

2018 Imperial Tutorial



The Intelligent Geological Software Solution

Suite 200, 638 – 11th Avenue S.W. Calgary, Alberta T2R-0E2 Phone: (403) 777-9454 Website: www.powerlogger.com Email: <u>info@powerlogger.com</u>

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POWER SUITE 2018

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 dock able 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 dock able and can be moved to different places on the screen. This is used with the New RTF Annotations used on the Log.



Status Bar

For Help, press F1

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".

pgeology UPDATE KB: 597.6

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

Radio Buttons	
Activated	O De-Activated
Check Boxes Activated De-Activated	Drop Box Click Arrow ±



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 **Icon**. Acknowledge the Security Information window by **clicking** on the **DK button**. This will initiate the program and activate a **Connect Database** window.

Databases		
PGEOLO	SY 2018 IMPERIAL SY 2018 METRIC IN	Microsoft Access D , licrosoft Access Dri:
User ID:	pgeology	Connect

- 2.) Highlight the PGEOLOGY 2018 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 **D** 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.

	New Log	×
UWI / API:		
Well List	123001201300000	
Well / Log Name:	Tutorial Core Log	
Log Format	SYSTEM Facies Log	
Log Type:	facies	
Log Comments:	Interpreted Facies	0
Log Start Depth:	790 Storage Imperial	*
🔽 Facies Int	erval Create Car	ncel

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.



- 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 **DK** button when you have finished entering the **UWI**.
- 5.) Click on the Log Format... button to activate the Log Format List window.

	Query
/ SYSTEM (SYSTEM (II) / SYSTEM 2 Well Correlational (SYSTEM (II)	Select
/ SYSTEM 3 Well Correlational [SYSTEM [I]] / SYSTEM Composite Geology [SYSTEM [I]] / SYSTEM Core Carbonate Lithologue Bestricted Laures (SYSTEM [II]	Clear Field
/ SYSTEM Core Carbonate LR Layers Depth Grid On (SYSTEM (I))	Cancel
/ SYSTEM Core Carbonate No Lith Restricted Layers [SYSTEM [I]]	-
/ SYSTEM Core Composite Lithology Restricted Layers [SYSTEM [1]]	_
SYSTEM Core Composite LR Layers Depth Grid On [SYSTEM []]	
/ SYSTEM Core Composite No Lith Hestricted Layers [SYSTEM [I]]	
/ SYSTEM Core Log Lithology Restricted Layers [SYSTEM [1]]	
/ SYSTEM Core Log LR Layers Depth Grid On [SYSTEM []]	
/ SYSTEM Core Log No Lithology Hestricted Layers [SYSTEM [I]]	
SYSTEM Facies Log ISYSTEM [1]	
' SYSTEM Gamma Curve Only [SYSTEM [1]]	
(SYSTEM Geo / Mudlog All Gas (SYSTEM (1))	
CVCTENC IN A C C INVETENCE	
/ SYSTEM Geo / Mudlog Some Gases [SYSTEM [I]] / SYSTEM Geology Log [SYSTEM [I]]	

- 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 *I* 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 **button** for the Add Curve Windows for **SP** and **Gamma Ray** Curves as the default values are good.

Add Curve	Add Curve
UWI / API: 223001201300000 Curve Heading Name: Se Curve Units: Mv v Depth Units: It v Null Value: -999.25000	UWI / API: [23001201300000 Curve Heading Name: [350mm3 R59] Depth Units: [1] • Null Value: [939,25000]
Depth Intervat: Use 0 to 0 for the whole log) Left / Bottom) (Right / Top) Intervat: 0.00 to 0.00 Scale. 100.0000C to 200.00000 Backup Scale: straight shift T Grid Type: Linear Cancel	Curve Scale Depth [Use 0 to 0 for the whole log] (Left / Bottom) (Right / Top) Intervat 0.00 to [0.00 Scale.[0.00000 to [150.00000] Backup Scale: straight shift Grid Type: Linear •

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 **button** for the Add Curve Windows for **Density and Neutron Porosity** once the scale values are good.

Add Curve	Add Curve
UWI / API: 23001201300000	UWI / API: [23001201300000
Curve Units: % ¥ Depth Units: % Value: 999.25000	Name: Density Porosity Depth Units: It Nall Value: -999.25000
Curve Scale Ites 0 to 0 for the whole log) (Left / Bottom) (Right / Top) Depth 0.00 to 0.00 Scale 60.000000 to 0.00000 Backup Scale straight shift T Grid Type: Linear T	Curve Scale: Use 0 to 0 for the whole log) (Left / Bottom) (Right / Top) Interval: 0.00 to 0.000 Scale; 60 to 0.00000 Backup Scale: Straight shift I Gird Type: Linear I
OK Cancel	0K Cancel
Add Curve	Add Curve
Uw/ / API: [23001201300000 Curve Heading Name: <u>Viculion Porositio</u> Depth Units: T Viulis: Viulis: 939,25000	Uwi / API: [23001201300000 Curve Heading Name: Neuton Porosity Depth Units: Tr V Null Value: [-939.25000]
Curve Scale (Use 0 to 0 for the whole log) (Left / Bottom) (Right / Top) Depth 0.00 to 0.00 Scale/(60.00000) to 0.00000 Backup Scale Straight shift T grid Type Linear T	Curve Scale Use 0 to 0 for the whole log) Use 1 to 0 for the whole log) Use 1 to 0 for the whole log) Use 1 to 0.00 Scale, 56 to 0.00000 Backup Scale, Straight shift Gird Type: Linear
0K Cancel	OK Cancel

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

Add Curve	Add Curve	Add Curve
UWI / API: 23001201300000 Curve Heading	UWI / API: 23001201300000 Curve Heading	UW/ / API: 23001201300000 Curve Heading
Name: Deep Induction Curve Units: Rtohms Image: Curve Units: <td>Name: Medium Induction Curve Units: Rtohms ▼ Depth Units: Rt Null Value: 999.25000</td> <td>Name: Shallow Induction Curve Units: Rohms Depth Units: It Null Value: 999.25000</td>	Name: Medium Induction Curve Units: Rtohms ▼ Depth Units: Rt Null Value: 999.25000	Name: Shallow Induction Curve Units: Rohms Depth Units: It Null Value: 999.25000
Curve Scale Use 0 to 0 for the whole log Left / Bottom (Right / Top) Interval: 0.00 to 0.00 Scale: 0.20000 to 2000.0000 Backup Scale: Staight shift I Gird Tupe: Loganthmic I	Curve Scale. Depth 10x0 to 0 for the whole log 1 [Left / Bottom 10, [Right / Top] Interval: 0.00 to 0.00 Scale: 0.20000 to 2000.00001 Backup Scale: Straight shift I Grid Tupe: Logarithmic I	Curve Scale (Use 0 to 0 for the whole log) (Left / Bottom) (Right / Top) Depth 0.00 to [0.00 Scale; [0.20000 to [2000.0000] Backup Scale; straight shift T grid Type Logarithmic
OK Cancel	OK Cancel	OK Cancel

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)"			_

	Query
	Select
	Clear Field
_	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 shale. **Type** those values into the fields and **click** on the **button**.

	UN
20	Cancel
amma Ray Shale	

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.

For Layer Inter	preted Facies'
Enter New Group ID	
Facies	
	Select Group
Cancel	OK

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.

For Layer 'Deposit	ional Environment'
Enter New Group ID	
Depositional Environment	
	Select Group
Cancel	OK

- 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**

Cance	el





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.

API	23001201300000	9	Surf. Loca	tion: 23	800 1 201 3000	00			
Well Name	Tutorial Core Log		Btm. Loca	tion: 23	300 1 201 3000	00			
Operator:	Anybody Oil & Gas Co.		Licen	see: Ar	nybody Oil & Ga	is Co.	Permit	# 342	561
Drilling Contractor:	Core em Up		P	ool: Bi	g		Field: Bi	gger	
County:	Ameriloo		Rig	1 #: 32	<u>)</u>				
Province/State:	Texas		Eleval	ions	Ground				. 2
Country:	USA		Refe	erence:	12		Ground	1/Co	llar: 13
Surface Coordinate	18			KB:	114		Lasin	g Flan	ige: 19
Latitude 35.326	594		N/S F	400 ft. N	lorth of the So	uth bounda	rv		
Longitude 102.06	7410		EAV:	550 ft E	ast of the Wes	t boundary	1		
Jutamadiata Casia	- Daint Canadiantes								
	g Point Coordinates		MVC F						
			E AM- E	_					
Longitude j);					
Bottom hole Coord	nates								
Latitude 35.326	751		N/S:	401 ft.	North of the Sc	uth bound	ary		
Longitude			E/W:	5550 ft	East of the W	est bounda	ary		
UTM Surface Cool	dinates	-		700574	12				
Northing: 391211	9		Easting:	/ 663/4					
lole Direction: Ve	rtical 🗾 🗖	Faulted	🗆 Devi	sted	Hole ID: F	irst Well			
)enths				_		Date	Time		Work Schedu
Drillers T.D. Driller	s T.D. Drillers T.D. Drillers T	.D. Loggers T.D. L	.oggers T.	D.	Spud:	May 12, 2	2016 12:30		Curves
(13) (13) 1130 1130	1130.45 [1130.45	5 1128.6	1128.6		T.D.:	May 19, 2	2016 17:30		Mud Types
KB to Ground Cul	Fil	Plugback S	idetrack		Rig Release:	May 21, 2	2016 08:00		Dir. Surveys
9	2			ř.	Well Status:	Potential	Austin Oil		Det. Lith.
				-		Sand Pro	ducer	218	Can record

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.

<u>Note</u>: 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

General Fonts Display Favorites Home Directory: C:\POWERSUITE_2018\	fells at Startup
Home Directory: C:\POWERSUITE_2018\	fells at Startup
Version Data Buffer Date Format Compatibility Lookahead	
MMM DD, YYYY 💌 V1.9 💌 500 m	

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 it you have the wrong home directory.

Show All Wells at Startup This check box when ractivated 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		Track Header Font		Casing String Font	
AaBbCcDdEe	Set	AaBbCcDdEe	Set	AaBbCcDdEe	Set
Survey Font		Layer Header Font		Date Font	
AaBbCcDdEe	Set	AaBbCcDdEe	Set	AaBbCcDdEe	Set
Bit Record Font		Formation Top Font		Core Sample Code For	nt —
AaBbCcDdEe	Set	AaBbCcDdEe	Set	AaBbCcDdEe	Set
Generic Category Font		Offscale Font		Sidewall Core Font	_
AaBbCcDdEe	Set	AaBbCcDdEe	Set	AaBbCcDdEe	Set
Depth Font		Core Box Font		MDT Font	
AaBbCcDdEe	Set	AaBbCcDdEe	Set	AaBbCcDdEe	Set
Depth Orientation; 💿 Vert.	← Horz	Show Depth Units:		Set As Def	ault Fonts: 🔽
				Арріу ІС	Conent Log
				Resto	re Defaults

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: C 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 v 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.

✓ SetAs 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 **Set button** beside the **MDT Font option** that we wish to change and this will activate the Font Window.

Font:		Font style:	_	Size:		
Anal		Regular		12		OK
Arial	^	Regular	^	12	~	Cancel
Arial Rounded MT		Narrow Bold		16	1000	10000000
Arial Unicode MS		Narrow Bold Itali		18		
Baskerville Old Face		Bold		20		
Bauhau/ 93	۷	Bold Italic v 24			¥	
Effects Strikeout Underline Color:		Script	Yyz	'z		
1	-	Western	_		•	

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

Display Tab

Symbology		
Arrowed Subintervals	Frequency @ 5":1 symbol every 5 💌 ft	
✓ Transparent Liti-	nology Profile 🔽	
Use Global Symbols Use Ratio \$	Scales 🔽	
Interbed Line Display Type		
Curve Backup Fill		
Grain Size		
Scale: Wentworth 💌 Verbal	Display: 🍳 (mm) Display: C 🛛 C Hard Edges	
Fill Pattern	 Soft Edges 	
	▼ Pattern Color: ■■ I	
Carbonate Textures		
Fill Pattern		
	A Haid Eugles 17 Juit Eugles	
92.		
Interpreted Lithology Layer		
Interpreted Lithology Layer Show Bedding Contacts: 🔽	Show Accessories: 🔽	
Interpreted Lithology Layer Show Bedding Contacts: 🔽 Monitor	Show Accessories:	
Interpreted Lithology Layer Show Bedding Contacts: Monitor Height D 5	Show Accessories: 🔽 Other Directional Survey display: Azimuth 🗨	
Interpreted Lithology Layer Show Bedding Contacts: Monitor Height [8.5] inches 16 inches	Show Accessories: Other Directional Survey display: Image: Display TVD Image: Display SSI	



Arrowed Subintervals - This check box version 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 \checkmark to make that change.

Interbed Line Display Type - This check box $\overrightarrow{}$ 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; Wentworth _____ Amstrat Canstrat Wentworth **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 I 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.





mon Display C This C 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.

CHard Edges This C 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 I 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 **T** In Scolor 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.





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.

pattern option is used. The background color is found in the Layer configuration for the Carbonate Texture Layer. Carbonate Textures CHard Edges This C 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 Contended This C 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.





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.

HOCK Pavolites	% Lithology Soft Order	Fractures Favorites	
Acc Favorites	Sedimentary Favorites	Trace Fossil Favorites	
Diagenesis Favorites	Generic Sym. Favorites		

<u>Rock Favorites</u> - 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]

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

<u>Acc Favorites</u> - 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 [glauconitic] 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.	
Trace Fossil Favorites - 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	ł
1.) Click on the Trace Fossil Favorites button in the System Options window, Favorites Tab.	
2.) Click on the Clear All 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.	
specific portion of the list. List is activated by the short name spelling.	
Trace Fossils Asterosoma	
Planolites	
4.) Click on the button to return to the System Options window.	_
up menu generated by the activation of the Sedimentary Structures Builder window in the Sedimentary Structures track / layer.)- e
1.) Click on the Sedimentary Favorites button in the System Options window, Favorites Tab.	
 2.) Click on the Clear All 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.	
This is the heart of the Log/Track/Laver 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. 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:

	Ec	og Configura	ntion Builder	×					
Available Logs			Active Log						
Log SYSTEM	•	Log Config.	Log: Tutorial Core Log	•					
Ages	~	Add All >>>	Fracks	: Contig.					
Annotation Annotations Auto Dean Stark Calculator		Show All	Y 1.40 Bandia new SF Y 1.40 Resistivity Y 1.40 Resistivity X 0.55 Denth 3	î					
Auto Test Interval Calcualtor Bedding Contacts Bioturbation		Hide All	Y 2.00 Vshale Y 1.00 Interpreted Facies Y 0.40 Depositional Environment Y 2.00 Core Photo Stack N 3.00 Core Photo Magnify 1.00 Core Photo Magnify						
Bit Records Carbonate Texture Casing		Add >>>							
Core Core Box Data	*	Delete	Y 1.00 Core Box Sleeve Information Y 0.55 Depth Y 1.00 Auto DS Selector	~					
	~	Show/Hide	Track Width 1.40 Log Width	24.90					
	4	Move	C Layers Layer	Config.					
C Layers Ages			SP (23001201300000) Gamma Ray (23001201300000) Curve Fill Shale (23001201300000) Curve Fill (23001201300000) (23001201300000)))					
		Exit							

Fundamentals of the Log Configuration Builder Window

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

The Available Logs section or <u>left</u> 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 reacts, 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 <u>Tracks</u> and their associated layers or any of the existing <u>Layers</u>, 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 **Clayers**, 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 <u>right</u> side of the window displays the track and layer configuration of the <u>Active Log</u> (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: <u>Selection Buttons</u>

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 _______ 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 **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 **DK button** and the track will be added above the Gamma Ray SP Track or to the left on the log.



Get N	Name 🛛 🕺
New Track Name: F	ormation Tops
ОК	Cancel

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.
- Highlight the Formation Top (Long Name) layer, in the Layers list box, by clicking on it once. Notice that the Layers radio button <u>Layers</u> is <u>automatically</u> activated by highlighting a given layer.
- 3.) Click on the button. This action will prompt you with a system message, "*Do you want to delete the selected layer in your log*?" Click on the vessel 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.

Track Configuration									
Save Undo New Det First Prev ? Next Last									
Name: Gamma Ray - SP Sequence: 1	Width: 1.4								
Foreground Color: Background Color:	Depth Offset:								
Current Layer Gamma Ray Remarks:	^								
	8								
Heading: GR - SP	Borders								
23-001-20130	✓ Left / Bottom								
	Fight / rop								

- 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 Ves 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 <u>Move</u> button and it will change to <u>Move Start</u> 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).



Available Logs			Active Log							
Log SYSTEM	•	Log Config.	Log: Tutorial Core Log	ı <u>·</u>						
 Tracks Ages 	~	Add All >>>	Tracks	Track Config.						
Annotation Annotations Auto Dean Stark Calculator		Show All	Y 1.40 Neutron Density PEF Y 1.40 Resistivity Y 0.55 Denth 3							
Auto Test Interval Calcualtor Bedding Contacts Bioturbation		Hide All	Y 2.00 Vshale Y 1.00 Interpreted Facies Y 0.40 Depositional Environment Y 2.00 Core Photo Stack N 3.00 Core Photo Magnify							
Bit Records Carbonate Texture		Add >>>								
Core Core Box Data	~	Delete	Y 1.00 Core Box Sleeve Information Y 0.55 Depth Y 1.00 Auto DS Selector							
l ore liensitu	*	Show/Hide	Track Width: 1.40	og Width: 24.90						
	Ψ.	Move	C Layers	Layer Config.						
C Layers Ages			SP (2300120130000 Gamma Ray (23001 Curve Fill Shale (23001 Curve Fill (2300120130000	0) 201300000) 201300000) 0)						
		Exit								

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 Simply click on the LAS button, on the Import Toolbar, to activate the LAS Reader window.

e can rich hepotes	options minuo	n neip				
Connect Disconnect Access Registration	,					
New Open Close	Ctrl+N Ctrl+O					
Import	,	AGS Data				
Export Backup	,	ASCII Core Data				
Print Log Print to TIFF Print Morning Report	Ctrl+P	Core Photos Dip Meter INI Settings File				
Print Well End Report		LAS				
Print Reports to Word® Print Setup		Log / Well MDT				
Exit Survey Viewer Core Photo Profile Too	l	Ranged Data Slide Rotate Surveys				

di s	Open		×				
Look in: 🚺	100141901223w500	•	🗈 💣 💷 🔻	ł			
Name	*		Date	Туре			
1001419	901223W500.las		12/20/201	LASE			
and the second sec	0/14/0010	LACT					
2300120	01300000.las		8/14/2013	LAST			
2300120 File name:	23001201300000.las		8/14/2015 Ope	LAS I			
2300120 K File name:	23001201300000.las		8/14/2015 Ope	LAST >			

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_2018\System\100141901223W500\230012013000000.las and

highlight the file by **clicking** on it **once** and then **click** on the **button**. You will see the window shown below. We will default to the importing of Curve data.

Denth Column DEPT

tte button. Drag the co

Units. FT FTOHM.FT M3/M3 GAPI

FTOHM FT

)rag with the Left Mor

•

Base 1134,1726

Inpot

0.3281 0.6562 0.9842 1.3123 1.6404 1.9685 2.2966 2.6246 2.9527

PE-L

Name DEPT

utoria	al					POWER SUITE 2018
			- LasReade	a.		- 5 💌
Gamma Rav	Medium Ind.	Neutron Por-	Shallow Ind.	SP .	Vshale	
198,3816	-999.2500	-999.2500	-999.2500	-999.2500	178.3816	
290.6737	-999.2500	-999.2500	-999.2500	-999.2500	270.6737	
374.3600	-999.2500	-999.2500	-999.2500	-999.2500	354.3600	
448.5727	-999.2500	-999.2500	-999.2500	-999.2500	428.5727	
493.3561	-999.2500	-999.2500	-999.2500	-999.2500	473.3561	
512.7336	-999.2500	-999.2500	-999.2500	-999.2500	492.7336	
500.1403	-999.2500	-999.2500	-999.2500	-999.2500	480.1403	
487.4084	-999.2500	-999.2500	-999.2500	-999.2500	467,4084	
464.0031	-999.2500	-999.2500	-999.2500	-999.2500	444,0031	
423.2073	-999.2500	-999.2500	+999.2500	-999,2500	403.2073	
377.1692	-999.2500	-999.2500	-999.2500	-999.2500	357.1692	v
		Choose D	ala Type: Curves		•	^

Overview of window	

Tutorial Core Lo

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, Inclinometry, 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

σ

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	DSO8	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. 🔨	Curve Laver ID	Existing ID	Mapped ID	Acti
🗆 🎇 DEPT	PT Depth Curve FT Gamma Ray		Gamma Pau	Gamma Paul	1	Appon		
🗆 🎇 CNTC	HGNS-B	2IN	CO	1/S	me canina riay	u anina nay		App
🗆 🎇 HNPO	HGNS-B	2IN	EN	M3/M	BE SP	SP		App
🗆 🎇 AT10	AIT-H	3IN	ARR	FTOH	Density Porosity	Density Porosity		App
DIP_APP	DIPP APPER	RTURE		DEGA	Neutron Porosity	Neutron Porosity		App
🗆 🎇 A060	AIT-H	3IN	ARR	FTOH	Deep Induction	Deep Induction		App
🗆 🎇 PEF8	HDRS-B	2IN	HI	B/E	Deep induction	Deep induction		Abb
🗆 🎆 TT 4	DSLT-H	2IN	TB	US	Medium Induction	Medium Induction		App
DS08	HDRS-B	2IN	HI	ММ	Shallow Induction	Shallow Induction		App

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

lame	Desc			Units. 🔺	Top	Curve Layer ID	Existing ID	Mapped ID	Action
📲 GR	HGNS-B	6IN	CA	GAPI	100	🔀 Gamma Ray	Gamma Ray	GR	Append
AO 30	AIT-H	ЗIN	ARR	FTOH	10	🔀 SP	SP	SP	Append
A010	AIT-H	3IN	ARR	FTOH	Base	🔀 Density Por	Density Porosity	DPHI_SAN	Append
🞇 НТЕМ	HGNS-B	6IN	CA	DEGC	1134.17256	🔀 Neutron Por	Neutron Porosity	NPOR_SAN	Append
😹 HNPO	HGNS-B	2IN	EN	M3/M	1	🔀 Deep Induct	Deep Induction	AT90	Append
NPOR	HGNS-B	6IN	EN	M3/M	Step	🔀 Medium Ind	Medium Induc	AT30	Append
AT 30	AIT-H	3IN	ARR	FTOH	0.32808	🔀 Shallow Ind	Shallow Induc	AT10	Append
📕 SP	AIT-H	6IN	SP0	MV					
RHOZ	HDRS-B	2IN	ST	KG/M	Import				
HCAL	HDRS-B	1IN	CA	MM					

 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_2018\System\100141901223W500\ Folder. Las File File About

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.

- 3. 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.
- 4. Click on the **button**. You will then be prompted with a system message after the import has finished.



5. Acknowledge the Finished Import message. Click on the 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

2		Ŭ		Power*Co	re 2018 - [-	<i> Tutorial Core Log [23001201</i>	[300000]]						- 0 ×
File Edit View Reports (Options Window Help		? h ? :			8 5 8 8 8 8 8 8 1	Q, 191 🛄 %	P	8 8 5		SL 🛛 <u>05</u> 0+	e 🔹 🔛 🔳 🔛	_ # ×
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GR - SP 23-001-20130	Neutron Density Logs	Resistivity		V Shale	Ŧ	8	Core Bo		2	ě	74	2	< Tes
Gamma Ray (GAP) Formation 100 2 75 154 100 - 20 100 - 20	Neuron Parasity (N1M3) 00.0.045 0.4 0.45 Casaly Prosity (N1M3) 0.0-0.45 0.3 0.15	Staton Induction (FTDHIL FT) 200 Medium Induction (FTDHIL FT) Deep Induction (FTDHIL FT) 200	Depth	Votaie (%) 8 28 48 68 80105	orpreted Facies	re Photo Stack	x Sleeve Internation	Depth	to DS Selector	o PSD Selector	to MBI Selector	de Si Selector	r Point Indicator
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For Help, press F1					_				pged	logy UPDATE	KB: 56		>
			-						the second second second	and the second se	Anton	Gorlin	



Set SecondaryCurve

Fill Modes - 1 Curve

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Save

Cancel

Fill from Curve to Value

Value: 65

Background colo

Example

Main Curve (units)

Second Curve (units)

Gamma Ray

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.

Set Main Curve

Gamma Ray

- Curve Ontions

Pattern Type

*

-

black

PtoP

Grid Type

Fill Option

Fill Patterns

Solid Foreground

Foreground color

Solid Rock Fill

Fill Modes - 2 Curves

G TVD C SSL

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.

- 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.
- 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 <u>Set Main Curve</u> **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.

 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.



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- 2.) Double click anywhere within the Curve Fill layer or click on the Toolbox M 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.

- 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.

Gamma Ray Clean	OK
20	Cance

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.

Select Gamma Ray Source	
Vshale Options	
Calculation Method	•
Vshale (GR)	
Line Width	•
Līne Pattern	•
Line Style	
Line Color	۲
Scale	
Show Values	
Value orientation	
Import	۲
Point Indicators	•
Offscale Numerics	
Edit Curve	
Open Curve Average Window	
Scale Change Line Color	
Scale Change Line Thickness	•
Scale Text Orientation	•
Edit Options	
Add / Edit / Open Link	



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.

New Core	Delete Core	Change Colors:	Lost Core	Rubble	Preserv	e Core
ore ID						
				•		Edit Core
iraphic File	2				-	
and prine in the						
Section Detail	•					
Section Detail	s <<<	>>>				
Section Detail	s		<u></u>		Clockw	ise Rotation
Section Detail Delete Section	s Bas	e Depth: 0	Type:	•	Clockw Deg.*:	ise Rotation
- Section Detail Delete Section Top Depth:	s Bas Section Locked	e Depth: 0	Type:	•	Clockw Deg.*:	ise Rotation

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 10014190123W500_07.jpg file from the PowerSuite_2018\System\100141901223W500 folder an							
	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

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Date	Ту ^
4/29/2013	JP
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sleeves from the PowerSuite_2018\System\100141901223W500 folder. Click on the button this will fill in the Core ID window with a cropping profile. These have been premade for these photos. Refer to manual or press the F1 key to open the on line help.

Look in: 🚺	100141901223W500	•	🗈 💣 💷	•
Name			Date	Ту ^
all 6 slee	eves.cgp		12/19/201	CC
bottom	2 sleeves.cgp		12/19/201	CC
bottom	4 sleeves.cgp		12/19/201	CC
middle	2 sleeves.cgp		12/19/201	CC
top 2 sle	eves.cgp		12/19/201	C(
<				>
File name:	bottom 2 sleeves.cgp		Opt	en
Dis diama	Constantin Butte (from)			cel

Core ID	OK
10	Cance
Select Graphic	
:\POWERSUITE_2	015\SYSTEM\1001419
Select Core Profile file	
Select Core Profile file C:\POWERSUITE_2	015\SYSTEM\1001419
Select Core Profile file C:\POWERSUITE_2 Orientation*	: :015\SYSTEM\1001419 Scale%:
Select Core Profile file C:\POWERSUITE_2 Drientation* 270 🗨	: 015\SYSTEM\1001419 Scale%: 68
Select Core Profile file C:\POWERSUITE_2 Orientation* [270 Top	: 1015\SYSTEM\1001419 Scale%: [68 Sleeve Length (in)

- 7) Type 68 in the Scale % Field.
- 8) Type 932 in the Top Depth Field.
- 9) Type 30 in the Sleeve Length Field.
- 10) **Click** on the **Preview button** if you want to have a look at your cropping areas. This will activate a system message indicating the Cropping file and the Core Photo file that is opening.
- 11) **Click** on the **DK button** and the Core Graphics editor will open.



12) Click on the button to close the window or the File menu and select exit. This will put you back into the Core ID Window. If you have made any changes you can now resave the cropping file. Click on the

button and your core photos will be stacked at the depths entered into this window.

- 13) You will have to right click on the Core Photo stack (with the builder open) and select the scaled view menu selection. Otherwise you will have a very narrow track with nothing showing until you get down to a really small scale.
- 14) **Click** on the **Mon** to close the Core Group window.





2		· · · · · · · · · · · · · · · · · · ·		Ŭ	Power*Core 2018 - [-	d> Tutorial Core Log [23	001201300	0000]]		- 6
File Edit View	Reports Options Window	Help								
*** • • •				2 12 0	2 🖬 🖸 📕	85388 B	B. [2] Q. I	n 🛄 % 📶 P	16 14 15 18 18 18 SL 10 08 6	• e 💠 😫 🔳 🔛
Test Point Indicate	ar • % 24 E3 I	1 10	9 MD - 1:48	-					Core Group 1	×
Neutron 1000000000000000000000000000000000000	Resistivity	Cepto	V Shale	Interpreted Faciles	Core Prieto Stack	Care Box Steeve Internatio	Depth	New Core Delete Core Core ID [10 - 100141901223W500_07 Graphic File	Drange Colors Lost Core Robble	Piecerve Core Edit Core 0000
						5 Per 10 39: 1 2es 10 39: 2		C-VPOWERSUITE_2019:GVS Section Details Debte Section Top Depts [332 Ba F Section Locker Update	TEAN100141501223-600 >>>> Seeve 1 see Depth: [934.5 	Clockwise Rotation Deg^ 270 -

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

1. 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 **laport 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.

	Toggle Magnify View	
1	Scaled View	
	Change Group	
	Core Photo Import	
	Add Lost Core to Lithology	
	Edit Options	•
	Add / Edit / Open Link	
	Exit	

riie.	can view nepoits option	is windo	м нер	
	Connect Disconnect Access Registration	ж		
	New C Open C Close	Ctrl+N Ctrl+O		
	Import Export Backup	•	AGS Data ASCII Core Data	
	Print Log 0 Print to TIFF Print Morning Report Print Well End Report Print Reports to Word® Print Setup	Ctrl+P	Core Photos Dip Meter INI Settings File LAS Log / Well MDT	
	Exit Survey Viewer Core Photo Profile Tool		Percent (%) Ranged Data Slide Rotate Surveys	,

File Edit View Paparts Ontions Window Help

Look in: 400141901223w500	• +	* 🖻	:::: *
Name		Date	Ту
core photo import file Imperial.csv		1/11/201	6 M
23001201300000.las		8/14/201	5 LA
core recovery sheet.csv	8/5/2015	1 M	
core photo import file.csv		7/28/201	5 M
tutorial las mapping file.cvm		2/18/201	5 C\
<[>
File name: core photo import file Imperial.csv			Open
Files of type: All Files (*.*)		न	Cancel

2. Select "core photo import file Imperial.csv" from the PowerSuite_2018\System\100141901223W500\ folder

and either **double click** on the **file name** or **click once** on the file name and **click** on the **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.



Power*Core Imperial Tutorial

	Set Delimiter			Set Delimiter	×
🤄 Comma 🛛 🤆 TAB	C Space		C Comma C TA	B 🕫 Space	
Example 18< column-break>C:\Power	Suite_2018\system\100141901223W500\100141901223W ¹		Example 18,C.\PowerSuite_2018	\system\100141901223W500\10014190	11223W500_12;jpg.C:\F
Correct	Finish Q	Not Corroct		Finish	, i

3. Highlight the correct corresponding is 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 **button** to close this window and activate the Core Photo Import window shown below.

	Core	Photo Import	×
File			
Open File	Open Mapping File	Core Photo Group Save Mapping File	1 Clear All Mapping
Data Column Data Column 1 Column 1 Column 2 Column 3 Column 4 Column 5 Column 6		Field Graphic Profile Scale	Mapped Column Column 1 Column 2 Column 3 Column 4 Column 5 Column 6
Edit Data File	Reload Data File	Crientation: 90	> •
Sample pottion of file Core No. Core Picture ID.Core 1.C: YPowerS uite_2018\system 2.C: YPowerS uite_2018\system 3.C: YPowerS uite_2018\system 4.C: YPowerS uite_2018\system 5.C: YPowerS uite_2018\system 5.C: YPowerS uite_2018\system	Picture Cropping File, Core Start Depth, Sleev \100141901223w500\100141901223w50 \100141901223w500\100141901223w50 \100141901223w500\100141901223w50 \100141901223w500\100141901223w50 \100141901223w500\100141901223w50 \100141901223w500\100141901223w50 \100141901223w500\100141901223w50	ve Length,Scale 0. 01. jpg,C:\PowerSuite_2018\system\100 0. 01. jpg,C:\PowerSuite_2018\system\100 0. 02. jpg,C: \PowerSuite_2018\system\100 0. 03. jpg,C:\PowerSuite_2018\system\100 0. 03. jpg,C:\PowerSuite_2018\system\100 0. 04. jpg,C:\PowerSuite_2018\system\100	141901223W500\top 2 steeves.cgp.848 141901223W500\top 4 steeves.cgp.860 141901223W500\top 4 steeves.cgp.860 141901223W500\top 2 steeves.cgp.866 141901223W500\top 4 steeves.cgp.872 141901223W500\top 4 steeves.cgp.872

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.

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 ^{Open Mapping File} button and select "tutorial las mapping file.cvm".

Importing / Mapping of Core Photo data.

1. 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.

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

	Core	Photo Import	
e			
		Core Photo Group	1
Open File	Open Mapping File	Save Mapping File	Clear All Mapping
ick and Drag with the	Left Mouse button. Drag the columns of the data file	e over to the corresponding field	
) Data Column		Field	Mapped Colum
Z 🧱 Column 1		Core ID	Column 1
🛛 🎇 Column 2		😹 Graphic	Column 2
🛛 🎇 Column 3		😹 Profile	Column 3
🛛 🌺 Column 4		😹 Тор	Column 4
🛛 🧮 Column 5		🔀 Sleeve Length	Column 5
🛛 🎇 Column 6		😹 Scale	Column 6
		Import	
dit Data File	Reload Data File	Orientation: 90	
dit Data File	Reload Data File	Orientation: 90	
dit Data File mple portion of file ore No.,Core Picture I C:VPowerSuite_2018 C:VPowerSuite_2018 C:VPowerSuite_2018 C:VPowerSuite_2018 C:VPowerSuite_2018 C:VPowerSuite_2018	Reload Data File D.Core Picture Cropping File,Core Start Depth,Sleev, system\100141901223W500\100141901223W500 system\100141901223W500\100141901223W500 system\100141901223W500\100141901223W500 system\100141901223W500\100141901223W500 system\100141901223W500\100141901223W500 system\100141901223W500\100141901223W500 system\100141901223W500\100141901223W500	Import Solution So	41901223W500\top 2 sleeves.cgp,848 41901223W500\bottom 4 sleeves.cgp,860 41901223W500\top 4 sleeves.cgp,860 41901223W500\top 4 sleeves.cgp,864 41901223W500\top 2 sleeves.cgp,864 41901223W500\top 4 sleeves.cgp,872



4. Acknowledge the Import message. Click on the button and then click on the - Click or exit or

click on the **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 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



Split

Core Empty

Slough

Rubble

Lock Section

Remove all Locks

Rubble Removed Preserved

✓ Lost Core Mode: Create

Add Lost Core to Lithology

Toggle Magnify View Edit Options

Add / Edit / Open Link

Scaled View

Delete Core

Exit

D

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 \oplus 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 [149 [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.

- 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 $\frac{1}{2}$ 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 **Ves button.** This will decrease the lost core interval (indicated by a colored space) within the photos and will decrease indicating less Lost Core.



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

(Undo ² 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 core d 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 **Yes** 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.

Remove G	iap?	

- 5. Click on the <u>Yes</u> 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 $\stackrel{\frown}{\longrightarrow}$ 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 yes 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 Ves 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 **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 <u>Yes</u> 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"	993' 3" to 998' 8"
	Go to page 40 in manual to Input Slough	
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.





Туре:	Core	•
	Core Empty	
	Rubble Rubble Re Slough Preserved	eme

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 **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.

1	
ete Core Change Colors: Lost Core	Rubble Preserve Core
00_05.jpg	- Edit Core
Top: 910.50 Base: 915.46	Rec.: 4.92 (99.19)
18\SYSTEM\100141901223w500'	
<<< >>> Sleeve 4	i
-	Clockwise Rotation
Base Depth: 913.61 Type Rubble	Clockwise Rotation Deg.* 90
	Ete Core Change Colors: Lost Core

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 our 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 our menu. This will split the sleeve 2 and highlight the upper Sleeve 2.
- 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 **Ves** 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.

- Right Click on Sleeve 2 Core 20 on the Photo Stacking Layer and select Slough from the menu pop out. This 6. will activate the "Remove Gap" message box.
- Yes 7. Click on the 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.

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

 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.



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 Del		Facies	Intervals	
834.	to 843.		F1 (F1)	•
 Confirm Delete Snap to Facies 	✓ Display Text ✓ Display Fill	- Text Options Vertical Alignment:	center 💌	
	🔽 Display Long	Horizontal Alignment:	center 💌	

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 **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.

C 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.

Desque 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.

Direntation: 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.





	1	Facies Builder		
Save Del	to	Facies	Intervals	1
 ✓ Confirm Delete ✓ Snap to Facies 	I Display Text I Display Fill	Text Options Vertical Alignment:	center 💌	-
Add / Edit Fill	Display Long	Horizontal Alignment: Orientation:	center 💌	

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 button to clear the window to add a new facies.

FILIS TOF FACIES		Fills for Facles
Save Undo New Del First Prev ? Next Last	Color ? 🔀	Save Undo New Del First Prev ? Next Last
Description	Basic colors:	Description
		F1
Short Name		Short Name
		F1
Back Color		Back Color
Fore Color		Fore Color
Gradient		Gradient
Pattern:	Custom colors:	
Sampling Interval Sample Code		Sampling Interval Sample Code
Sample Size Sample Min Sample Max Lost Lore Max		20 10 30 30 4
*áll Sizes are in Inches	Define Custom Colors >>	*áll Sizes are in Inches
	OK Cancel	

- 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 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.

Shortcut Options		×
Record saved succ	essfully. Choose one of the following shortcuts.	
Start New Record	Move to Next Record Exit Cance	*

- 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** I 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.
- Click on the Save button or press ALT-S. The Shortcut Options window will be shown.

	Fills fo	r 'Facies'	×
Save Undo	New Del	First Prev ?	Next Last
Description			
F2			X
Short Name			
F2			
Back Color			
Fore Color			
Pattern:	Gradient		•
Sampling Inf	erval	Sample Code	
NA	+		
Sample Size	Sample Min	Sample Max	Lost Core Max
*All Sizes are i	n Inches		,



Shortcut Options			
Record saved succ	essfully. Choose one of the	following sh	ortcuts.
Start New Record	Move to Next Record	Exit	Cancel

- 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 source button or press ALT-S. The Shortcut Options window will be shown.



- Save Undo New Description * Short Name Back Color Fore Color 🗸 Gradie * Patterr Sampling Interval Light Sample Size Lost Core Max Sample Min Sample Max 30 20 40 4 *All Sizes are in Inches
- 29) Select 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 **Interpretive 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.



Fills	*	F1		
Save		F2		
Delete		F3	Facies Builder	×
 Display Fill 			lateral latera	
 Display Text 	-		Save DelFacies	
 Display Long Form 	100		848.17 to 851.75 F2 (F2)	-
Opaque Text				
Vertical Align			🔽 Confirm Delete	
Horizontal Align			I Snap to Facies I Display Text ☐ Text Options	
Vertical Orientation			Display Fill Vertical Alignment	
Change Group				
Edit Options			Add / Edit Fill I Display Long Horizontal Alignment:	
	11.		Orientation: h	
Add / Edit / Open Link				Evit
Exit				E AIL

Click and drag the mouse from 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 \mathbb{V} 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 $\frac{1}{4}$ 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.

	1	Facies Builder		×
Save Del	to	Facies	Intervals	•
 ✓ Confirm Delete ✓ Snap to Facies 	I Display Text I Display Fill	Text Options Vertical Alignment: Horizontal Alignment	center 💌	
Add / Edit Fill	I✓ Display Long □ Opaque Text	Orientation:	v v	Exit

- 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 **yes** 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 \downarrow , (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.

<u>Note</u>: You are not allowed to overlap an existing facies <u>entirely</u> 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 _ ?'

<u>Note</u>: 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 2" Click on the Yes button to confirm the deletion

want to DELETE to ?" Click on the ves button to confirm the deletion.

<u>Note</u>: 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.

	Delete Intervals	×.
	Do you wish to delete all intervals between 1058.00 and 11	20.00?
	Yes	No
Click on Yes buttor	n and the Intervals dragged over will be delete	ed.

<u>Note</u>: 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.

Fills Save

Delete

~

~

~

Display Fill

Display Text

Vertical Align

Horizontal Align

Change Group

Edit Options

Exit

Vertical Orientation

Add / Edit / Open Link

5

Display Long Form Opaque Text



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.

	Dean Stark	Intervals	×
ID	Top	Bas	e
Description	, lv	ĮΫ	
		🔽 Snap to	Interval
Save	Delete	New	Exit

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

Calculate Dean Stark Intervals
Renumber Intervals
Delete
Edit Options
Add / Edit / Open Link
Exit

- 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.

ID	Тор		Base
	0		0
Description			
		I⊽ S	nap to Interval
Save	Delete	New	Evit

Mouse Pointer Method

- 2. Click on the 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 **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.

Dean Stark Intervals		Calculate Dean Stark Inte	rvals
ID Top	Base	Renumber Intervals	
0	0	Delete	
Description _	· ·	Edit Options	•
Save Delete New	Snap to Interval Exit	Add / Edit / Open Link Exit	

- 2. **Right click** anywhere <u>within</u> 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.

Calculate Dean Stark Intervals
Renumber Intervals
Delete
Edit Options
Add / Edit / Open Link
Exit

Deleting Multiple Intervals

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

Delete	Dean Stark Intervals	
Do you wish to delete all Dear	n Stark Intervals between 14.53	and 16.98

- 4. Click on <u>Yes</u> button and the Dean Stark intervals encompassed with your drag will be deleted accordingly.
- 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 **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.



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



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- 3. 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. 4.



- 5. 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. 6.



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. 1.



Тор	Base	
0	0	
Top ID	Base ID	

2. Right click anywhere on the Auto MBI 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 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 **Exit** 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 save 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 save 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.

Tee	Pres	4	Lock to Dean Stark Intervals	
TOP	Dase		Delete	
1074.38	1084.25		Fill Dean Stark Intervals	
Top ID	Base ID		Renumber Intervals	
61	64		Edit Options	•
-			Add / Edit / Open Link	
			Exit	

- 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.

Тор	Base	
0	0	
Top ID	Base ID	
Save	Delete New	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.





- 4. Click on test 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.

Тор	Base	
	0	
Top ID	Base ID	
Save	Delete New	Exit

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**.



8. Click on the **Exit** 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

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

Active Layer Configuration [Test Point Indicator]	Active Layer Configuration [Test Point Indicator]
Layer - Daplay Settings Curve Definitions Layer Scales Data Group IDs Formation and Age Daplay Dip Meter Definitions Save Undo Data Type: Core Test Font Name: Test Performance Curve Scale on Track © Display Layer Name or Curve Scale on Track © Display Rackup scales Display Backup scales Display Scale Onnance Users Display Depth-Avis Grid	Layer - Display Settings Curve Definitions Layer Scales Data Group IDe Formation and Age Daplay Dip Meter Definitions Save Undo Data Type: Core Test Point " Name: Thm Section Indicators UWI
OK Cancel Help	OK Cancel Help

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



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

Entering Thin Section Points (Mouse Pointer Method)

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

pepth	Depth I		Core Po	int Test	~
		Depth			
		0	_		

2. **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.
- 4. Click on the **button** or Press the **Esc** key on the keyboard to exit from the **Core Point Test Builder** window.

Entering Test Points (Key Pad Method)

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

	COLE NO	ant rest	
Depth			
2125			
Save	Delete	New	Exit

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

X- Thin Sections	Renumber Tests Delete
	Edit Options
93.05	Add / Edit / Open Link Exit
X- Thin Sections	

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

Deleting a Single Interval

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



F	Renumber Tests	
E	Delete	
E	dit Options	٠
F	Add / Edit / Open Link	
E	ixit	

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



- 4. 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.
- 6. Click on the **Exit** button or Press the Esc key on the keyboard to exit from the Core Point Test Builder window.

Deleting Multiple Intervals

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

Depth		
2125		
	 -	-

- 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.

Dele	te Core Point Tests	
Do you wish to delete all Co	ore Point Tests between 85.6	i0 and 97.20?
	Yes	No

- 4. Click on button and the Core Point Test encompassed with your drag will be deleted accordingly.
- 5. 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**.
- 6. 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.
- Export 2. Click on the button. This will activate a Specify Core Sleeve Data Export File Name window.



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

		System Information- Core Data Export	
		A file ABC Core sleeve data.CSV will be created in the C:\Users\Public\Documents\Documents\ directory. Do you wish to proceed?	
		Yes No	
4.	Click on the <u>Yes</u> button.	This will activate the Core Sleeve Data Ex	port File Created window.
		Core Data Export File Created	*
		File C:\Users\Public\Documents\Documents\ABC Core sleeve data.CSV created	
		OK	1
5	Click on the OK button	to exit Export Core Sleeve Data window	

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 pass 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.

#	Specify Dean Stark Exp	oort File Name	×
Save in: 🚺	BACKUP	• ← 🗈 💣 ■•	
Name	*	Date modified	Ту
Core Po	int test.csv	2014-12-02 11:06 .	M
Core sle	eve data.CSV	2014-12-02 10:52 .	M
PSD Tes	t Intervals.csv	2014-12-02 10:46 .	M
۲.			>
File name:	dean stark intervals.csv	Save	e
Save as type:	Export Files (*.CSV.)	Canc	el

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.

	5 A CL 1	12-01
Ű	C:\PowerSuite_2015\BACKUP\ directory.	ed in the
	Do you wish to proceed:	
	Do you wish to proceea:	

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

File C:\PowerSuite 2015\BACKUP\dean star	k intervals.csv created
	a menosies recoreco
	ОК

5. Click on the **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 *tore interval toolbar*. This will activate the Export Core Test Intervals window.

File	Edit View Reports	Options Window	Help
	Connect Disconnect Access Registration		
	New Open Close	Ctrl+N Ctrl+O	
	Import Export		ASCII Lithology Export
	Backup Print Log_ Print to TIFF Print Marning Report Print Well End Report Print Reports to Word® Delay Salar		ASE Format
		Ctri+P	Core Interval Tests Core Point Tests Core Sleeve Data Dean Starks INI Settings File LAS
	Exit Survey Viewer Core Photo Profile Tool		Log / Well Slide / Rotate Surveys Well as LAS WS format



- 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 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 **Save button**. This will activate the System Information window asking you if you wish to proceed.

	System Information- Core Interval Tests Export	
	A file PSD Test Intervals, CSV will be created in the C:\PowerSuite_2015\BACKUP\ directory. Do you wish to proceed?	
	Yes No	
button. Thi	s will activate the Core Interval Test I	Export File Created window.
	File C:\PowerSuite_2015\BACKUP\PSD Test Intervals.CSV created	

OK

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

<u>Y</u>es

4. Click on the



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 Select on the Export toolbar. This will activate the Export Core Test Point window.

Ide Edit View Reports Options Wind Connect Disconnect	aw Help	
Access Registration New Ctrl+N Open Ctrl+O Close		Export Core Test Points
Import + Export + Backup	ASCII Lithology Export + ASE Format	 Comma Separated Values (*.CSV) Tab Separated Values (*.TXT)
Print Log Ctrl+P Print to TIFF	Core Interval Tests Core Point Tests	C Space Separated Values (*.T×T)
Print Morning Report Print Well End Report Print Reports to Word® Print Setup	Core Sleeve Data Dean Starks INI Settings File LAS	Export Exit
Evit Survey Viewer Core Photo Profile Tool	Log / Well Slide / Rotate Surveys Well as LAS	

- 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 Core Point Tests Export File Name window.

2	Specify Core Point Te	sts Export File Name	×
Save in: 🚺	BACKUP	• 🖬 🍅 💌	
Name	*	Date modified	ту
Core sl	eeve data.CSV	2014-12-02 10:52	м
B PSD Te	est Intervals.csv	2014-12-02 10:46	м
<			>
File name:	Core Point test.csv	Save	
Save as type	e: Export Files (*.CSV)	✓ Cance	

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 **Core Point Tests Export File Created** window.

core rome reads export in	ereneeree and
File C:\PowerSuite_2015\BACKUP\Core Poin	nt test.csv created
	[
	ОК

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: <u>Active Log</u>

The Active Log section or <u>right</u> side of the window displays the tracks and layer configuration of the <u>Active Log</u> (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 <u>not</u> 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** I Gradient to activate a check mark.
- 6.) **Click** on the Save button and then select Statt 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 OK button. and then click on the
- 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 OK button. and then click on the
- 15.) Click on the Gradient Gradient to activate a check mark.
- 16.) Click on the Save button and then select Statt 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 0K button.
- 20.) Click on the Gradient Gradient to activate a check mark.
- 21.) Click on the Save button and then select 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].

Save Undo	New Del Prist Prev 7 Next Last
escription	
iual riat	
hort Name	
302	
Back Color	
Fore Color	
	🔽 Gradient
Pattern:	



Delete	-		-
Fills	×	001	Fills for Depositional Environment
Display Fill		002	
Display Text		003	Marine (001)
Display Long Form		004	None Selected
Opaque Text	1		Display Text For Options
Vertical Align			Display Fill Horizontal Alignment: Center
Horizontal Align			Doague Text Orientation: V
Vertical Orientation			
Edit			220.40
Edit Options			Top Depth: 330.40 Base Depth: 334.46 Dbl Click Interval Entry 🔽 Snap to nearest 🔽
Add / Edit / Open Link			(
Exit			Add / Edit Fill Save

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" 1084' 3.00"** 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 **V**

is activated) **1025' to 1084' 3''** 1025' . You can also **type** in the **depths** in the builder and **click on the** Save **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.

Fro

	onto that i h		
m 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

 Delete

 Fills

 Display Fill

 Display Text

 Display Long Form

 Opaque Text

 Vertical Align

 Horizontal Align

 Vertical Orientation

 Edit

 Edit Options

 Add / Edit / Open Link

 Exit

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

 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.



- 2) If there is a Formation Top entered (the deepest will show up upon activation) **Click** on the **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.



- 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.



			We	II Formation	3			×
Save Undo S Group:	New hort	Del Fi Long Mannville	st Prev ? N	ext Last K.B. 12 Bound	ary Type:	Gro 3 conf (co	und	Casing Flange
Formation	nm	McMurra Middle	y Cariba	Seq#:	Long 17.67	 Name D Alignr	isplay Dep nent: Tigh	th:
mesozoic		•	lower			toanosis:	MD	TVD
Age:) millior	 iyears	Thickness MD: 96,75 TVD: 96,75	Calculate Thickness		Sample: Log: Display- Prog.	929.67 929.67 C Smp	929.67 929.67

- 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 is 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.

	1	Nell Formatio	n		
Save Undo New	Del First Prev ?	Next Last K.B	Gro	und	Casing Flang
Short	Long	12	3		1
Group:	Mannville	Bound	ary Type: conf [ci	onformabl	e] 🛛
Formation	McMurray	Fa	ault Type:		•
Member: Im	Lower	Seq#:	Long Name D	isplay De	pth:
		Subsea: 1	013.00 Alignr	nent: rig	ht 💌
Era	Series		Tops		
mesozoic	▼ lower			MD	TVD
Period	Stage		Prognosis:		1
k [cretaceous]	💌 aptian		Sample:	1025	1025
Age: milli	on years Thickness		Log	1025	1025
	MD: 59.2 TVD: 59.2	5 5 Calculate 5 Thickness	Display C Prog	⊂ Sm	pl. 🗭 Log

- 18) Type Mannville into the Group long name field, tab twice, and type McMurray into the Formation Long Name field, tab, type Im 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 is 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.

Save Undo New De	First Prev ?	Next Last K.B.	Gro 3	und	Casing Flange
Group:	iy.	Boundary 1	ype: ang unc	onf [angula	ar unconfori 👻
Formation	evonian	Fault 1	ype:		+
Member:		Seq#	Long Name D	isplay Deptl	r 🗌
		Subsea: -1072.	25 Alignr	nent: right	•
Era	Series		Tops		
paleozoic	▼ late	•		MD	
Period	Stage		Prognosis:		
d [devonian]	💌 (frasnian	•	Sample:	1084.25	1084.25
Age: million ve	ars Thickness		Log	1084.25	1084.25
	MD: 48	Calculate	Display	0.001	01
	TVD: 48	Thickness	Prog	smpl.	v• Log

- 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 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 P	rev ? Next Last	Dictionary
Auto Next Ascent	lingInterval Rock Type /	Heading
1098.08 1084.25	to 1098.08 TOP OF DEVONIA	N
Short Description		To Long Desc
LS m - It gy nods in It - m gy Is mtx. O	∋c lt -m gyls in tbd /lt gyarg ls. TOT/	AL DEPTH: 1134'
Long Description		
TOP OF DEVONIAN		To Short Desc
limestone interbedded with light gray	argillaceous limestone. TOTAL DEPT	'H: 1134'
Transfer Options	223	
 Automatic Description trans 	ter	
Transfer to Annotation Group:	lithtext1	<u> </u>
Transfer Dopth Panga	ETT D HOL	



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 <u>Auto Next</u> button with the <u>Ascending</u> 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 Statt 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 **_______ button** displays a list of descriptions that have been entered to date for the current well.

The **To Long Desci** 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

Transfer Options					
Automatic Description transfer					
Transfer to Annotation Group:	lithtext1	•			
🔽 Transfer Depth Range	🔽 Top Depth Only	✓ Transfer Short Form			

The **Automatic Description transfer** check box v 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 \checkmark when activated will transfer the from and to depth interval to the log. The **Transfer Top Depth Only** check box \checkmark when activated will transfer only the from depth interval to the log. The **Transfer Short Form** check box \checkmark 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 **button** to clear the form and get you ready to enter another Core Description.

🔽 Automatic Description trans	fer	
Transfer to Annotation Group:	lithtext1	•
🔲 Transfer Depth Range	🔽 Top Depth Only	Transfer Short Form

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.



	Core Description	×
Save Undo New Del First P	ev ? Next Last	Dictionary
Auto Next Ascenc	ing Interval Rock Type / Heading	
1098.08 1084.25	to 1098.08 TOP OF DEVONIAN	
Short Description		To Long Desc
LS m - It gy nods in It - m gy Is mtx. Or	cc lt -m gyls intbd∕lt gy arg ls. TOTAL DEPTH:	1134'
I Long Description		
TOP OF DEVONIAN		To Short Desc
limestone interbedded with light gray	argillaceous limestone. TOTAL DEPTH: 1134	
		4
Transfer Options	fer	<u>v</u>
│ │ Transfer Dptions │	fer lithtext1	

- 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.
- Type in the TOP OF DEVONIAN in the Rock Type / Heading field and press the Tab key.
 Type the Short (abbreviated) Description shown below into the Short Description field.
- LS m It gy nods in It m gy Is mtx. Occ It m gy Is intbd / It gy arg Is. 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.



	Core Description	
Save Undo New Del First P	rev ? Next Last	Dictionary
Auto Next F Ascenc	ding Interval Rock Type / Heading	
1025 1025	to 1084.25 TOP OF LOWER MCMURRAY	
Short Description		To Long Desc
SS dk.bm - blk.sd, mas. V Rich 0 Sd 10'' & 1083' - 1083' 10''.	l dep. Occly / rr, mm scale m gy cly strgs @ 1032' -	1032' 6'', 1053' to 1054'
.ong Description		Totherbore
TOP OF LOWER MCMURRAY		1 o Short Desc
SANUS I UNE dark brown to black s	anu, massive, vely nich oli sianu ueposit. Occasio	2'10''
SANUS I UNE dank prown to black s scale medium gray clay stringers at 11	ano, massive, very filter on sand deposit. Occasio 032' to 1032' 6'', 1053' to 1054' 10'' & 1083' to 108	3 10 .
SAND'S I UNE dank prown to black s. scale medium gray clay stringers at 11 Transfer Options	ano, massive. Yely filter on sand depusit. Occasio 032' to 1032' 6'', 1053' to 1054' 10'' & 1083' to 108	
SANDS I UNE dark prown to black s scale medium gray clay stringers at 11 Transfer Options I Automatic Description trans	and, massive. Yely Filth on sand depusit. Occasio 032' to 1032' 6'', 1053' to 1054' 10'' & 1083' to 108	
SAND'S I UNE dark brown to black s scale medium gray clay stringers at 11 - Transfer Options I Automatic Description trans Transfer to Annotation Group:	and, massive. Yely Filtr Oil 3 and depusit. Occasio 032' to 1032' 6'', 1053' to 1054' 10'' & 1083' to 108 fer ithtext1	•

- Type 1025 in the From field and press the Tab key twice to advance to the Rock Type / Heading field.
 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. Occly / 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	TO		
DEPTH	DEPTH	ROCK TYPE / HEADING	SHORT DESCRIPTION
			LS m - It gy nods in It - m gy Is mtx.
1094 25	1008.08		Occ It - m gy Is intbd / It gy arg Is.
1004.25	1090.00	TOP OF DEVONIAN	SS dk brn - blk sd. mas. V Rich O Sd dep. Occly / rr. mm
			scale m gy cly strgs @ 1032' - 1032' 6", 1053' to 1054' 10" &
1025	1084.25	TOP OF LOWER MCMURRAY	1083' - 1083' 10".
1017.75	1025	INTBD MDST AND SS	Mdst pred, It - m gy cly, / rare, mm scale, It brn sd lams thru.
		22	Dk brn - blk sd, mas. Rich o sd. Mnr Sh lam @ 998' 8"- 1001' 6",
999.33	1017.75	SS	1016' 4"- 1016' 8".
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, It 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 It brn, fy lamd / Mdst m gy.
848.17	851.75	MDST	m gy mdst intbd / It brn sd & glau.
13. Click of	on the Save	button and then select Exit fr	rom 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

R	ock Type Build	der		×
Save Del	Rock Type	Intervals	Interbeds	Accessory
1024.5 to 1084	·····	ss [sandstone]		•
Confirm Delete Sample Quality:] No Data Desci	iption:	•
☑ Snap to Lithology Base Contact:	1			•
Edit Favorites Toolbox		Clea	ar Fields	Exit

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 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 V Confirm Delete is unchecked the Lithology Interval will be deleted without any system message.

1627.50 to 1636.00? No

Confirmation

Do you really want to DELETE

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 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.

1644	to 1653.5	ss cg [s	and cg]	The from and to	fields are entered
manu	ally through	the key board o	or can be activated	l through a mouse drag.	The rock type drop box

shown on the right.

will have all the rock types that are in the system.



The No Data Description selection allows the user to define a

Lithology interval on the log with one of the no data descriptions as





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

Sample Quality:

Base Contact:

No Data Description:

Poo

Rubble

Questionable

Lost Core

No Sample

Preserved

Glossifungites

Over Burden
Toolb...

Favorite List



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.

Interpreted Lithology	81	😡 🔤 ISI 🔛 🐌	MD	•	1:48	•	1080	-	• 1"	•
-----------------------	----	-------------	----	---	------	---	------	---	------	---

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

Image: Top Imag	vol 100 IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIII	Save Del		Rock Type	Intervals	Interbeds	Accessory
✓ Snap to Lithology Base Contact:	✓ Snap to Lithology Base Contact:	Confirm Delete	to Sample Quality:	•	No Data Descri	iption:	-
		Snap to Lithology	Base Contact:				-

- 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 popup 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 <u>not</u> 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.



<u>Note</u>: 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".

F	Rock Type Buil	der		×
Save Del	Rock Type	Intervals	Interbeds	Accessory
1084.25 to 1098.08		ls ms (limestone (mu	d supported)]	-
Confirm Delete Sample Quality	. 📃 🔳] No Data Descri	iption:	
Snap to Lithology Base Contact	: [

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

084' 3.00'

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- 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.
- 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".

Savel Dell		Rock Type	Intervals	Interbeds	Accessor
1025	to 1084.25	••••••••••••••••••••••••••••••••••••••	ss [sandstone]		
Confirm Delete	Sample Quality:	•	No Data Descr	iption:	
Snap to Lithology	Base Contact:	Erosional			
Snap to Lithology	Base Contact:	Erosional			

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 1084' 3.00". **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

- 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'.



1017 9.00



Save Del	Roc	k Type	Intervals	Interbeds	Accessory
1017.75	to 1025	_`` m	dst (mudstone)		_
Confirm Delete	Sample Quality:	•	No Data Descri	iption:	-
Snap to Lithology	Base Contact:				

. Release the

- 5. Or Click and drag up or down within a specific track to define the lithology interval from 1025 mouse button and the interval will be drawn with Mudstone accordingly. 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 6.
- 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.

		- Main Lithology
Desta		mdst [mudstone]
NOCKS		Grain Size: u cly I [upper clay lower] 💌 to u cly I [upper clay lower]
Base Contact	 ••• 	Coarsening Upwards 🦵 Finning Upwards 🥅
Save		Carbonate Texture:
		Coarsening Upwards 🦵 Finning Upwards 🗖
Delete		Completion (1) and (1)
Acc Builder		Secondary Lithology - (Interbed)
factorie adultions		ss [sandstone]
interbedding	-	Grain Size: [f1 snd [fine lower] via to [f1 snd [fine lower]
Edit Options		Carbonate Texture: to
Add / Edit / Open Link		Top Interbed % : 30 Base Interbed % : 30
Exit		Bedding Thickness

- 1. Select u cly I (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 I 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
- The user can now go back to the Rock type builder by clicking on the Rock Type button. 7.

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"



R	ock Type Build	ler		×
Save Del	Rock Type	Intervals	Interbeds	Accessory
999.33 to 1017.75	· · · · · · · · ·	ss [sandstone]		*
Confirm Delete Sample Quality:		No Data Desci	iption:	•
Snap to Lithology Base Contact:				•
Edit Favorites Toolbox		Clea	ar Fields	Exit

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".
- 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.

R	ock Type Build	der		×
Save Del	Rock Type	Intervals	Interbeds	Accessory
996.92 to 999.33	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	mdst [mudstone]		-
Confirm Delete Sample Quality:		No Data Descr	iption: IB	T
Snap to Lithology Base Contact:				•
· · · ·				
Edit Favorites Toolbox		Clea	r Fields	Exit

- 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.

	interbedding		
Main Lillestern	Acce	Rock Type	
Main Lithology	a		
mdst [mud	stonej	[<u>1977</u>
Grain Size: u cly I	[upper clay lower] 🗾 to	u cly I [upper clay lower]	•
Coarse	ning Upwards 🥅 Finning	Upwards 🗖	
Carbonate Texture:	.▼ to	n [
Coarse	ning Upwards 🔲 Finning	Upwards T	
Secondary Lithology - Inter	bed]		
ss [sandst	one]		•
Grain Size: fl snd	[fine lower] 💽 to	f I snd [fine lower]	-
Carbonate Texture:	▼ to	. [
Top Interbed %: 30	Base Interbed	% : 30	
Bedding Thickness			
Millimeter (MM)	▼ Inclined Beds		
Save DEL			Exit
I			

- 7. Select u cly I (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 I 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.

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- 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".

948.58 to 996.92 ************************************	Save Del	Rock Type	Intervals	Interbeds	Accesso
Confirm Delete Sample Quality: No Data Description: Snap to Lithology Base Contact:	948.58 to 996.92	* . *.*.*.	ss [sandstone]		
Snap to Lithology Base Contact:	🔽 Confirm Delete Sample Quality] No Data Descri	ption:	112
	Snap to Lithology Base Contact	:			1
	1. Ship to Enhology Buse contac				

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
Limestone	1098.08 or 1098' 1"	1084.25 or 1084' 3"
Sandstone	1084.25 or 1084' 3"	1025
Interbedded Mudstone and Sandstone	1025	1017.75 or 1017' 9"
Sandstone	1017.75 or 1017' 9"	999.33 or 999' 4"
Interbedded Mudstone and Sandstone	999.33 or 999' 4"	996.92 or 996' 11"
Sandstone	996.92 or 996' 11"	948.58 or 948' 7"
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.

Add Lost Core to Interpreted Lithology	
This Action can only be undone immediately after it is executed. Do you wish to add Lost Core intervals to the Interpreted Lithology Layer?	Do you want to ADD an interbedded interval?
Ves No	Yes No

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

- Click on the <u>Yes</u> button. This will active the Add Interbedded Interval Message window repeatedly for all the Lost Core Intervals to be added.
- 5. Click on the 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.
- Release the mouse button, and the interval will be drawn accordingly. A message box will appear.



Lost Core Lost Core Missing No Sample Over Burden ¥

- 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 lithology and
 - Builder. This will activate the Interbedding window also shown below.

Interbedding	×
Accessory Rock Type	
Main Lithology	
Sea	-
Grain Size: vc snd [very coarse sand] 🔻 to c pbl [coarse pebbles]	
Coarsening Upwards 🔽 Finning Upwards 🗔	
	-
Carbonate Fexture:) to	
Secondary Lithology -[Interbed]	
Ss[Sandstone]	•
Grain Size: vf snd [very fine sand] 💌 to f snd [fine sand]	•
	-
Top Interbed % : 30 Base Interbed % : 50	
Bedding Thickness	
Uecimeter (DM)	
Save DEL DEL	Ēxit
ck on the DEL button	





4. 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.

5. 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 reenter 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.

- 1. **Double click** anywhere within the **Interpreted Lithology** track to activate the **Rock Type Builder** window previously shown as well as your Favorites List Toolbox.
- 2. 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.
- 3. If done correctly the selected rock type will be automatically displayed in the **Rock Type** field within the **Rock Type Builder** window.

4. 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.

- 5. Release the mouse button, and you will be prompted with a message asking, "*Do you want to add an interbedded interval?*"
- 6. **Click** on the **ves button** and the thinner bed will be drawn accordingly.
- 7. 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.
- 8. Press the Esc key on the keyboard to exit from the Rock Type Builder window.

Resizing an Existing Rock Type or Bed

- 1. Double click on the Interpreted Lithology track to activate the Rock Type Builder window.
- 2. 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 ↓, (remember if two beds 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 Lithology track to either shrink or enlarge the selected interval.

<u>Note</u>: You are not allowed to overlap an existing bed (lithology) <u>entirely</u> 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 ?"

<u>Note</u>: 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.

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

Deleting a Single Rock Type or Bed

- 1. **Double click** on the **Interpreted Lithology** track to activate the **Rock Type Builder** window.
- 2. **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.

Rocks	
Base Contact	
Save	
Delete	
Acc Builder	
Interbedding	
Edit Options	,
Add / Edit / Open Link	
Exit	



<u>Note</u>: 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.

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

Deleting Multiple Rock Types or Beds

- 1. Double click on the Interpreted Lithology track to activate the Rock Type Builder window.
- 2. 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.

	Delete Intervais	
Do you wish to delete a	all Intervals between 942.25	and 959.83?
	Yes	No
	1.2	

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

<u>Note</u>: 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.

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

	Grain Size Bu	ilder	
Save Del Size / Sequence:	Grain		•
Entire Interval: 1025.00 to 1084.25	vfl snd	➡ to vfl snd	•
Sub-Interval: Size / Sequence:	Grain	•	•
Snap to closest lithology	vf I snd	✓ to vfl snd	•
Dbl Click Interval Entry	scale: Amstrat		
✓ Soft Edges			

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

<u>Note</u>: **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'** [vf I snd] on the (vf I 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 I snd] on the (f I snd) in the Grain Size track.
- 5.) Double click the mouse pointer between the depths 929' 8" to 944' 1" 932' [mushd] on the (m I shd) 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' 9.00" [u c slt]
 863' 3.00" [f u snd]
 863' 3.00" [f u snd]
 9.00 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.

ľ	Oil Staining	-	81	😡 🕅 ISI 🕅 😡	MD	•	1:48	•	925	-	•	0.5"	-
22			_			-							

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.
 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'.







¥.

Water

Gas

None

Stains

Delete

Display Text

Exit

Display Fill

Edit Options

Add / Edit / Open Link

Mix

- 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:
- 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.
- Click and drag the mouse on the track / layer from 861' 7.5" to 866' 861' 7.50"

10". 866'10.00". The dark brown oil staining and Gas Mixture will be drawn accordingly.

<u>Tip</u>: 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

 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.

	E	Hack (BL	-K];				-
Top Depth:	929.6	7	Base D	epth: 944	.08		
Mix		_					
Display Text	V		Disp	lay Fill 🔽			
Snap to near	est 🔽	DH CI	lick Interva	Entry 🔽		Save	



- 2. Right click anywhere within the interval you wish to delete to activate the pop-up menu.
- 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 Tor Snap To: When checked allows the user to snap to the previous data entry if you click and drag within ¼" the mouse pointer or screen scale accuracy of the previous data entry.

Adding a Physical Structure over an Entire Facies Interval

<u>Note</u>: 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 **Sedimentary Structures Builder**.

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

		Toolb
Sedimentary Str	uctures	Favorite List
Bedding / Cross bedding		
		*
aminations / Cross Laminations		
🦟 cppxlam [current ripple cross lam	ination] 🔹	360
,)ther		
	•	85
Abundance: Trace	•	
Dbl Click Interval Entry	Edit Favorites	2000 C
🔽 Snap To Nearest	Toolbox	20
	Save	w
Top: 1017.33 Base: 1024.50	Exit	1////

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

	Sedimentary Structures	+
	Abundance	
	Delete	
	Edit Options	•
	Add / Edit / Open Link	
	Exit	
-		

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.



Sedimentary Structures	•	Climbing ripple cross lamination				
Abundance	+	 Current ripple cross lamination 				
Delete		/// High angle parallel laminations				
Edit Options		High angle cross laminations				
Add / Edit / Open Link Exit		Low angle parallel laminations Parallel laminations Trough cross laminations Way laminations Way infinitions				
		😂 Hummock cross bedding				
		≠ Massive/homogenous bedding				
	3	रास Normal graded bedding				
	10	Planar/tabular cross bedding				
	3	🔆 Trough cross bedding				
		∇∇ Burrows				
	1	Inclined heterolithic strata				
		VV Load cast	Sedimentary Structure	s >]		
		//// Mud drapes	Abundance	*	None	
		···· Rip up clasts ↓ Syneresis crack	Delete		Trace	
Click within an exist	ing Fa	cies interval in the Sedimenta	ry Edit Options		Occasional	
re layer with the <mark>☞ ^{Db}</mark> nterval will be filled in	Click Inte with c	erval Entry activated and the entir urrent ripple cross laminations	e Add / Edit / Open Link b. Exit		Abundant	

- 4. Double Structu 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. Repeat Steps 2-6 to enter more Sedimentary Structures over entire Facies Intervals. 7.

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.

Sedimentary Structures	+
Abundance	
Delete	
Edit Options	•
Add / Edit / Open Link	
Exit	

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.

	Sedimentary Structures +	Climbing ripple cross lamination
	Abundance +	 Current ripple cross lamination
	Delete	/// High angle parallel laminations
	Edit Options	Reference to the second
	Add / Edit / Once Link	Sector Low angle parallel laminations
	Fvit	Parrallel laminations
		See Trough cross laminations
		🗱 Wavy laminations
		Wave ripple cross laminations
		😂 Hummock cross bedding
		→ Massive/homogenous bedding
		Normal graded bedding
		Elanar/tabular cross bedding
		💥 Trough cross bedding
		⊽⊽ Burrows
		#He Inclined heterolithic strata
		✓ Load cast
		//// Mud drapes
		Anna Rip up clasts
		"∛ Syneresis crack
 Click and Structure I 	drag within an existing	g Facies interval in the Sedimentar
lamination	S.	

Sedimentary Structures	•		
Abundance		None	
Delete		Trace	
Edit Options		Occasional	
Add / Edit / Open Link Exit		Common Abundant	

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

- 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 save 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.
- 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 ¹/₂.
- 4. . Release the mouse button and the interval will be resized.

Keypad Method

 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 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

- 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.

Sedimentary Structures	X
Bedding / Cross bedding	
	•
Laminations / Cross Laminations	
cppxlam [current ripple cross lamination]	-
Other	
	•
Abundance: Occasional	•
Dbl Click Interval Entry	Edit Favorites
🔽 Snap To Nearest	Toolbox
	Save
Top: Base:	Exit

Sedimentary Structures	,
Abundance	,
Delete	
Edit Options	,
Add / Edit / Open Link	
Exit	

- 2. **Right click** anywhere <u>within</u> 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.

Sedimentary Structures	
Bedding / Cross bedding	•
Laminations / Cross Laminations	
cppxlam [current ripple cross lamination]	•
Other	
	•
Abundance: Occasional	•
Dbl Click Interval Entry	Edit Favorites
🔽 Snap To Nearest	Toolbox
	Save
Top: Base:	Exit
Snap To Nearest Top: Base:	Toolbox Save 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.

1	Confirm Multi	ple Delete 🛛
	Delete these Sy	mbols?
	Yes	No

- 4. Click on <u>Yes</u> 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 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.

Rock Accessories -	81	🔞 🛤 🖪 📾 😡	MD	-	1:48	-	1078	•	-	1"	•
	-	and the second se	and the second s		and the second second		the second of the				

Adding a Rock Accessory over an Entire Facies Interval

<u>Note</u>: 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 **Toolbox** button in the builder.

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



Ro	ck Accessory Builder	List		
Thinbed: Accessories: Grains: Fossils: Textures: Matrix: Cement: Abundance: Top: 0.00 Edit Favorites T		Rock Accessories Abundance Delete Edit Options Add / Edit / Open Link Exit		Argillaceous Argillaceous Calcareous Calcareous Carbonaceous Chert dark Clay Coal
Right click anyw activate the pop-	Vinere on the Rock Accessories track / laye up menu. Rock Accessories + Abundance + Delete Edit Options + Add / Edit / Open Link Exit	r to	∞ 9 10 10 10 10 10 10 10 10 10 10 10 10 10	Crptocrystalline Earthy Fish Remains Fossil Glauconitic Intraclast Lithic grain Limestone grain supported Sideritic
Click on the Roc out menu and the from the pop out down selections list to get close to	ck Accessories favorites list to activate the en select Limestone Mud Supported Class favorites list or click in the builders Thinber to access the list. The user can start typing by your choice. Either way once you have sele	pop ts J drop in the ected one it will be populated	a in the	Siliceous Siltstone Silty Sandstone Stylolitic e builder.
Double Click with	thin an existing Facies interval in the Rock A e entire facies interval will be filled in with Lin	ccessories layer with the nestone Mud support Breccia Bock Accessories	Dbl Click 3.	Interval Entry
activated and the Right click on the	ie existing Limestone Mud support Brecci			
activated and the Right click on the rock accessory	e existing Limestone Mud support Brecci , Click on the Abundance selection to	Abundance	E I	None
activated and the Right click on the rock accessory activate the pop	a existing Limestone Mud support Brecci, Click on the Abundance selection to out menu and then select Abundant from the	e Abundance Delete	•	None Trace
activated and the Right click on the rock accessory activate the pop pop out list. This surround	A construction of the style of color of t	e Abundance Delete Edit Options	•	None Trace Occasional

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.

Rock Accessories	
Abundance	+
Delete	
Edit Options	•
Add / Edit / Open Link	
Exit	

 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.



Rock Accessories	Argillaceous	
Abundance Delete	Argillaceous Calcareous	
Edit Options Add / Edit / Open Link	Calcareous Carbonaceous Chert dark	Thinbed: Accessories: Grains:
Exit	E Clay Coal Crptocrystalline E Earthy Fish Remains	Fossils: Textures: Matrix: Cement: Abundance:
	Glauconitic Glauconitic Siltstone Silty Sandstone A₂ Stiduitic	Top: T

Thinbed:						
Accessories:	🔁 glauic	[glauconitic]			
Grains:						÷
Fossils:						÷
Textures:						
Matrix:	<u> </u>					
Cement:						
Abundance:	Occasiona	əl				
Тор	861.67	Base: 8	67.00	IV D IV S	bl Click In nap To N	iterval Enti earest

None

Trace Occasional

Common

Abundant

.

Abundance

Edit Options

Add / Edit / Open Link

Delete

Exit

- Click and drag within an existing Facies interval in the Rock Accessories layer and the interval you dragged will be filled in with Glauconitic.
 Right click on the existing Glauconitic Rock Accessory, Click on Rock Accessories
- Right click on the existing Glauconitic 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 Glauconitic 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.
- 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 1.
- 4. Release the mouse button and the interval will be resized.

Keypad Method

 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.

Thinbed:							٠
Accessories:							•
Grains:							٠
Fossils:							٠
Textures:							•
Matrix:							•
Cement:							•
Abundance:							•
Top: 0.00	3	Base: 0	00	<u></u>	Dbl Clic Snap T	k Interval E o Nearest	ntr

- 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.

Thinbed:		÷
Accessories:		
Grains:		
Fossils:		
Textures:		
Matrix:		
Cement:		
Abundance:		
T op: 0.00	Base: 0.00	Dbl Click Interval Entr Snap To Nearest

- 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 <u>Yes</u> 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.

Rock Accessories	•
Abundance	,
Delete	
Edit Options	,
Add / Edit / Open Link	
Exit	



Toolb...

Trace Fossils

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.

Ichnofossils	•	81	B	131	161	Ø	MD	-	1:48	1078	-	-	1"	-	
Ichnotossils	•	.99	9 5	1.0	1533	Ø.	MD	•	1:48	 10/8	3	•		• <u>•</u> 1"	T T 1" T

Adding an Ichnofossil over an Entire Facies Interval

<u>Note</u>: 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.

	Trace Fossil	Selection	×
			-
lance			-
lla an	-		-
0.00	Base: 0.00	Dbl Click Interval Eni	try
		IV Shap To Nearest	
avorites	Toolbox	Save Exit	

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

Trace Fossils	
Abundance	
Delete	
Edit Options	•
Add / Edit / Open Link	¢
Exit	

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

Abundance		As	Asterosoma
Delete		С	Cruziana
Edit Options	,	Cg	Camborygma
		CI	Climactichnites
Add / Edit / Open Link		Ср	Cosmoraphe
Exit		G	Gyrolithes
		N	Nereites
		0	Ophiomorpha
		P	Planolites
		s	Skolithos
		Te	Teichichnus
		z	Zoophycos

Arenicolites

Trace Fossils		
Abundance	*	None
Delete		Trace
Edit Options		Occasional
Add / Edit / Open Link Exit		Abundant



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.

Trace Fossils	•
Abundance	•
Delete	
Edit Options	,
Add / Edit / Open Li	nk
Exit	



 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.

i e te [teicnichni	.as]		
, Abundance			-
Occasional			
Top: 274.85	Base: 278.71	Dbl Click	: Interval Entr, Nearest
F dit Esucritos	Base: [2/0./1	Snap To	Nearest

- Trace Fossils
 None

 Abundance
 None

 Delete
 Trace

 Edit Options
 Occasional

 Add / Edit / Open Link
 Common

 Exit
 Abundant
- Click and drag within an existing Facies interval in the Ichnofossils layer and the interval you dragged will be filled in with Teichichnus.
 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
 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 Save button.
 6. Repeat Steps 2-5 to enter more Ichnofossils.

Note: Click and drag the mouse on the track / layer close to an existing lchnofossils (either above or below in the same column) with the V Snap To Nearest activated and there will be no spaces between the lchnofossils. **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 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.
- 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 ¹/₂.
- 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 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

- 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 <u>within</u> 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.

Abundance			
Тор: 0.00	Base: 0.00	Dbi Cli	⊂ ck Interval Entry Γo Nearest
Edit Eavorites	Toolbox	Save	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.



- 4. Click on <u>Yes</u> 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

POWER SUITE 2018

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		Nier
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	XW/2
Cored Interval: 848.17 (I) to 1098.08 (I)	Logged by: R.E. (Bob) Sephton	Slabbed: Yes	STRUCT
	Date: Mar 17, 2016		
Depth Correction: Minor			
Remark: This is a place to fill in anything relavent with the (Printed Core Log Scale 1:20 Core Analyses to be done by Murphy's Core Lab i	Core. 1 Houston		
	Core Log Header		
	<u>Core Log</u>		Nisz
Well Name: Tutorial Core Log	Location: 2300 1201 3000 00	Ground / Collar: 3 (I)	
UWI: 23001201300000	KB: 12 (I)	UTM East: 766574	C ALLON
Hole ID: First Well	Core Quality: Good	UTM North: 3912119	
Csg Depth (MD): 256 (I)	Logged by: R.E. (Bob) Sephton	Slabbed: Yes	STEPS
Core Point (MD): 848.17 (I)	Date: Mar 17, 2018	Lab.: Murphy's Core Lab	
Total Depth (MD): 1098.08 (I)	Lic.#: 342581	% 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 relavent with the 0 Printed Core Log Scale 1:20 Core Analyses to be done by Murphy's Core Lab i	Core. 1 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.

Edit		7		
Undo Move short Symbol	Undo Move short Symbol			
Redo Move short Symbol	Redo Move short Symbol			
Log	Log			
Well	Well			
Print Sections	Print Sections			
Log Configuration	Log Configuration			
Track Configuration	Track Configuration			
Layer Configuration	Layer Configuration			
Metafile Options	Metafile Options			
Delete Generic Groups	Delete Generic Groups			
Generic Group Sorting	Generic Group Sorting			
Core / Sample Header 🔸 Standard Format	Core / Sample Header 🔶	Standard Format		
Log Layer Annotations Alternate Format	Log Layer Annotations	Alternate Format		
Core / Sample Header	×	1 11 MARCE 111-0		
ave Del	Core / Sample H	leader (Alternate) ext Last		
iave Del iate Logged by Top Depth Base Depth far 17, 2016 R.W. (Bob) Seption 848,17 1098,08	Core / Sample H Save Undo New Del First Prev ? N Date Logged by Mar 17, 2016 R.W. (Bob) Seption Deth Corrected Benaty	ext Last Core Point Total Depth		
iave Del Interval Interval Interval Top Depth Base Depth Base	Core / Sample H	leader (Alternate) ext Last Core Point Total Depth 848.17 1098.08 abbed Quality Remark Csg. Depth Good 256		
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- 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 **I**, 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
------------------	-----------------------	------------------------

						Well							
Save	Unde	New	Del	First P	rev ? Ne	ext Last	Stor	age Units:	Imper	ial 💌	Origina	al Unit	:s:
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Well N	ame	Tutorial (Core Log			Btm. Loc	ation:	2300 1201 :	3000 (00			
C	perator:	Anybody	Oil & Gas	Co,		- Licer	nsee: [Anybody Oil	l&Ga	s Co.	Permit	# 342	2561
Drilling Co	ntractor:	Core em	Up			1	Pool: [Big			Field: B	igger	8
	County:	Ameriloo	X			B	ig #: [32		1			
Provinc	e/State:	Texas				Elevi	ations -	Ground			6		
	Country:	USA				- He	rerepe	e 12		۱.	Ground	d / Lo o Flai	ollar: 1º
Surface C	oordinate	es ————————————————————————————————————					1	Re Later		,	COM	<u>y na</u>	<u>196. -</u>
atitude	35.326	594				N/S:	400 ft	. North of th	ie Sou	ith boundar	у		
ongitude	102.06	7410				E/W:	550 ft	East of the	West	boundary	0.00		
ntermedia	ate Casini	a Point Co	ordinates	-									
atitude		g i olikoo				N/S	ŕ –						
onaitude	-					- EM:	-						
ongkade	<u>.</u>						<u></u>						
Bottom ho	le Coordi	nates				- 110							
atitude	35.326	751				IN/5;	401 f	t. North of th	ne Soi	uth bounda	ſŸ		
ongitude	J					E/W:	15550	It. East of t	he We	est boundai	y.		
UTM Surf	a ce Cool	dinates o				~	7665	74					
Northing:	391211	9				Casting	1,000						
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Wa	er Depth	Reference	:e:		Water Depth	r 1				Sanu Filoc	IUCEI -	٧.	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 **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.

-			
Connect		- Options	
Disconnect		Print Title Page Tupe Core title Logo: TRIVISON.BMP	
Access Registration		Location Map	
New	Ctrl+N	Survey Views	
Open	Ctrl+ O	Title Page Remarks	
open	Curto	User Defined Cross Section	
Close		Multi Views	
Import / Export		I Print Legend I Use Dynamic Legend	Log Width 17.90 "
ASCII Export		Log Selection	an maria
Backup		Print Scale: 20 🔽 🔽 Log Header and Footer	
Severe.	2422 5	User defined Interval	
Print Log	Ctrl+P	Well Section (0.00 to 0.00)	
Print to TIFF		Lithology Section (848.17 to 1098.08)	
Print Morning Report			
Print Well End Report		User-defined Interval: 848 to 1099	
Print Reports to Word®		Cores	
Print Setun		Print Scale: 20 💌 🔽 Core Header and Footer	
, inte secopia			
Exit			
Survey Viewer			ΟΚ

- Title Page/Legend/Tops/Surveys Page Orientation: 2.
 - 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.
- Print Title Page Activate this check box 🗹 to printout a Core Log Title Page. 3.
- The Type (Title Page) drop box displayed on the right allow you to pick the appropriate title 4. page format to print. Select an abbreviated Core title that handles our core log.

Туре:	core title	-
	standard	_
	core title	
	alt. core title bore hole title	

AER UWI Format If you are in Alberta the AER format should be selected. 5.

🔽 Logo	6.	Activate this check box <i>I</i> , if you wish to printout a logo, and then select a logo from the Logo
TRIVISON.BMP		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 2018/logo directory for the application to find it.

Log Selection

Print Scale: 20

Today Section (0.00 to 0.00)

Well Section (0.00 to 0.00)

Print Legend Vise Dynamic Legend Activate these check boxes V. The Dynamic legend reflect only the symbols 7. printed on the log.

In the Log portion of the Print Log window

- Print Scale select 20 or type in the Scale for 8. the log to be printed out at, in the Scale drop box field.
- ✓ Log Header and Footer Activate this check box ✓ 9. 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.
- Lithology Section (848.17 to 1098.08) to 1099 User-defined Interval: 848 Print button.

☑ Log Header and Footer

•

- 11. When you are ready to print your log, **click** on the
- OK button. 12. This will activate a message box indicating the size of your printout. **Click** on the



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.

<u>Note</u>: 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.

Edit Ontions	File Name:	 - T
Eur options	D-the	
Add / Edit / Open Link	Path:	
Fxit	nellidiks.	

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.

Select File to Link	to	×	Links
Look in: 🔒 SYSTEM			Save Undo New Del First Prev ? Next Last Depth
Name	Date	Туре ^	
100141901223w500	1/21/2015	File fold	File Names
NTDriver	1/21/2015	File fold	File Name. Imperial Facies Core Log. TIF
🔁 Imperial Facies Core Log.TIF	3/6/2015 1	Adobe A	Path: CADOMCDOMUTE 2010M interal Ellery
🔁 Imperial Tutorial Horizontal Log with spac	2/1/2015 2	Adobe A	
🔁 Imperial Tutorial Horizontal Log.TIF	2/1/2015 2	Adobe A 🗸	Remarks:
< -		>	
File name: Imperial Facies Core Log.TIF		Open	
Files of type: All files (*.*)		Cancel	Open File in Windows® Open Folder
200 M 160		12	

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.

Shortcut Options			×
Record saved succe	essfully. Choose one of the	following sh	ortcuts.
Start New Record	Move to Next Record	Exit	Cancel
		0	

4.) **Click** on the **Exit button**. This will insert the paper clip symbol ^{III} 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.