from the Secondary Lithology Grain.
4. Fill in the **30** in both **Percentage** of Interbeds at the top of the interval and the base of the interval by typing in their respective percentages.
5. **Select a Millimeter (MM)** from the **Bedding Thickness drop box**.
6. **Click** on the **Save** button
7. The user can now go back to the Rock type builder by **clicking** on the **Rock Type** button.

You will notice when you do the interbedding you will see the grain size for the Facies interval filled in on your log.

Drafting some more Interpretive Lithology.

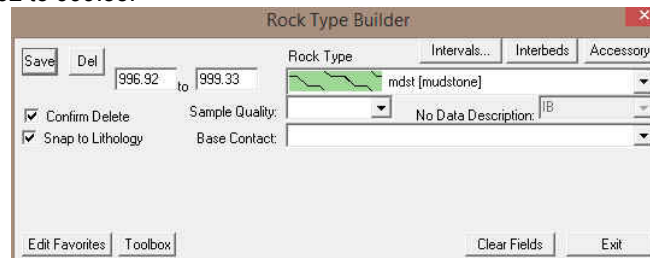
1. **Click** on the **Clear Fields** button to clear out the previously described Interbeds.
2. **Select Sandstone for a rock type**.
3. If you have drawn the Interpretive Facies Intervals from a previous section you can now **CTRL key down** and **double click** on the interpretive lithology layer and the Sandstone will fill in the interval that the interpretive facies has been drawn from 999' 4" to 1017' 9"



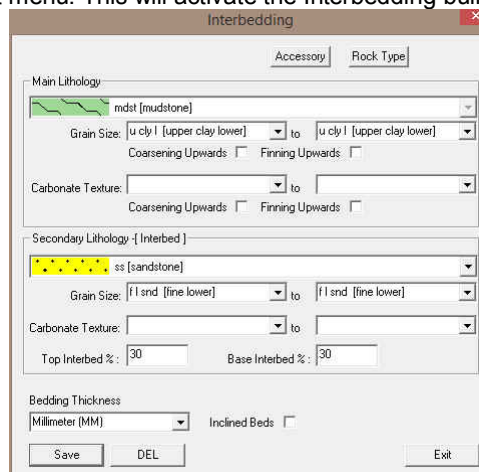
4. **Or, Type** in the **Intervals** in the **999.33** in the **from field** and **1017.75** in the **to field** in the builder and **click** on the **Save** button.

We can now simply click on the Mudstone / Sandstone interbed drawn from 1017' 9" to 1025'. and then redraw with these rock properties at another interval.

1. **Click on the Mudstone / Sandstone interbed** drawn from 1017' 9" to 1025'
2. **Scroll up** in your log so you can see around **996' 11" – 999' 4"**.
3. If you performed step 1 you can now **CTRL key down** and **double click** on the interpretive lithology layer between 996' 11" – 999' 4" and the Mudstone Interbedding will fill in the interval that the interpretive facies has been drawn from 996.92 to 999.33.



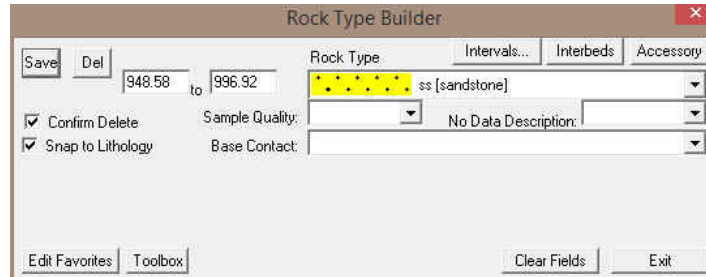
4. **Or Click and drag** up or down within a specific track from **996' 11" to 999' 4"** to define a new lithology interval.
5. **Release** the mouse button and the interval will be drawn accordingly.
6. **Click on the Interbeds** button in the Rock Type Builder or **right click** on the drawn **lithology** and **select Interbedding** from the pop out menu. This will activate the Interbedding builder.



7. **Select u cly l (Upper Clay Lower)** the Main Lithology **Grain Size** from drop boxes
8. **Select the SS (sandstone) Secondary Lithology (Interbeds)** from the **drop box**.
9. **Select vf l snd (very fine Lower)** from the Secondary Lithology Grain.
10. Fill in the **30** in both **Percentage** of Interbeds at the top of the interval and the base of the interval by typing in their respective percentages.
11. **Select a Millimeter (MM)** from the **Bedding Thickness drop box**.
12. **Click on the Save** button
13. The user can now go back to the Rock type builder by **clicking** on the **Rock Type** button.

Drafting some more Interpretive Lithology.

1. Click on the **Clear Fields** button to clear out the previously described Interbeds.
2. **Select Sandstone for a rock type.**
3. Scroll up so you can see the interval to a portion of the interval from 948' and 997'.
4. If you have drawn the Interpretive Facies Intervals from a previous section you can now **CTRL key down** and **double click** on the interpretive lithology layer and the Sandstone will fill in the interval that the interpretive facies has been drawn from 948' 7" to 996' 11".



5. **Or, Type** in the **Intervals** in the **948.58** in the **from field** and **996.92** in the **to field** in the builder and click on the **Save** button.

Repeat the above procedures for the rest of the intervals defined below. *Italic* ones have been done.

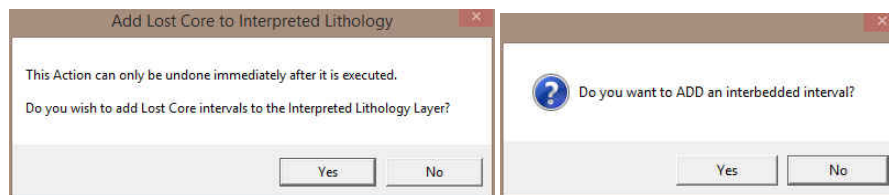
Rock Type	From Depth	To Depth
<i>Limestone</i>	<i>1098.08 or 1098' 1"</i>	<i>1084.25 or 1084' 3"</i>
<i>Sandstone</i>	<i>1084.25 or 1084' 3"</i>	<i>1025</i>
<i>Interbedded Mudstone and Sandstone</i>	<i>1025</i>	<i>1017.75 or 1017' 9"</i>
<i>Sandstone</i>	<i>1017.75 or 1017' 9"</i>	<i>999.33 or 999' 4"</i>
<i>Interbedded Mudstone and Sandstone</i>	<i>999.33 or 999' 4"</i>	<i>996.92 or 996' 11"</i>
<i>Sandstone</i>	<i>996.92 or 996' 11"</i>	<i>948.58 or 948' 7"</i>
Interbedded Mudstone and Sandstone	948.58 or 948' 7"	944
Sandstone	944	929.67 or 929' 8"
Interbedded Mudstone and Sandstone	929.67 or 929' 8"	869.08 or 869' 1"
Sandstone	869.08 or 869' 1"	861.67 or 861' 8"
Interbedded Sandstone and Mudstone	861.67 or 861' 8"	851.75 or 851' 9"
Mudstone	851.75 or 851' 9"	848.17 or 848' 2"

Inserting Lost Core Intervals

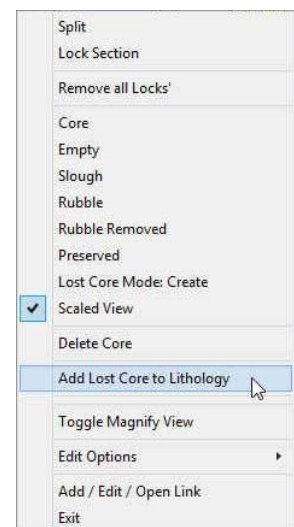
Once the Interpretive Lithology has been entered there are two ways to getting the Lost Core Intervals Inserted. The Core Photo Stack method described is by far the easiest.

Core Photo Stack Layer Method

1. **Double click** anywhere within the **Core Photo Stack track / layer** to activate the Core Group window.
2. **Right click** on the Core Photo Stack layer to activate the pop out menu.
3. **Select Add Lost Core to Lithology Selection** from the pop out menu. This will activate a Warning Message.

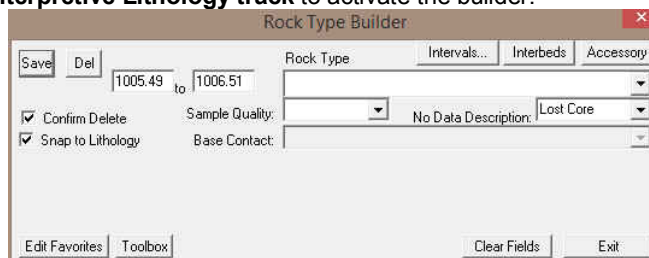


4. Click on the **Yes** button. This will activate the Add Interbedded Interval Message window repeatedly for all the Lost Core Intervals to be added.
5. Click on the **Yes** button repeatedly for all the lost core intervals indicated in the Core Photo Stack layer.

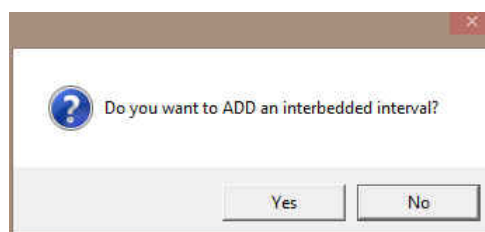


Interpretive Lithology Layer method.

1. **Double Click** on the **Interpretive Lithology track** to activate the builder.



2. Click on the **Clear Fields** button to clear out the previously described lithology.
3. **Select Lost Core** from the **No Data Descriptions** from the drop box.
4. **Click and drag** the mouse button up or down within the **Core Photo Stack track** (orange area from 1005' 6" to 1006' 6") specific track to define the **No Data** interval.
5. **Release** the mouse button, and the interval will be drawn accordingly. A message box will appear.

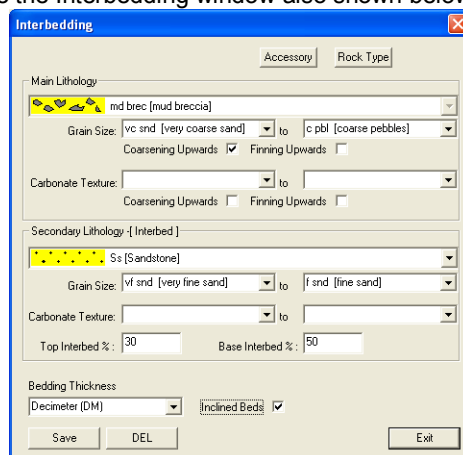


6. Click on the **Yes** button.
7. **Repeat steps 4-6** for all the lost core intervals indicated in the Core Photo Stack Layer.

Deleting Interbedding in an Interpreted Lithology Interval.

The following procedure will delete the Interbedding only. If you wish to delete the entire lithology delete the Lithology from the Rock type builder.

1. **Double click** anywhere within the **Interpreted Lithology track** to activate the **Rock Type Builder** window as well as your Favorites List Toolbox.
2. **Right Click** on the drawn **lithology** and **select Interbedding** from the pop out menu as shown below or **Click** on the **lithology** and **Click** on the **Interbeds** button in the Rock Type Builder. This will activate the Interbedding window also shown below.



3. Click on the **DEL** button

- The user can now go back to the Rock type builder by clicking on the **Rock Type** button. Also the user can go to the accessory builder by clicking on the **Accessory** button. Or the user can exit the builder altogether by clicking on the **Exit** button.
- Press the **Esc** key on the keyboard to exit from the **Interbedding** window.

Inserting Thin beds

You are able to insert thinner beds of a different **Rock Type** into an existing bed. This prevents you from having to re-enter the properties of the main bed above and beneath the inserted thinner bed. The **Rock Accessories (Thin beds, Components, Matrix and Cement)** are the only properties that are not retained from the existing bed.

- Double click** anywhere within the **Interpreted Lithology** track to activate the **Rock Type Builder** window previously shown as well as your Favorites List Toolbox.
- Select a rock type.** There are 4 ways to select a rock type.
 - The user can **click** on the desired **Rock Type** from the Favorites Toolbox.
 - The user can **right click** anywhere within the **Interpretive Lithology** track to activate the pop-up menu shown below. Then select by **left clicking once** on the desired **Rock Type** from the pop-up menu.
 - The user can select a **Rock Type** from the **Rock Type** field within the **Rock Type Builder** window, if the desired **Rock Type** is not displayed in the pop-up menu or Toolbox.
 - The user can also **click** on a **previously drawn lithology** that is the same as you wish to draw with.
- If done correctly the selected rock type will be automatically displayed in the **Rock Type** field within the **Rock Type Builder** window.
- Click and drag** the mouse button up or down within a specific track to define the **Lithology** interval.

Note: This can be done on any track but more often than not the Interpretive Lithology Track is the most convenient.

- Release** the mouse button, and you will be prompted with a message asking, "**Do you want to add an interbedded interval?**"
- Click** on the **Yes** button and the thinner bed will be drawn accordingly.
- The user can now define the base contact type by **right clicking on the drawn interpretive lithology interval** and **selecting the desired basal contact type.**
- Press the **Esc** key on the keyboard to exit from the **Rock Type Builder** window.

Resizing an Existing Rock Type or Bed

- Double click** on the **Interpreted Lithology** track to activate the **Rock Type Builder** window.
- Press and hold** the **Ctrl** key on the keyboard **down**, while moving the mouse pointer over the lithology bed boundary you wish to resize, the mouse pointer will turn into a resize \updownarrow , (remember if two beds are touching to look into the builder to see if you have the correct one selected)
- Clicking and dragging** the **left** mouse button up or down the **Interpreted Lithology** track to either shrink or enlarge the selected interval.

Note: You are not allowed to overlap an existing bed (lithology) entirely and if you attempt to do so, you will receive an "**Unsupported Add Sequence**" system message.

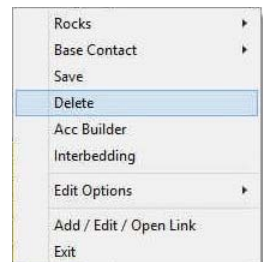
- Release** the mouse button at the desired depth, followed by the release of the **Ctrl** key on the keyboard, and the following system message will be activated, "**Do you really want to RESIZE the interval from _ to _ ?**"

Note: Resizing a **Rock Type** will result in a resizing its associated bed restricted description category information, i.e. **Grain Size, Porosity Grade**, and so on.

- Press the **Esc** key on the keyboard to exit from the **Rock Type Builder** window.

Deleting a Single Rock Type or Bed

- Double click** on the **Interpreted Lithology** track to activate the **Rock Type Builder** window.
- Right click** anywhere within the **Interpreted Lithology** track to activate the pop-up menu.
- Click** on **Delete** and the following system message will be activated, "**Do you really want to DELETE _ to _ ?**" **Click** on the **Yes** button to confirm the deletion.

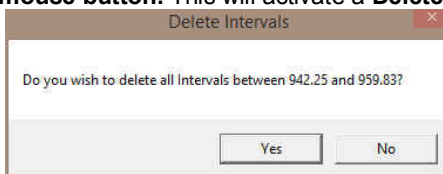


Note: When you delete a **Rock Type**, you will also delete its associated bed restricted rock description information, i.e. **Grain Size**, **Porosity Grade**, **Type**, **Oil Show** and all other bed restricted data.

- Press the **Esc** key on the keyboard to exit from the **Rock Type Builder** window.

Deleting Multiple Rock Types or Beds

- Double click on the **Interpreted Lithology** track to activate the **Rock Type Builder** window.
- Hold the **SHIFT** Key down and then click and drag anywhere within the **Interpreted Lithology** track and then let go of the **Shift** Key and left mouse button. This will activate a **Delete Intervals** message box.

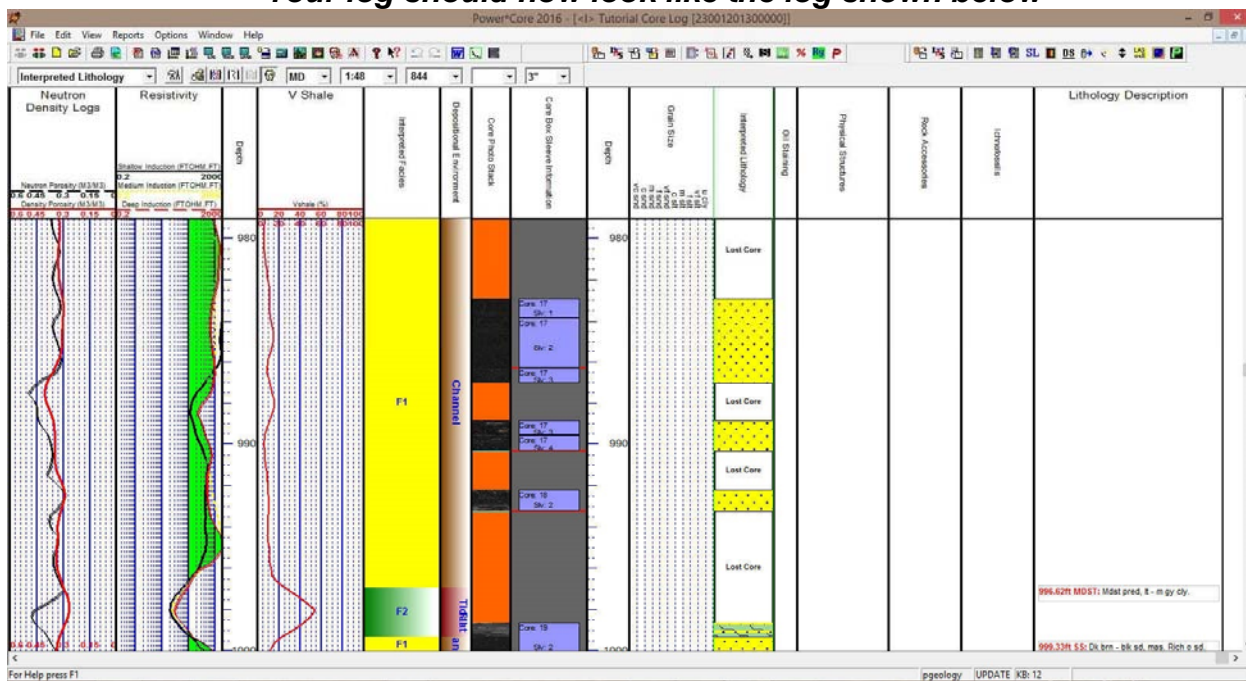


- Click on **Yes** button and the Intervals dragged over will be deleted.

Note: When you delete a **Rock Type**, you will also delete its associated bed restricted rock description information, i.e. **Grain Size**, **Porosity Grade**, **Type**, **Oil Show** and all other bed restricted data.

- Press the **Esc** key on the keyboard to exit from the **Rock Type Builder** window.

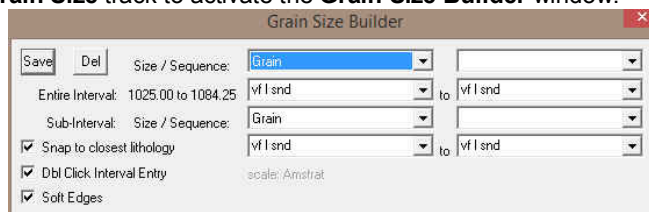
****Your log should now look like the log shown below****



Drawing Grain Size

The Entire interval is applicable to the Interpretive Facies interval. The entire interval would contain all of the drawn interpretive facies interval. For the following entire intervals to work the Double Click Interval Entry, Snap to closest lithology and Soft Edges must be activated or checked as seen in the builder.


- Double click on the **Grain Size** track to activate the **Grain Size Builder** window.



- 2.) **Double click** the mouse pointer between the depths **1025' to 1084' 3"** **1035' 8.00" [f l snd]** on the (f l snd) in the **Grain Size** track. The entire **Grain Size** interval will be drawn in purple accordingly. (Purple to represent an entire interval.)

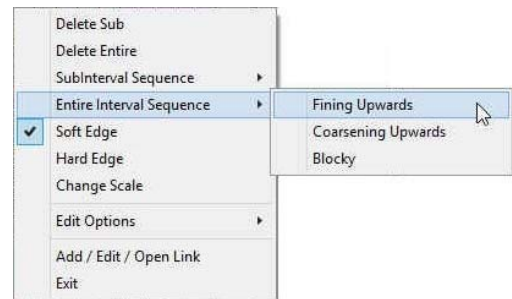
Note: Measured Depths and Grain Sizes can be viewed within the mouse pointer display box, situated to the right of the mouse pointer or top left corner of screen with the Mouse Cross hair activated.

- 3.) **Double click** the mouse pointer between the depths **999' 4"** to **1017' 9"** **1010" [v f l snd]** on the (v f l snd) in the **Grain Size** track. The entire **Grain Size** interval will be drawn in purple accordingly. (Purple to represent an entire interval.)
- 4.) **Double click** the mouse pointer between the depths **948' 7"** to **996' 11"** **982' 10.00" [f l snd]** on the (f l snd) in the **Grain Size** track.
- 5.) **Double click** the mouse pointer between the depths **929' 8"** to **944' 1"** **932" [m u snd]** on the (m l snd) in the **Grain Size** track.

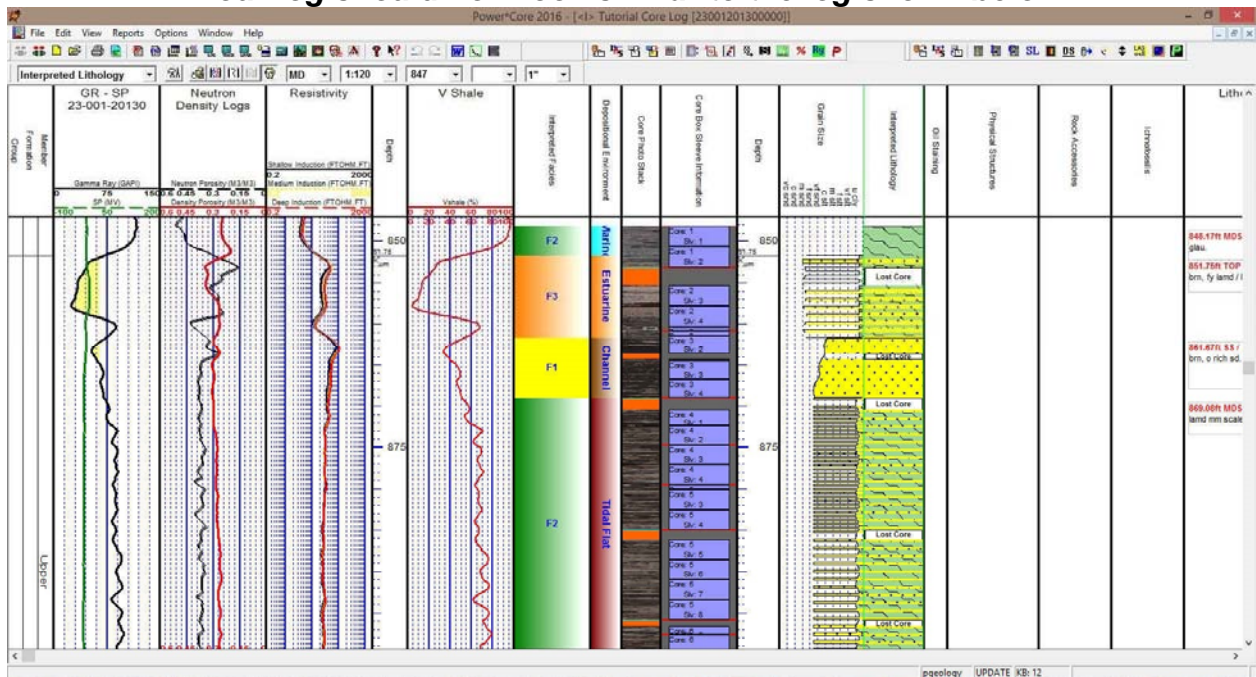
Note: If you happen to do something wrong remember you have an **UNDO** under the **Edit Menu** selection. Also there is an  button on the Toolbar.

Drawing Grain Size with a sequence type...

- 6.) **Click and drag** the mouse pointer from **869' 3" [f u snd]** to **861' 9" [u c slt]** **861' 9.00" [u c slt]** **869' 3.00" [f u snd]** on the **Grain Size** track. Then, release the mouse button and the **Grain Size** interval will be drawn accordingly.
- 7.) **Right Click** between the interval **861' 9"** to **869' 3"** on the **grain size track** and **select Entire Interval Sequence** from the pop out menu and **select Fining Upwards** from the resulting pop out menu.
- 10.) To exit from the **Grain Size Builder** window and return to the log, **press the Esc key** on the keyboard once.



****Your log should now look similar to the log shown below****



Oil Staining Layer

This layer allows you to add or delete Oil staining in the Power*Core application. . There is a **Bed or Facies Restricted (BR)** and a **Non-Bed or Facies Restricted (NBR)** layer types. In our case we have only Bed or Facies restricted layers. So if you do not have a facies it will be impossible to draw oil staining.

The **bed restricted (BR)** layer type is like a typical rock property layer (sorting, rounding grain size) where you have to have an Interpretive Lithology or Facies in order to enter an oil staining. The oil staining is also restricted to the interval you are drawing in. Also, when the interval is resized or deleted the oil staining symbol may be also resized or deleted if the oil staining interval coincides with the beds resized or deleted interval.

The **non-bed restricted (NBR)** layer type is not associated with any Interpretive lithology or facies interval and can be entered anywhere the user wishes and will not be affected by the resizing or deleting of a bed.

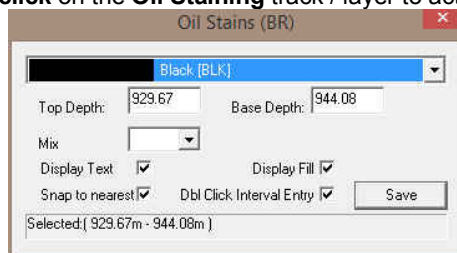
Snap To ☒ **Snap To**: When checked allows the user to snap to the previous data entry if you click and drag within 10 times the mouse pointer or screen scale accuracy of the previous data entry.

We will want to move down to the first Channel Sand of the core log so **type** in the **Go To Depth field 925** and press tab on key pad. **Change** your log viewing **scale** to **1:48** and your **Mouse pointer accuracy** to **0.5"**. You should see the first Channel Sand. You can also use the scroll bars on the side of the log.

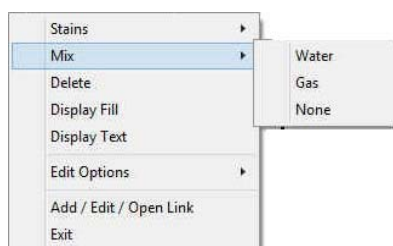
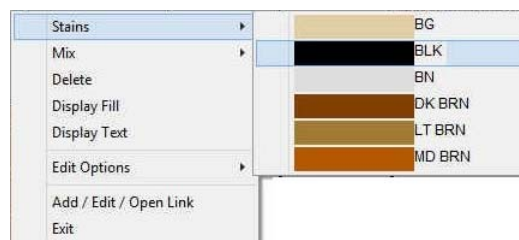


Adding an Oil Staining type over an Entire Interval

1. **Double click** on the **Oil Staining** track / layer to activate the **Oil stains** window.



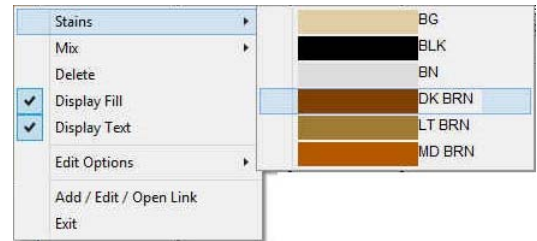
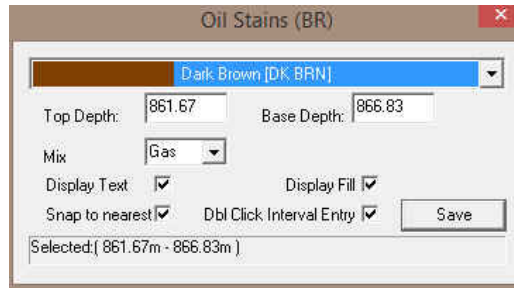
2. **Right click** anywhere on the **Oil staining** track / layer to activate the pop-up menu and select the intensity selection to activate its pop out menu as shown below or click directly into the builder and utilize the drop down menu section.
3. **In our case a mix is not required so Skip to Step 4.** If it was required **Right click** anywhere on the **Oil staining** track / layer to activate the pop-up menu and select the mix selection to activate its pop out menu as shown below or click directly into the builder and utilize the drop down menu section.



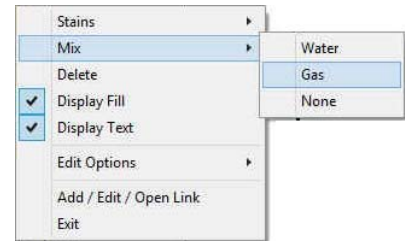
4. **Double Click** on the **Oil Staining layer** within the interval between 929' 8" and 944' 1" (**Make sure** ☒ **Dbl Click Interval** **is checked**) and it will be drawn accordingly.
5. Continue **Scrolling down** the log and enter the same information over all the **Channel Sands**. The depth intervals would be 948' 7" to 996' 11", 999' 4" to 1017' 9", 1025' to 1084' 3"
6. Repeat **Step 4 -5** to add Black Staining.
7. Press the **Esc** key on the keyboard to exit from the **Oil Stains builder** window.

Adding an Oil Staining type over a subinterval.

Scroll up the log so you can see the area between the depths of 855' and 870'.



1. **Right click** anywhere on the **Oil staining** track / layer to activate the pop-up menu and select the intensity selection to activate its pop out menu as shown and **select Dk Brn** or click directly into the builder and utilize the drop down menu section:
2. If a mix is required **Right click** anywhere on the **Oil staining** track / layer to activate the pop-up menu and **select** the mix selection to activate its pop out menu as shown and **select Gas** or click directly into the builder and utilize the drop down menu section.
3. **Click and drag** the mouse on the track / layer from **861' 7.5"** to **866' 10.00"**. The dark brown oil staining and Gas Mixture will be drawn accordingly.



Tip: The **frequency of mix symbols (G & W)** at any given scale is handled in the **Systems Options** window, under **Options**. If you have selected 1 symbol every 5 ft at the **5"** scale, you will get 1 symbol every 10 ft at the **2"** scale, 1 symbol every 20 ft at the **1"** scale, and so on.

4. Repeat **Steps 2 - 4** to add more subintervals at your discretion to the track.
5. Press the **Esc** key on the keyboard to exit from the **Oil Stains builder** window.

Resizing an Interval

Mouse Pointer Method

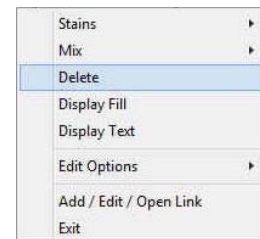
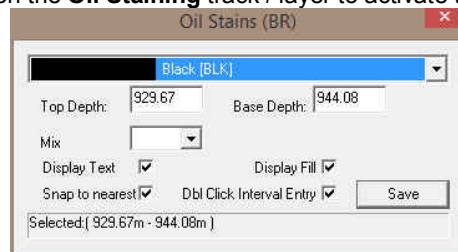
1. **Press** the **Ctrl** key down on the keypad and **move the mouse pointer over the interval ends**. If done correctly the mouse pointer will turn into double arrows.
2. **Click and drag the mouse** to the new desired top or bottom depth. **Release the mouse button** and the interval will be resized.

Keypad Method

1. **Click once** on the Oil Stain you want to resize to bring it into the builder and change the from or to depth and / or abundance and **click** on the **Save** button. Remember if it is a bed restricted layer that the top or bottom of the Lithology interval will take precedent.

Deleting an interval

1. **Double click** on the **Oil Staining** track / layer to activate the **Oil Stains builder** window.



2. **Right click** anywhere within the interval you wish to delete to activate the pop-up menu.
3. **Click on Delete** and the **Oil Staining** interval will be deleted accordingly.
4. Repeat **Steps 2** and **3** to delete more **Oil Staining** intervals from the **Oil Staining** track / layer.
5. Press the **Esc** key on the keyboard to exit from the **Oil Stains Builder** window.

Physical Structures Layer

This layer allows you to add or delete physical structures in the Power*Core application. There are two types of sedimentary structure layers. There is a **Bed Restricted (BR)** and a **Non-Bed Restricted (NBR)** layer types. The **bed restricted (BR)** layer type is like a typical rock property layer (sorting, rounding grain size) where you have to have an Interpretive Lithology or Facies in order to enter a sedimentary structure. The physical structure is also restricted to the interval you are drawing in. Also, when the Lithological or Facies interval is resized or deleted the physical structure symbol may be also resized or deleted if the physical structure interval coincides with the beds resized or deleted interval.

The **non-bed restricted (NBR)** layer type is not associated with any Interpretive lithology or facies interval and can be entered anywhere the user wishes and will not be affected by the resizing or deleting of a bed.

The number of Physical Structures you can put in is limited to the width of the track. Change the track size if you wish to put in more or less within a certain Facies Interval.

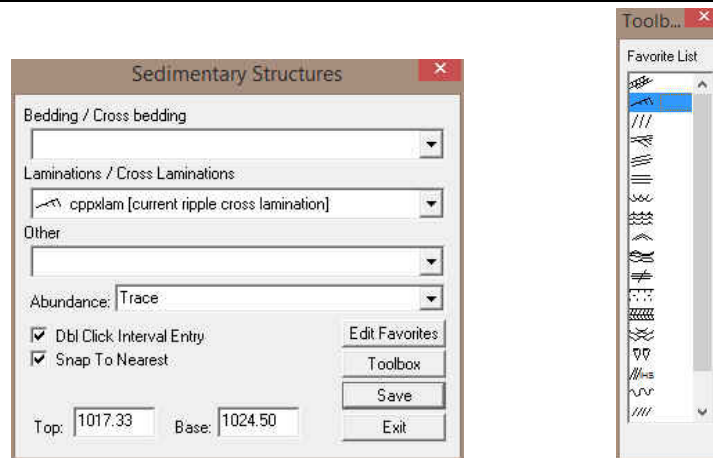
Snap To ☒ **Snap To**: When checked allows the user to snap to the previous data entry if you click and drag within 1/4" the mouse pointer or screen scale accuracy of the previous data entry.

Adding a Physical Structure over an Entire Facies Interval

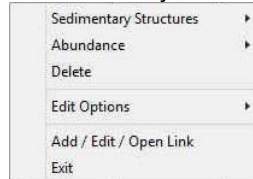
Note: In our Case the **physical structures is a bed restricted layer / track** and have to be associated with an Interpretive Facies Interval and must have an interval in order to be saved to the database. Therefore, you cannot add a sedimentary structure, until there is a Facies interval added to that Layers for that interval.

1. **Double click** on the **Physical Structure track / layer** to activate the **Sedimentary Structures Builder** window and toolbox. The toolbox can be turned on or off by clicking on the **Toolbox** button in the builder.

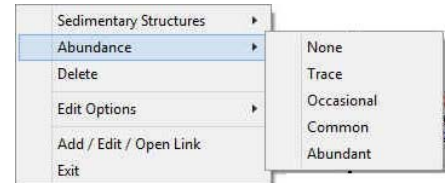
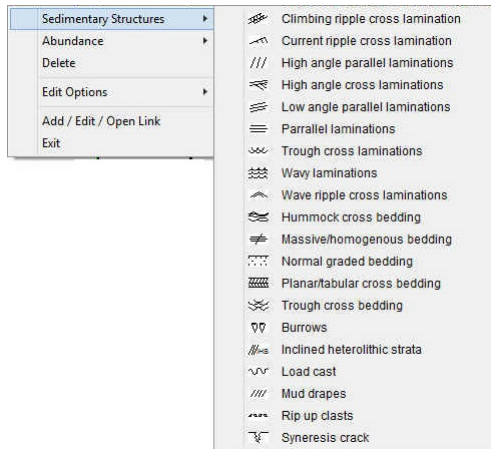
To add or remove items from your favorites **Click** on the **Edit Favorites** button in the builder, this will activate the **System Options** Favorites Tab and then **click** on the **Sedimentary Favorites** button. Remember to **OK** on the way out of the System Options window to save your changes.




2. **Right click** anywhere on the **Physical Structure track / layer** to activate the pop-up menu.



3. **Click** on the **Sedimentary Structures** favorites list to activate the pop out menu and then **select current ripple cross laminations** from the pop out favorites list **or click** in the builders drop down menu selections to access the list provided in them. Either way once you have selected one it will be populated in the builder.

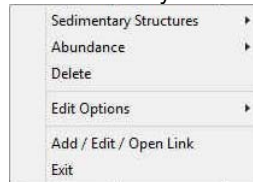


4. **Double Click** within an existing Facies interval in the Sedimentary Structure layer with the ☒ **Dbl Click Interval Entry** activated and the entire facies interval will be filled in with current ripple cross laminations.
5. **Right click** on the existing **current ripple cross laminations sedimentary structure**, **Click** on the **Abundance** selection to activate the pop out menu and then select **Trace** from the pop out list. This will change the line style of color of the surround
6. **Or click** on the existing **current ripple cross laminations sedimentary structure** and then **click** in the builders **Abundance drop down menu** selections to access the list provided in them. **Click** on the **Save** button.
7. **Repeat Steps 2-6** to enter more Sedimentary Structures over entire Facies Intervals.

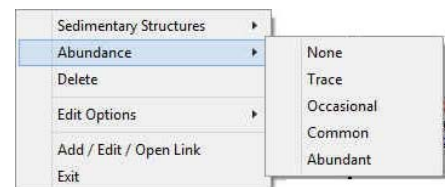
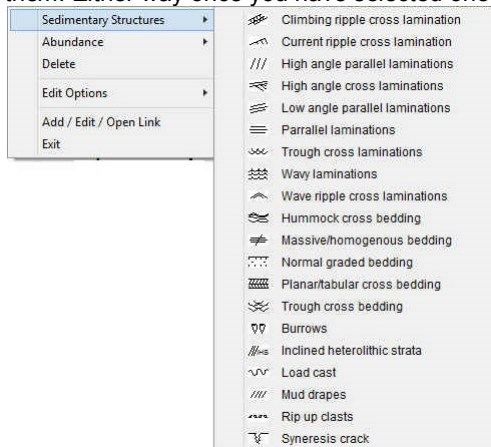
Note: If you happen to do something wrong remember you have an **UNDO** under the **Edit Menu** selection. Also there is an  button on the Toolbar.

Adding a Physical Structure over a Portion of a Facies Interval


1. **Right click** anywhere on the **Physical Structure** track / layer to activate the pop-up menu.



2. **Click** on the **Sedimentary Structures** favorites list to activate the pop out menu and then **select wavy laminations** from the pop out favorites list **or click** in the builders drop down menu selections to access the list provided in them. Either way once you have selected one it will be populated in the builder.



3. **Click and drag** within an existing Facies interval in the Sedimentary Structure layer and the interval you dragged will be filled in with wavy laminations.
4. **Right click** on the existing **wavy laminations sedimentary**

- structure**, Click on the **Abundance** selection to activate the pop out menu and then select **Trace** from the pop out list. This will change the line style of color of the surround
5. Or click on the existing **wavy laminations sedimentary structure** and then click in the builders **Abundance drop down menu** selections to access the list provided in them. Click on the  **button**.
 6. Repeat Steps 2-5 to enter more **Sedimentary Structures**.


Note: Click and drag the mouse on the track / layer close to an existing sedimentary structure (either above or below in the same column) with the ☒ **Snap To Nearest** activated and there will be no spaces between the sedimentary structures. Remember you have to be within 1/4" of the mouse pointer or screen accuracy from the previous symbol to have the snap to take effect.

7. Press the **Esc** key on the keyboard to exit from the **Sedimentary Structure Builder** window.

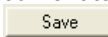
Resizing an Interval

1. Double click on the **Physical Structure** track / layer to activate the **Sedimentary Structure Builder** window.


Mouse Pointer Method

2. Click on the **symbol** you wish to resize. If done correctly it will indicate with the resize boxes.
3. Press the **Ctrl** key down on the keypad and move the mouse pointer over the interval ends and then Click and drag the mouse to the new desired top or bottom depth. If done correctly the mouse pointer will turn into
 resize cursor  .
4. Release the mouse button and the interval will be resized.

Keypad Method

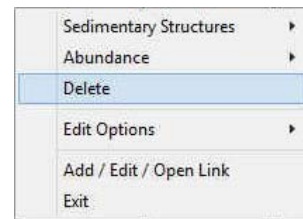
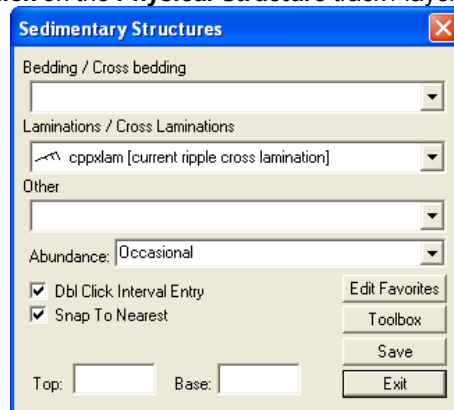
1. Click once on the Sedimentary Structure you want to resize to bring it into the builder and change the from or to depth and / or abundance and click on the  **button**. Remember if it is a bed restricted layer that the top or bottom of the Lithology interval will take precedent.

Moving an Interval

1. Double click on the **Physical Structure** track / layer to activate the **Sedimentary Structure Builder** window.
2. Move the mouse pointer over the interval to be moved and Click once. This will activate the symbol with the selection move boxes.
3. Hold the **CTRL** Key down and Click and drag the interval to a new position. Your cursor will turn into a  if done correctly. (The bed-restricted interval will not be allowed to move outside the interval of the lithology it is associated with.)

Deleting a Single Interval

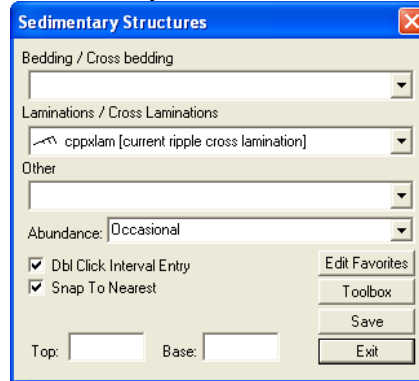
1. Double click on the **Physical Structure** track / layer to activate the **Sedimentary Structure Builder** window.



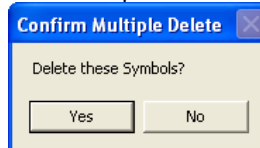
2. Right click anywhere within the interval you wish to delete to activate the pop-up menu.
3. Click on **Delete** and the **Sedimentary Structure** interval will be deleted accordingly.
4. Repeat Steps 2 and 3 to delete more **Sedimentary Structure** intervals from the **Physical Structure** track / layer.
5. Press the **Esc** key on the keyboard to exit from the **Sedimentary Structure Builder** window.

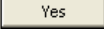
Deleting Multiple Intervals

1. **Double click** on the **Physical Structure** track / layer to activate the **Sedimentary Structure Builder** window.



2. **Press and Hold the SHIFT Key** and then **click and drag an area** anywhere within the intervals you wish to delete.
3. **Release the mouse button** to activate a Confirm Multiple Delete message.



4. **Click on**  **button** and the **Physical Structure** interval encompassed with your drag will be deleted accordingly.
5. Press the **Esc** key on the keyboard to exit from the **Sedimentary Structure Builder** window.

Rock Accessory Layer

This layer allows you to add or delete Rock Accessories in the Power*Core application. There are two types of Rock Accessories layers. There is a **Bed Restricted (BR)** and a **Non-Bed Restricted (NBR)** layer types.

The **bed restricted (BR)** layer type is like a typical rock property layer (sorting, rounding grain size) where you have to have an Interpretive Lithology or Facies interval in order to enter a Rock Accessory. The Rock Accessories are also restricted to the interval you are drawing in. Also, when the Lithological or Facies interval is resized or deleted the Rock Accessory may be also resized or deleted if the Rock Accessory interval coincides with the beds resized or deleted interval.

The **non-bed restricted (NBR)** layer type is not associated with any Interpretive lithology or facies interval and can be entered anywhere the user wishes and will not be affected by the resizing or deleting of a bed.


The number of Rock Accessories you can put in is limited to the width of the track. Change the track size if you wish to put in more or less within a certain Facies Interval.

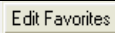


Scroll down to the base of your log or use the selection bar to **type 1078** in the **Go To Depth** field and **TAB** out.

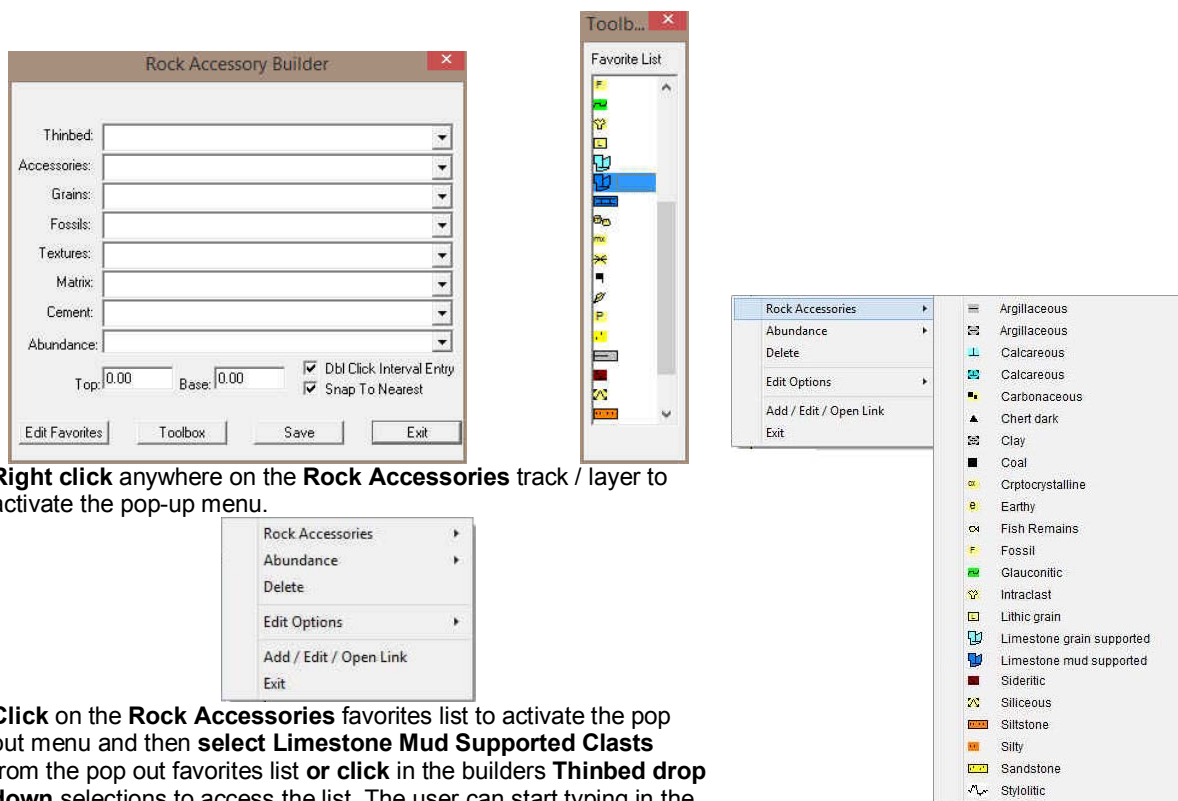


Adding a Rock Accessory over an Entire Facies Interval

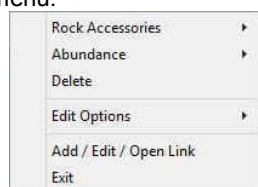
Note: In our Case the **Rock Accessory is a bed restricted layer / track** and have to be associated with an Interpretive Facies Interval and must have an interval in order to be saved to the database. Therefore, you cannot add a Rock Accessory, until there is a Facies interval added to that Layers for that interval.

1. **Double click** on the **Rock Accessories** track / layer to activate the **Rock Accessory Builder** window and toolbox. The toolbox can be turned on or off by clicking on the  button in the builder.

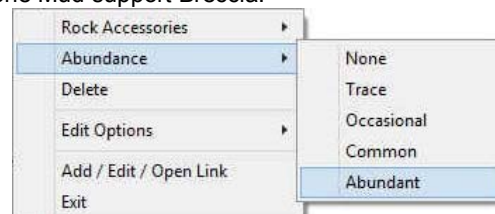
To add or remove items from your favorites **Click on the**  **button** in the builder, this will activate the **System Options** Favorites Tab and then **click on the**  **button**. Remember to  on the way out of the System Options window to save your changes.



2. **Right click** anywhere on the **Rock Accessories** track / layer to activate the pop-up menu.



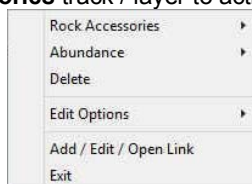
3. **Click** on the **Rock Accessories** favorites list to activate the pop out menu and then **select Limestone Mud Supported Clasts** from the pop out favorites list **or click** in the builders **Thinbed drop down** selections to access the list. The user can start typing in the list to get close to your choice. Either way once you have selected one it will be populated in the builder.
4. **Double Click** within an existing Facies interval in the Rock Accessories layer with the ☒ **Dbl Click Interval Entry** activated and the entire facies interval will be filled in with Limestone Mud support Breccia.
5. **Right click** on the existing **Limestone Mud support Breccia rock accessory**, **Click** on the **Abundance** selection to activate the pop out menu and then select **Abundant** from the pop out list. This will change the line style of color of the surround
6. **Or click** on the existing **Limestone Mud support Breccia rock accessory** and then **click** in the builders **Abundance drop down menu selections** and **select Abundant**. **Click** on the **Save** button.
7. **Repeat Steps 2-6** to enter more Rock Accessories over entire Facies Intervals.



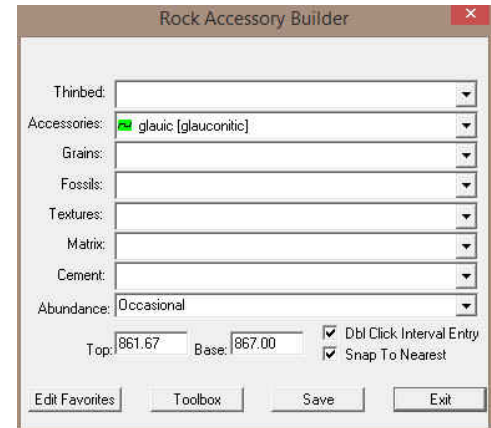
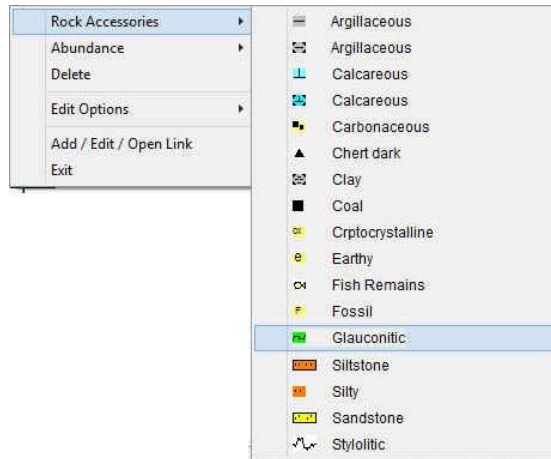
Note: If you happen to do something wrong remember you have an **UNDO** under the **Edit Menu** selection. Also there is an button on the Toolbar.

Adding a Rock Accessory over a Portion of a Facies Interval

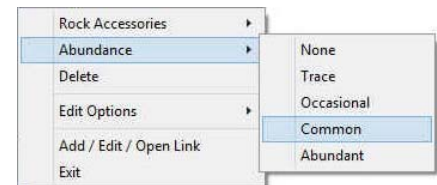
8. **Right click** anywhere on the **Rock Accessories** track / layer to activate the pop-up menu.



9. **Click** on the **Rock Accessories** favorites list to activate the pop out menu and then **select glauconitic** from the pop out favorites list **or click** in the builders drop down menu selections to access the list provided in them. Either way once you have selected one it will be populated in the builder.



10. **Click and drag** within an existing Facies interval in the Rock Accessories layer and the interval you dragged will be filled in with Glaucouitic.
11. **Right click** on the existing **Glaucouitic Rock Accessory**. Click on the **Abundance** selection to activate the pop out menu and then select **Trace** from the pop out list. This will change the line style of color of the surround
12. **Or click** on the existing **Glaucouitic Rock Accessory** and then **click** in the builders **Abundance drop down menu** selections to and select **common**. Click on the **Save** button.
13. **Repeat Steps 2-5 to enter more Rock Accessories.**




Note: **Click and drag** the mouse on the track / layer close to an existing Rock Accessory (either above or below in the same column) with the ☒ Snap To Nearest activated and there will be no spaces between the Rock Accessories. **Remember** you have to be within 1/4" of the mouse pointer or screen accuracy from the previous symbol to have the snap to take effect.

14. Press the **Esc** key on the keyboard to exit from the **Rock Accessory Builder** window.

Resizing an Interval

1. **Double click** on the **Rock Accessories** track / layer to activate the **Rock Accessory Builder** window.


Mouse Pointer Method

2. **Click** on the **symbol** you wish to resize. If done correctly it will indicate with the resize boxes.
3. **Press the Ctrl key down** on the keypad and **move the mouse pointer over the interval ends** and then **Click and drag the mouse** to the new desired top or bottom depth. If done correctly the mouse pointer will turn into a resize cursor .
4. **Release the mouse button** and the interval will be resized.

Keypad Method

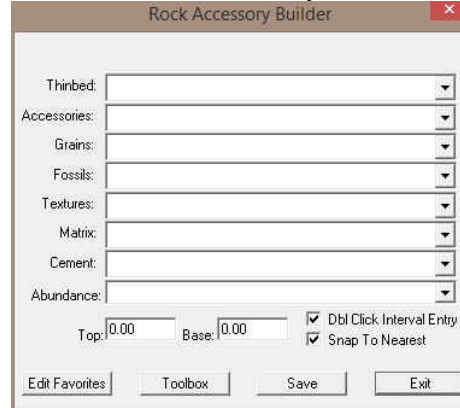
2. **Click once** on the **Rock Accessory** you want to resize to bring it into the builder and change the from or to depth and / or abundance and **click** on the **Save** button. Remember if it is a bed restricted layer that the top or bottom of the Lithology interval will take precedent.

Moving an Interval

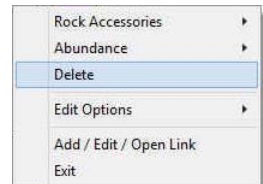
4. **Double click** on the **Rock Accessories** track / layer to activate the **Rock Accessory Builder** window.
5. **Move the mouse pointer over the interval** to be moved and **Click once**. This will activate the symbol with the selection move boxes.
6. **Hold the CTRL Key down** and **Click and drag** the interval to a new position. Your cursor will turn into a  if done correctly. (The bed-restricted interval will not be allowed to move outside the interval of the lithology it is associated with.)

Deleting a Single Interval

1. **Double click** on the **Rock Accessories** track / layer to activate the **Rock Accessory Builder** window.

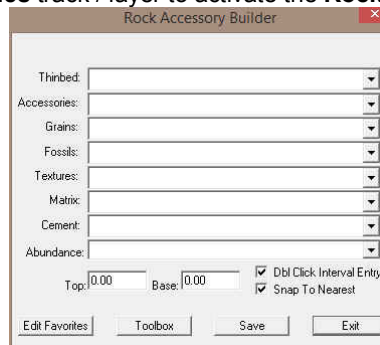


2. **Right click** anywhere within the interval you wish to delete to activate the pop-up menu.
3. **Click on Delete** and the **Rock Accessory** interval will be deleted accordingly.
4. Repeat **Steps 2** and **3** to delete more **Rock Accessories** intervals from the **Rock Accessories** track / layer.
5. Press the **Esc** key on the keyboard to exit from the **Rock Accessory Builder** window.

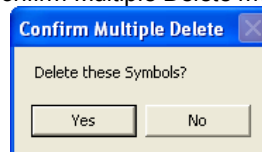


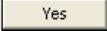
Deleting Multiple Intervals

1. **Double click** on the **Rock Accessories** track / layer to activate the **Rock Accessory Builder** window.



2. **Press and Hold the SHIFT Key** and then **click and drag an area** anywhere within the intervals you wish to delete.
3. **Release the mouse button** to activate a Confirm Multiple Delete message.



4. **Click on**  **button** and the **Rock Accessories** interval encompassed with your drag will be deleted accordingly.
5. Press the **Esc** key on the keyboard to exit from the **Rock Accessory Builder** window.

Ichnofossils Layer

This layer allows you to add or delete Ichnofossils in the Power*Core application. There are two types of Rock Accessories layers. There is a **Bed Restricted (BR)** and a **Non-Bed Restricted (NBR)** layer types.

The **bed restricted (BR)** layer type is like a typical rock property layer (sorting, rounding grain size) where you have to have an Interpretive Lithology or Facies in order to enter an Ichnofossils. The Ichnofossils are also restricted to the interval you are drawing in. Also, when the Lithological or Facies interval is resized or deleted the Ichnofossils may be also resized or deleted if the Ichnofossils interval coincides with the beds resized or deleted interval.

The **non-bed restricted (NBR)** layer type is not associated with any Interpretive lithology or facies interval and can be entered anywhere the user wishes and will not be affected by the resizing or deleting of a bed.

The number of Ichnofossils you can put in is limited to the width of the track. Change the track size if you wish to put in more or less within a certain Facies Interval.

Scroll down to the base of your log or use the selection bar to **type 1078** in the **Go To Depth field** and **TAB** out.

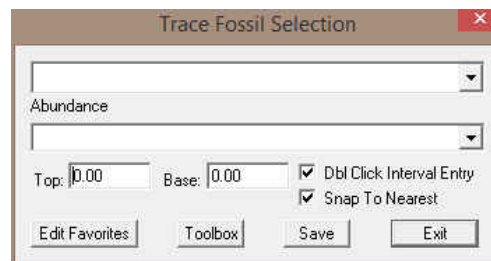


Adding an Ichnofossil over an Entire Facies Interval

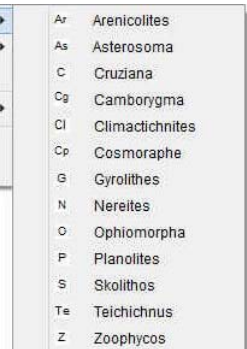
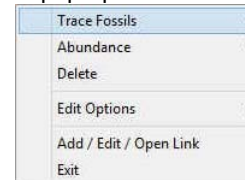
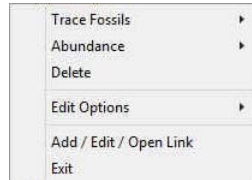
Note: In our Case the **Ichnofossils** is a **bed restricted layer / track** and have to be associated with an Interpretive Facies Interval and must have an interval in order to be saved to the database. Therefore, you cannot add a Ichnofossil, until there is a Facies interval added to that Layers for that interval.

1. **Double click** on the **Ichnofossils track / layer** to activate the **Trace Fossil Builder** window and toolbox. The toolbox can be turned on or off by clicking on the **Toolbox** button in the builder.

To add or remove items from your favorites **Click** on the **Edit Favorites** button in the builder, this will activate the **System Options** Favorites Tab and then **click** on the **Trace Fossil Favorites** button. Remember to **OK** on the way out of the System Options window to save your changes.



2. **Right click** anywhere on the **Ichnofossils track / layer** to activate the pop-up menu.



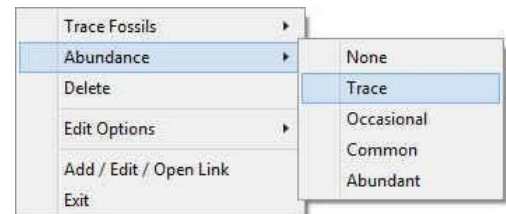
3. **Click** on the **Trace Fossils** favorites list to activate the pop out menu and then **select Cruziana** from the pop out favorites list or **click** in the builders **Trace Fossil drop down** selections to access the list. The user can start typing in the list to get close to your choice. Either way once you have selected one it will be populated in the builder.


4. **Double Click** within an existing Facies interval in the Ichnofossils layer with the ☒ **Dbl Click Interval Entry** activated and the entire facies interval will be filled in with Cruziana.

5. **Right click** on the existing **Cruziana trace fossil**, **Click** on the **Abundance** selection to activate the pop out menu and then select **Trace** from the pop out list. This will change the line style of color of the surround

6. **Or click** on the existing **Cruziana trace fossil** and then **click** in the builders **Abundance drop down menu** selections and **select Abundant**. **Click** on the **Save** button.

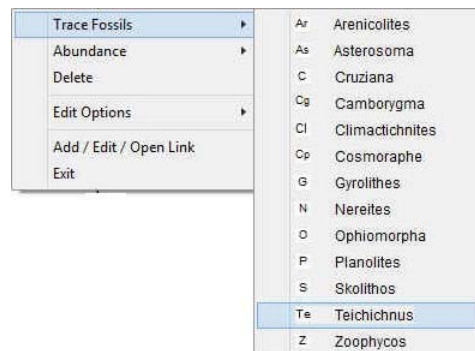
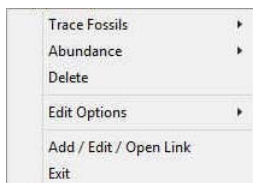
7. **Repeat Steps 2-6** to enter more Ichnofossils over entire Facies Intervals.



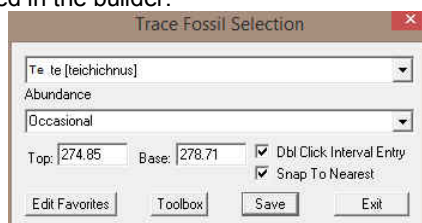
Note: If you happen to do something wrong remember you have an **UNDO** under the **Edit Menu** selection. Also there is an  button on the Toolbar.


Adding an Ichnofossils over a Portion of a Facies Interval

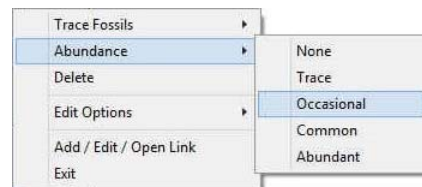
1. **Right click** anywhere on the **Ichnofossils** track / layer to activate the pop-up menu.



2. **Click** on the **Trace Fossils** favorites list to activate the pop out menu and then **select Teichichnus** from the pop out favorites list **or click** in the builders drop down menu selections to access the list provided in them. Either way once you have selected one it will be populated in the builder.



3. **Click and drag** within an existing Facies interval in the Ichnofossils layer and the interval you dragged will be filled in with Teichichnus.
4. **Right click** on the existing **Teichichnus Trace Fossil**. **Click** on the **Abundance** selection to activate the pop out menu and then select **Trace** from the pop out list. This will change the line style of color of the surround
5. **Or click** on the existing **Teichichnus Trace Fossil** and then **click** in the builders **Abundance drop down menu** selections to and select **Occasional**. **Click** on the  **button**.
6. **Repeat Steps 2-5 to enter more Ichnofossils.**




Note: **Click and drag** the mouse on the track / layer close to an existing Ichnofossils (either above or below in the same column) with the ☒ **Snap To Nearest** activated and there will be no spaces between the Ichnofossils. **Remember** you have to be within $\frac{1}{4}$ " of the mouse pointer or screen accuracy from the previous symbol to have the snap to take effect.

7. Press the **Esc** key on the keyboard to exit from the **Trace Fossil Builder** window.

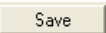
Resizing an Interval

1. **Double click** on the **Ichnofossils** track / layer to activate the **Trace Fossil Builder** window.


Mouse Pointer Method

2. **Click** on the **Trace Fossil symbol** you wish to resize. If done correctly it will indicate with the resize boxes.
3. **Press the Ctrl key down** on the keypad and **move the mouse pointer over the interval ends** and then **Click and drag the mouse** to the new desired top or bottom depth. If done correctly the mouse pointer will turn into a resize cursor .
4. **Release the mouse button** and the interval will be resized.

Keypad Method

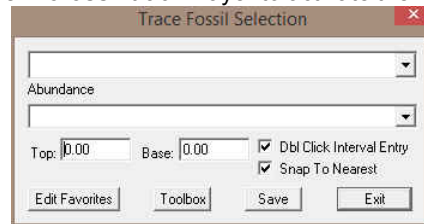
5. **Click once** on the **Trace Fossil** you want to resize to bring it into the builder and change the from or to depth and / or abundance and **click** on the  **button**. Remember if it is a bed restricted layer that the top or bottom of the Lithology interval will take precedent.

Moving an Interval

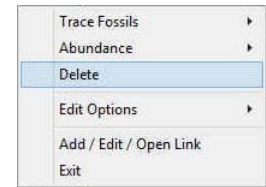
1. **Double click** on the **Ichnofossils** track / layer to activate the **Trace Fossil Builder** window.
2. **Move the mouse pointer over the interval** to be moved and **Click once**. This will activate the symbol with the selection move boxes.
3. **Hold the CTRL Key down** and **Click and drag** the interval to a new position. Your cursor will turn into a  if done correctly. (The bed-restricted interval will not be allowed to move outside the interval of the lithology it is associated with.)

Deleting a Single Interval

1. **Double click** on the **Ichnofossil** track / layer to activate the **Trace Fossil Builder** window.

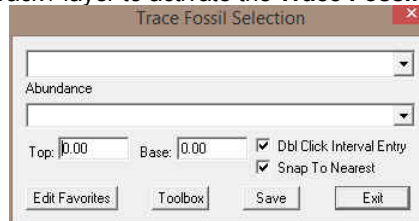


2. **Right click** anywhere within the interval you wish to delete to activate the pop-up menu.
3. **Click on Delete** and the **Trace Fossil** interval will be deleted accordingly.
4. Repeat **Steps 2 and 3** to delete more **Trace Fossil** intervals from the **Ichnofossils** track / layer.
5. Press the **Esc** key on the keyboard to exit from the **Trace Fossil Builder** window.

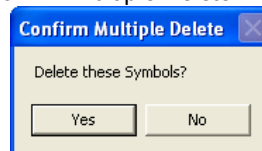


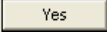
Deleting Multiple Intervals

1. **Double click** on the **Ichnofossils** track / layer to activate the **Trace Fossil Builder** window.

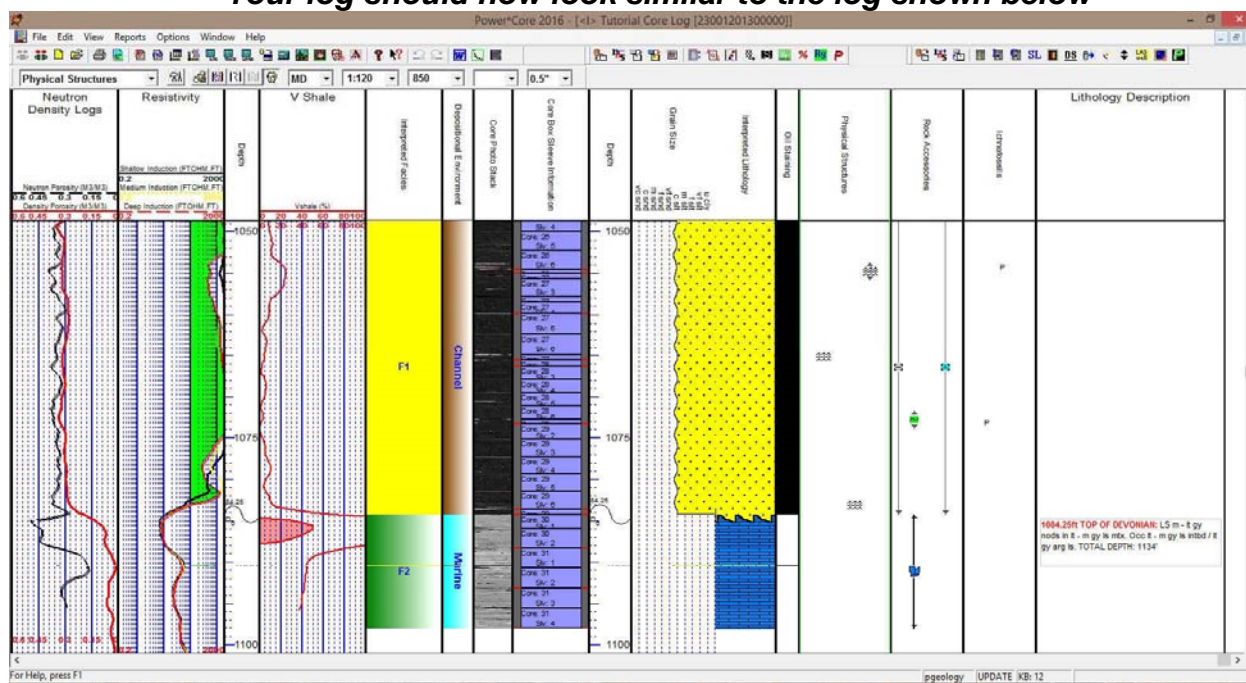


2. **Press and Hold the SHIFT Key** and then **click and drag an area** anywhere within the intervals you wish to delete.
3. **Release the mouse button** to activate a Confirm Multiple Delete message.



4. **Click on**  **button** and the **Trace Fossils** interval encompassed with your drag will be deleted accordingly.
5. Press the **Esc** key on the keyboard to exit from the **Trace Fossils Builder** window.

****Your log should now look similar to the log shown below****



Core / Sample Header

The **Core / Sample Header** window allows you to edit the information being displayed when the Core log header is printed. Below are some examples of the Headers for your Core Log.

Core Log		
Well Name: Tutorial Core Log	Location: 2300 1201 3000 00	Ground / Collar: 3 (I)
UWI: 23001201300000	KB: 12 (I)	UTM East: 766574
Hole ID: First Well	Core Quality: Good	UTM North: 3912119
Cored Interval: 848.17 (I) to 1098.08 (I)	Logged by: R.E. (Bob) Sephton	Slabbed: Yes
	Date: Mar 17, 2016	
Depth Correction: Minor		
Remark: This is a place to fill in anything relevant with the Core. Printed Core Log Scale 1:20 Core Analyses to be done by Murphy's Core Lab in Houston		



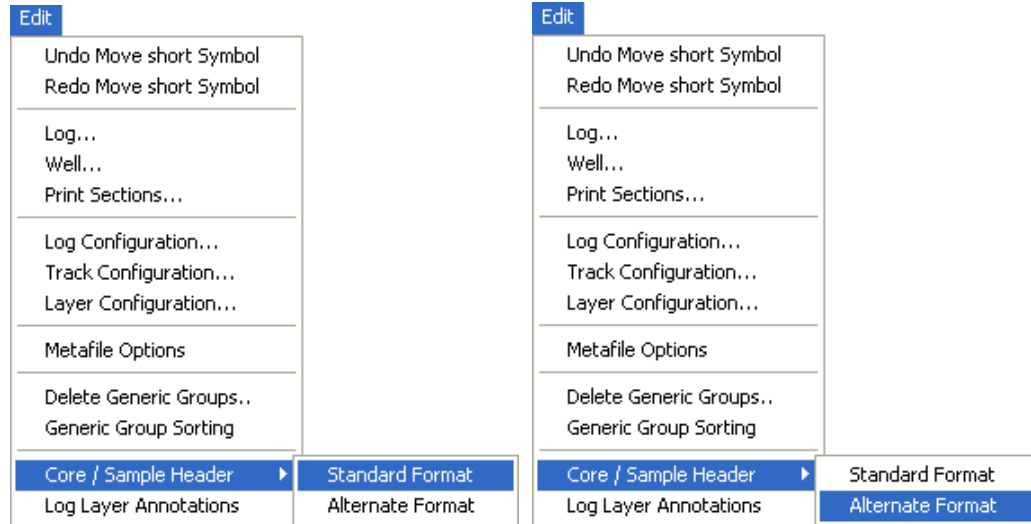
Core Log Header		
Core Log		
Well Name: Tutorial Core Log	Location: 2300 1201 3000 00	Ground / Collar: 3 (I)
UWI: 23001201300000	KB: 12 (I)	UTM East: 766574
Hole ID: First Well	Core Quality: Good	UTM North: 3912119
Csg Depth (MD): 256 (I)	Logged by: R.E. (Bob) Sephton	Slabbed: Yes
Core Point (MD): 848.17 (I)	Date: Mar 17, 2016	Lab.: Murphy's Core Lab
Total Depth (MD): 1098.08 (I)	Lic#: 342561	% Calc. Recovery: 87.24
Rig#: Core em Up 32	Lease#: 3279340	% Total Recovery: 89.81
Depth Correction: Minor		
Remark: This is a place to fill in anything relevant with the Core. Printed Core Log Scale 1:20 Core Analyses to be done by Murphy's Core Lab in Houston		



Alternate Core Log Header

How to Edit a Core / Sample Header

1. Click on the **Core / Sample Header** selection located under the **Edit pull down menu** and then either **Select Standard Format**. An example of the Alternate Format shown below.



Core / Sample Header

Save Del

Date: Mar 17, 2016 Logged by: R.W. (Bob) Sephton

Interval: Top Depth: 848.17 Base Depth: 1098.08

Depth Corrected Remark: Minor Quality Remark: ☒ Slabbed Good

Remarks: This is a place to fill in anything relevant with the Core. Printed Core Log Scale 1:20. Core Analyses to be done by Murphy's Core Lab in Houston.

Well Record Data:

KB: 12.00

Ground Elev / Collar: 3.00

UTM Easting: 766574.00

UTM Northing: 3912119.00

Hole ID: First Well

Edit Well

Exit

Core / Sample Header (Alternate)

Save Undo New Del First Prev ? Next Last

Date: Mar 17, 2016 Logged by: R.W. (Bob) Sephton

Core Point: 848.17 Total Depth: 1098.08

Depth Corrected Remark: Minor ☒ Slabbed Quality Remark: Good Csg. Depth: 256

Laboratory: Murphy's Core Lab

Lease #: 3279340

Project: Tutorial

Core Recovery (%): Total: 89.81 Calculated: 87.24

Remarks: This is a place to fill in anything relevant with the Core. Printed Core Log Scale 1:20. Core Analyses to be done by Murphy's Core Lab in Houston.

Well Record Data:

KB: 12.00

Ground Elev / Collar: 3.00

UTM Easting: 766574.00

UTM Northing: 3912119.00

Hole ID: First Well

Edit Well

Exit

2. In the **Logged by** field, type in the name of the person who the core is logged by.
3. In the **Top Depth** and **Base Depth** fields, type in the Top Depth and Base Depth of the core / sample interval.
4. In the **Depth Corrected Remark** field, type in the remark related to depth change that you wish to appear at the core log header.
5. Activate the **Slabbed** check box ☒, if you wish the core log header to be cut in half. This is not applicable to the Sample Log abbreviated Header.
6. In the **Quality Remark** field, type in the remark related to quality that you wish to appear at the core log header.
7. In the **Remarks** field, type in any other remarks that you wish to appear on the Core Log header.

N.B. The Remarks field is limitless as the Core Header Expands to the appropriate size to accommodate the entire Remarks Field. To start a new line just depress the Enter Key on your keypad.

Well Record Data portion of the Core / Sample Header window

1. Click on the **Edit Well** button to enter KB and Ground Elevation. The **Well** window will be shown.

The 'Well' window is a data entry form for well records. It includes the following sections and fields:

- Buttons:** Save, Undo, New, Del, First, Prev, Next, Last.
- Units:** Storage Units: Imperial, Original Units: (dropdown).
- API:** 23001201300000
- Well Name:** Tutorial Core Log
- Operator:** Anybody Oil & Gas Co.
- Drilling Contractor:** Core em Up
- County:** Ameriloo
- Province/State:** Texas
- Country:** USA
- Surf. Location:** 2300 1201 3000 00
- Btm. Location:** 2300 1201 3000 00
- Licensee:** Anybody Oil & Gas Co.
- Pool:** Big
- Rig #:** 32
- Permit #:** 342561
- Field:** Bigger
- Elevations:**
 - Reference: Ground
 - KB: 12
 - Ground / Collar: 3
 - Casing Flange: 3
- Surface Coordinates:**
 - Latitude: 35.326694
 - Longitude: 102.067410
 - N/S: 400 ft. North of the South boundary
 - E/W: 550 ft East of the West boundary
- Intermediate Casing Point Coordinates:**
 - Latitude: (empty)
 - Longitude: (empty)
 - N/S: (empty)
 - E/W: (empty)
- Bottom hole Coordinates:**
 - Latitude: 35.326751
 - Longitude: (empty)
 - N/S: 401 ft. North of the South boundary
 - E/W: 5550 ft. East of the West boundary
- UTM Surface Coordinates:**
 - Northing: 3912119
 - Easting: 766574
- Hole Direction:** Vertical (dropdown)
- Faulted:** (checkbox)
- Deviated:** (checkbox)
- Hole ID:** First Well
- Depths:**

Drillers T.D. (Tally) MD	Drillers T.D. (Tally) TVD	Drillers T.D. (Strap) MD	Drillers T.D. (Strap) TVD	Loggers T.D. MD	Loggers T.D. TVD
1130	1130	1130.45	1130.45	1128.6	1128.6
KB to Ground	Cut	Fill	Plugback	Sidetrack	
9		2			
- Water Depth Reference:** (empty)
- Water Depth:** (empty)
- Work Schedule:**

Date	Time	Work Schedule
Spud:	May 12, 2016 12:30	Curves
T.D.:	May 19, 2016 17:30	Mud Types
Rig Release:	May 21, 2016 08:00	Dir. Surveys
Well Status:	Potential Austin Oil Sand Producer	Det. Lith.
		Abstract

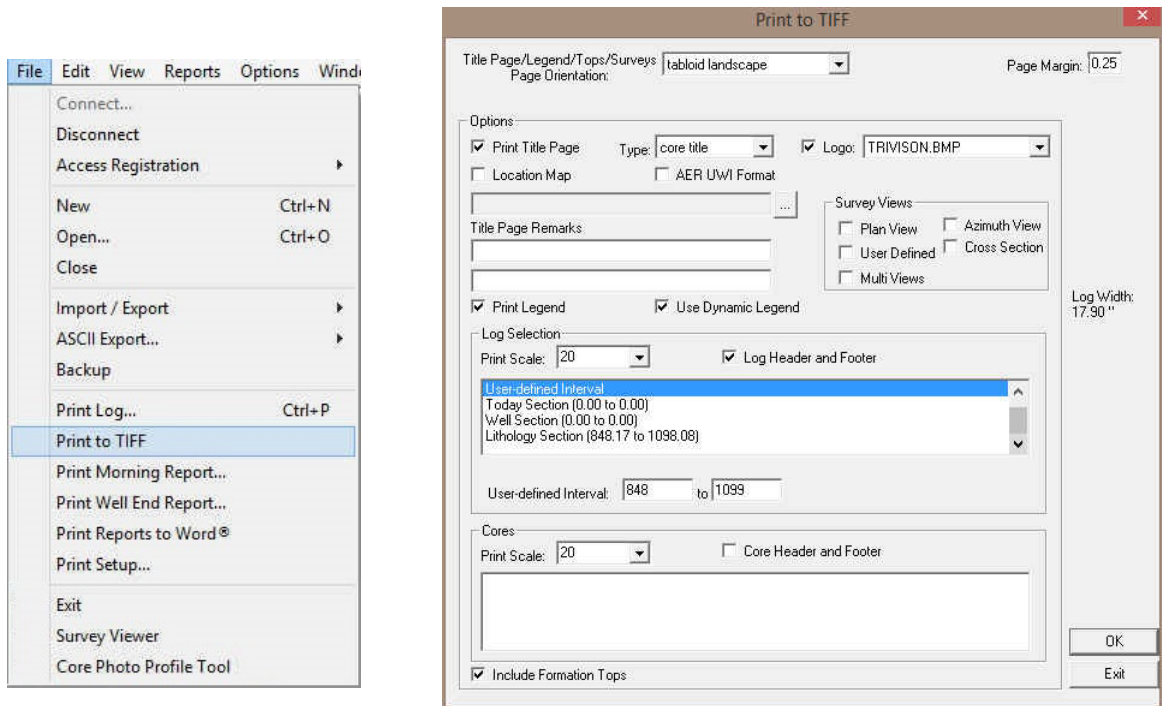
2. In the **KB** field, enter the KB. In the **Ground / Collar**, enter the ground elevation as well as the UTM coordinates and the Hole ID if you have them.
3. Click on the **Save** button or press ALT-S. This will activate the **Core Header** window showing the KB and Ground Elevation that you have just entered.
4. Click on the **Exit** button. If the record has been successfully saved, click on the appropriate button when prompted with the **Shortcut Options** system window.

Print to TIFF (file format)

Prints all or part of your log/well along with the Title page, location map, legends, survey views, individualized cores and formation tops on a continuous basis in a tiff file format. In our Case we have only Cores and have not made a regular Core Log through the Core Report we only have a striplog. We will also print the regular Core Log Header.

1. Under the **File** menu selection, click on **Print to TIFF** or click on the **Print to TIFF** button on the Toolbar to activate the **Print to TIFF** window shown on the next.

Note: The depth views associated with the Print TIFF window are defaulted to the Depth View that Power*Log / Curve / Core is in at the time of the activation of the Print to TIFF window.



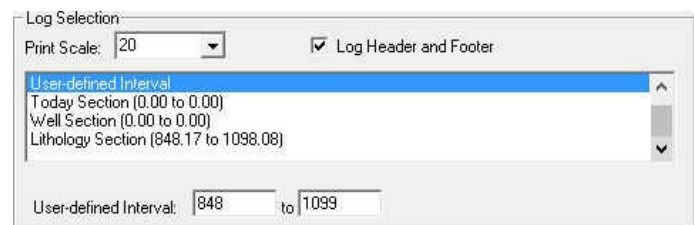
2. Title Page/Legend/Tops/Surveys Page Orientation: **Select tabloid landscape** the appropriate paper orientation from this drop box field and the **Dynamic Legend** will automatically conform to the selected orientation. There are six (6) types of paper orientation to choose from: **letter (8.5"x11") portrait or landscape, legal (8.5"x14") portrait or landscape, tabloid (11"x17") portrait or landscape** settings.
3. ☒ **Print Title Page** Activate this check box ☒ to printout a Core Log Title Page.
4. The Type (Title Page) drop box displayed on the right allow you to pick the appropriate title page format to print. **Select** an abbreviated **Core title** that handles our core log.
5. ☐ **AER UWI Format** If you are in Alberta the AER format should be selected.
6. ☒ **Logo** Activate this check box ☒, if you wish to printout a logo, and then select a logo from the **Logo** drop box field.

Note: The logo file format must be a bitmap image file (*.bmp) if you want a logo printed out on the title page. Also, it is recommended that the bitmap image should be a square image, because **Power*Suite** will shrink or expand the image to fit the logo space on the **Title Page**. This bitmap must be placed in the **Powersuite_2015\logo** directory for the application to find it.

7. ☒ **Print Legend** ☒ **Use Dynamic Legend** Activate these check boxes ☒. The Dynamic legend **reflect only the symbols printed on the log**.

In the Log portion of the Print Log window

8. Print Scale **select 20** or type in the **Scale** for the log to be printed out at, in the **Scale** drop box field.
9. ☒ **Log Header and Footer** **Activate** this check box ☒ to have the track headers /footers printed out with the main log.
10. Highlight the log printing options in the selection box. **Click** on the **User Defined Section** and **type** in **848** and **1099** in the **from** and **to** fields.
11. When you are ready to print your log, **click** on the **Print** button.
12. This will activate a message box indicating the size of your printout. **Click** on the **OK** button.

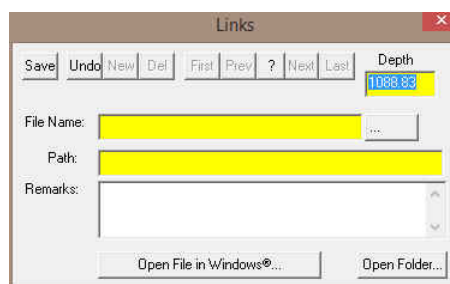
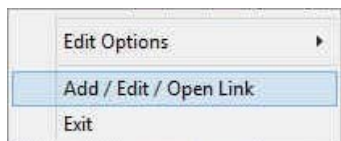


13. This will activate a file name window which should be filled in with your file name and location to where you can locate it for further reference.

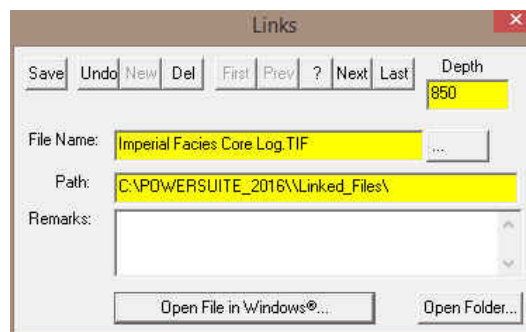
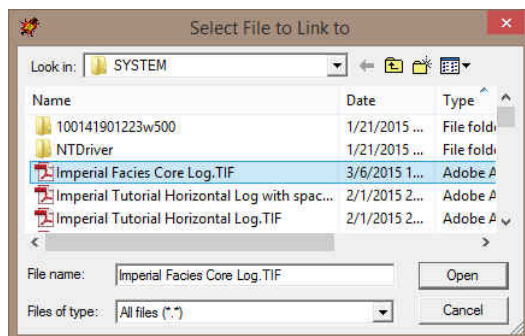
Note: If you do **exit** from the **Print to TIFF window**, you will be asked **if you wish to save the print settings**. If you **click on Yes**, the program will remember every setting that you made to the **Print to TIFF window** and then will default to those settings the next time you enter the Print to TIFF window

Adding a Link (Attachment) to your Log

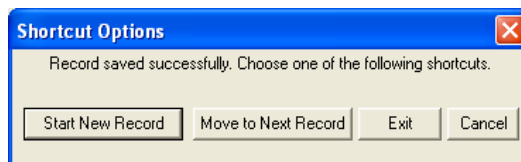
- 1.) In our case **Right Click** on the **Grain Size track / layer** to activate the pop out menu. **Select Add / Edit / Open Link** from the pop out menu. This will activate a blank Links window with the depth you right clicked at.




- 2.) **Click** on the **...** button in the Links window and you can now pick any windows compatible file. In our case we will link the printed well file from the next section of the tutorial printed to my backup folder and then **click** on the **Open** button. This will fill in in the details of the File Name and location in this window.



- 3.) Now the user can **Type** in some **remarks** to tell the viewer what the file is (if the user wishes to identify the file they have attached) and then **click** on the **Save** button. This will activate the Shortcut Options Window.



- 4.) **Click** on the **Exit** button. This will insert the paper clip symbol  where you originally right clicked and link the file to the log.

This concludes the Power*Core Tutorial. If you need help with specific functions or operations, please use the Table of Contents in the Power*Log / Core User Manual to find the desired topic or use the Search function built into the On-line Help.