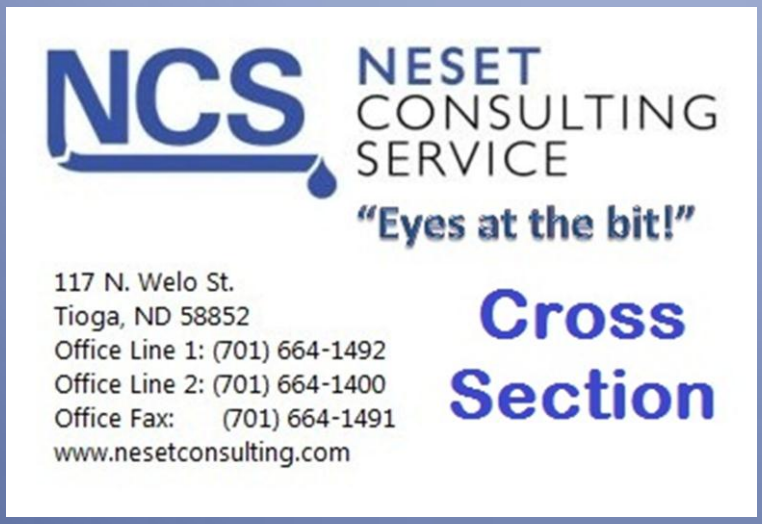
Volume

1



Cross Section User's Guide

Instructions for the NCS Cross Section Program

The NCS Cross Section Program was designed to make your job easier. This guide was designed to help you make the most of the program.

Neset Consulting Service

Cross Section User's Guide

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Chapter 1 - Introduction

The Neset Consulting Service (NCS) Cross Section User's Guide was designed to help you make the most of the NCS Cross Section Program.

About This Guide

This user's guide has been designed to help you easily find assistance on anything to do with the Cross Section program, be it help with the program itself, or the sections within and what they are for. You do not need to read the guide all the way through, it can simply be referenced when needed. I do however; recommend you read *Chapter 2 – Starting a New Well* if this is your first time using the program. This chapter will help you make sure that you are ready to start a new Well and explain the steps you need to take for it.

The guide has been broken down into chapters, each providing instructions for the different pages and features within the program as well as tips for using the data you collect for them. Each chapter also contains pictures of the icons that will be used with each of the tabs within the program to help you recognize them when using the program.

About the Cross Section Program

The Cross Section program was designed using some of the same worksheets you already use. This was intentional to help make using the program easier. However, these pages have been modified in several ways for several reasons.

The most prevalent reason for the changes is the program was designed to automate as much as possible. This means that you will no longer need to copy and paste the data to several places in order to use it. The program has also been format protected, this means you do not need to do a "Paste Special" when copying data from one place to another, even from outside sources. One small side-effect of this is you have to have the location you wish to paste to selected **before** you copy the other data.

For example: If you are going to paste a new set of data into the Asite section starting at depth 9500. You need to go to the Asite page and select the cell where 9500 will be. Then go to your source file and select the data you're going to paste, making sure 9500 is the upper left corner of the selection. Copy the data (using whatever method you prefer), go back to the Asite page, and **without** clicking anywhere else Paste the data (using whatever method you prefer). The data will show up and for a second it will disappear and show back up again (this may happen too fast to see).

Another important feature of the Cross Section program to keep in mind is that it will automatically save when you close it. It doesn't ask; it just saves; which means that if you make a mistake, you will not be able to close the file without saving in order to remove the mistake, you will have to undo the mistake. If you have already done something else, it will be too late to undo the mistake; you will have to redo that work.

Although the Cross Section program is an Excel Workbook, it has been modified with a custom Tab Menu (called a Ribbon) and Icons. These will all be explained in detail in the appropriate chapters, but with the addition of the custom Ribbon, the normal Excel Ribbon has been removed. There are some standard Excel features that were included in the custom Ribbon but for the most part, it's all new.

The Cross Section program will only work in Office 2007 or Office 2010. If you are using an older version of Office it will not work. If the Company Geologist, or anyone else you send files to, uses an older version of Office, they will not be able to use this program to view your reports. You will need to send them all the reports in PDF format; there is a button that conveniently creates these for you.

There are instructions embedded throughout the entire program so you will not always have to refer to this guide. To use these, you simply place your mouse over any cell with a little red triangle in the upper right hand corner.

The Custom Ribbon

The NCS Cross Section program uses a custom Menu Ribbon in order to provide you access to features of the program. Almost every page of the program has its own Menu Ribbon tab. These will be explained throughout the book with the section covering that part of the program.

Updates and changes are planned for future releases, if there is a feature you would like included in these, please notify the office explaining what the feature is and why you want it.

Chapter 2 – Starting a New Well & Activating an Old Well

This chapter explains the steps needed to start a new Well, as well as suggestions about file locations and naming conventions.

Opening the Cross Section Program

When you first open the Cross Section program, you will most likely see a Security Warning. This warning will be located between the Ribbon and the Formula Bar (see Figure 2-1). The warning tells you that you need to enable Macros in order to use the program. Depending on the version of Office you are using you will see a button that either says “Options” (Office 2007) or “Enable Content” (Office 2010). You will need to click this button and enable the Macros or the program will not work properly.

Once you have enabled the Macros you will see a Splash Screen appear on the screen for approximately five seconds. You will not be able to do anything until this Splash Screen goes away. If you did not see the Splash Screen you need to enable the Macros.

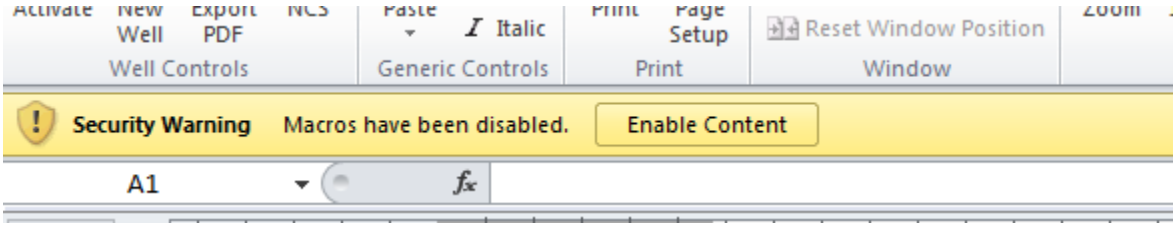

Figure 2-1 - Security Warning: *This warning appears between the Ribbon and the Formula Bar. It will only appear if you need to enable Macros.*

The program opens to the Instructions page; this will be the only page you see at first. These instructions provide you with a basic rundown on the program so you do not always have to refer to this guide. There are also (as mentioned before) instructions embedded throughout the program, simply place your mouse over any cell with a little red triangle in the upper right hand corner and the instructions will pop-up for you. These do not show up when you print the pages, so don’t worry about that.

Starting a New Well

To start a New Well, you need to gather three pieces of information first. You will need to know the name of the Oil Company, Drilling Rig and Well.
For the purposes of this guide we are going to work for the Oil Company “Big Oil” on the Drilling Rig “Fast Rig 33” drilling the Well “Sample 45-67H”.

After you have enabled Macros and gathered the information you are ready to start a new Well. You do this by making sure you have the “Main” tab selected in the Ribbon (this should be the default when you open the program (see Figure 2-2).

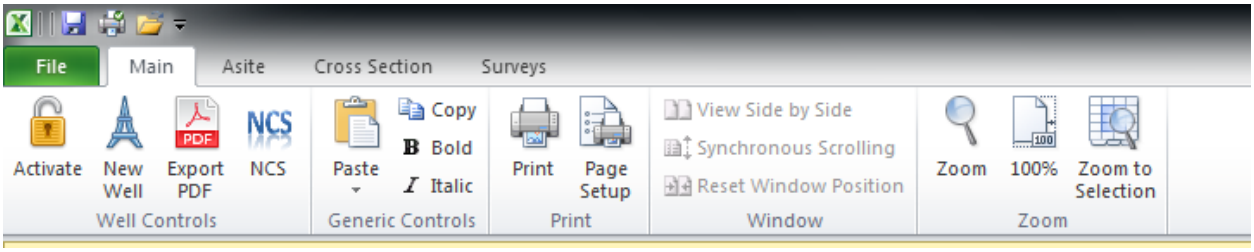

Figure 2-2 - Ribbon - Main Tab: *This should be the default tab when you open the program.*

 Click on the “New Well” icon to start the well. There are a few things that will happen when you do this. The program will ask you for the information you gathered earlier; create a series of folders on your hard drive based on your answers, save a copy of the file in these folders; rename the copy to the Well Name and place a shortcut on your desktop to make it easier for you to find the file. It will also fill in the Company, Well Name, and Rig Name fields in the Survey sheet. You will receive a series of pop-up boxes (see Figures 2-3 thru 2-6).

The first one asks you for the name of the Oil Company.

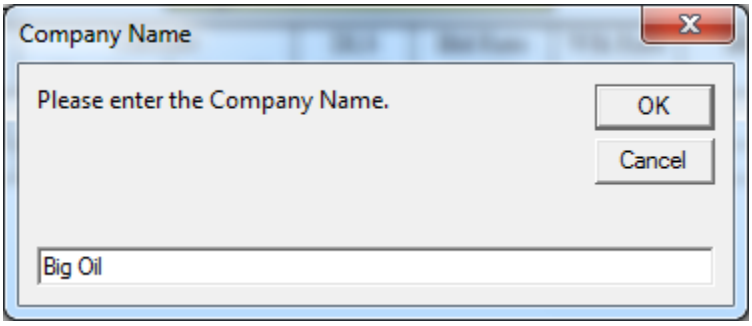

Figure 2-3 - Pop-Up for Company Name: *Enter the name of the Oil Company in this box.*

The second asks you for the name of the Well.

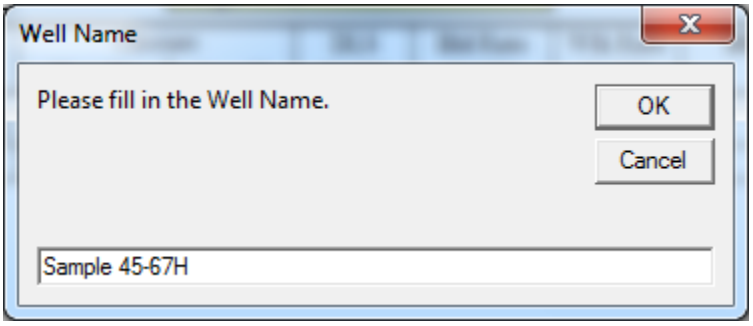

Figure 2-4 - Pop-Up for Well Name: *Enter the name of the Well in this box.*

The third asks you for the name of the Drilling Rig.

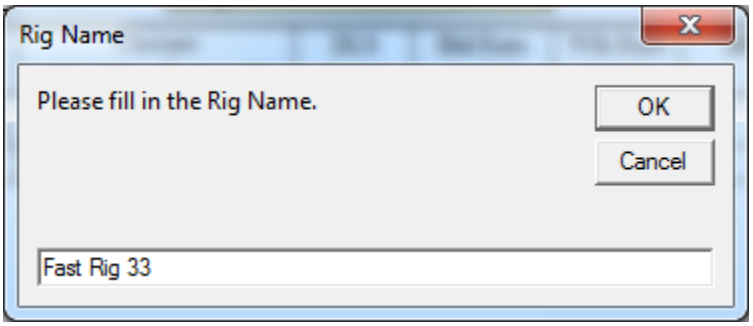

Figure 2-5 - Pop-Up for Rig Name: *Enter the name of the Drilling Rig in this box.*

The fourth and final tells you the file was created successfully, where to find it and informs you there is a shortcut on your desktop.

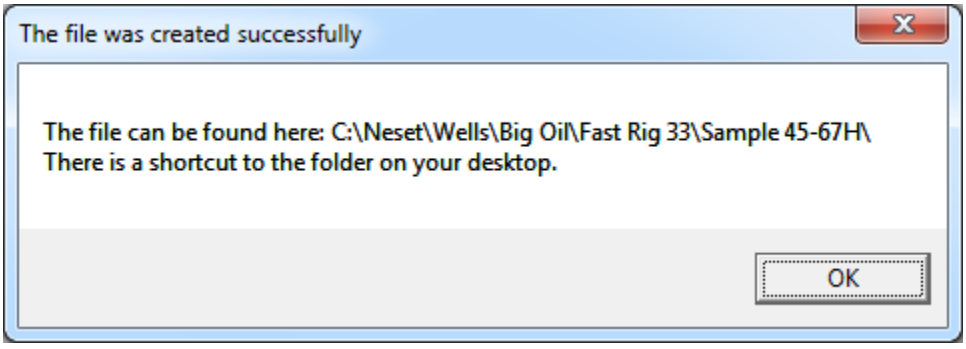

Figure 2-6 - Pop-Up - Success: *This lets you know the file was successfully created and tells you where it is.*

Note the file path for the new file is “C:\Neset\Wells”; this will not change. It does not matter if this folder path already exists or not, the program will create it if it doesn’t. The rest of the folder names in the file path depend on what you entered in the pop-up boxes. If this is the first time you have worked for a company, then there is now a new folder with that company’s name. If you have worked for this company before, but on a different rig, then under that same company name there is a new folder with the new rig name. If this is your normal rig and company, than there is now a new folder within that company and rig folder series with the name of the new well.

The file path is there for a few reasons: first, it helps keep things organized and easy to find. This is for the benefit or you, the office and, if needed, your relief. The shortcut placed on your desktop directs you to the Well folder, not the Cross Section file. The Cross Section file is located in this folder. When you open the folder, you will notice the new Cross Section file is named after the Well you are on, so for our example, the file is “Sample 45-67H – Cross Section”.

The original Cross Section file you started with is still located wherever you had it and is blank; all changes have been made to the copy only. This ensures your new file is named correctly and placed in the correct location, as well as ensures you have a blank copy for your next Well.

Activating an Old Well

If you are simply reopening an Old Well, you will need to activate the program in order to use it. Just like when you’re starting a new Well, the program opens with only the Instructions page visible, in the Main tab of the Ribbon there is an icon labeled “Activate”. You may need to Enable Macros, if so, follow the instructions on how to do this earlier in this chapter. If you saw the Splash Screen then Macros are already enabled.

 Click on the “Activate” icon. This will reveal the rest of the pages and return the focus back to the Instructions page. You can now continue to use the program.

Chapter 3 – Surveys

The most important part of the Cross Section program is the Surveys. If these aren't accurate, nothing else will be either.

Overview

Filling in the header section properly is essential to having accurate survey data. Too often this part is ignored; the result of which is incorrect survey data. The Measurements While Drilling Specialist (MWD) is responsible for collecting the data which determines the survey. The Directional Driller (DD) is responsible for ensuring the surveys are accurate. You are responsible for making sure our survey sheet matches what the DD has. The Federal tolerance for error between what we have and what the DD has is 0.01. Due to different programs rounding numbers off in different ways this amount of error is sometimes unavoidable; however, most of the time we will have exactly what the DD has.

The Surveys page of the Cross Section program was designed to accommodate for most of survey forms in use by the different companies. Provided you fill in the header section correctly, you should be able to match any DD survey form.

Header Fields

The header section consists of 16 fields that should be filled in. Not every field will be used every time, but if you fill in the right ones with the correct information you can match what the DD has.

Non-Essential Fields

Company: This is where the name of the oil company goes and should already be filled in.

Field: Put the name of the field you're drilling in here (i.e. Wildcat, Sanish, etc.)

County: The County the Well Site is in.

State: Do I really need to explain this one?

Well Name: The name of the Well; this should also already be filled in.

Rig Name: The name of the Drilling Rig, again this should already be filled in.

API#: The API is what the State uses to determine which well is which, kind of like a serial number.

Essential Fields

Magnetic Decl: Magnetic Declination is determined by the magnetic pull of the Earth at this location, on this day. This number changes slightly every day; however once it is set for a Well, it doesn't get changed in the paperwork. The MWD calculates this number based on the String Pick Up Date (SPUD). If this field is *not* being used you **must** fill it in with a zero.

Grid Corr: Grid Correction is determined by the Grid Coordinates of the Well. This is not always used; however, it can be used either in place of, or in conjunction with the Magnetic Declination. If it is *not* being used, you can fill it in with a zero if you want.

Tot Surv Corr: Total Survey Correction is basically The Magnetic Declination plus the Grid Correction. This field is calculated automatically however unless you entered either the Magnetic Declination or a Zero in the Magnetic Decl field it will remain blank.

Prop Azimuth: Proposed Azimuth; this is what Azimuth you expect the Wellbore to head. This number can be obtained either from the DD or the Well Plan; however it should match whatever the DD has on their survey sheet. If theirs is blank, yours should be too.

Calculation Method: This is a Drop Menu, you have three choices:

1. Average Angle: Not often used, but it calculates the TVD based on the average of the Inclinations.
2. Minimum Curvature: Used more than the others, this is the most accurate method of calculating the TVD; it uses a complex formula based on the Depth, Inclination and Azimuth of the survey.
3. Radius of Curvature: Also not often used, it calculates the TVD based more on the Azimuth than the Inclination.

Depth Reference: Another Drop Menu (the program has a lot of these). Use this to choose what the reference is for the depth of the Wellbore. This is not always used, but should match whatever the DD has because it does affect the calculations:

1. DF: Drilling Floor, used when the Drilling Floor is the depth reference.
2. KB: Kelly Bushing, used when the Kelly Bushing is the depth reference.
    a. Top Drive rigs do not have a Kelly Bushing, this number and the DF are the same on these rigs.
3. GL: Ground Level, not often used, but can be.

Target Angle: This is the *proposed* highest angle the Wellbore is expected to reach; most of the time this is filled in with 90°.

Target TVD: This is the *Proposed* TVD of the Wellbore; some DD's fill this in with the TVD of the curve, not the Wellbore. Either way, what you have should match what they have.

Tie-In Fields

The Tie-In fields are locked to prevent accidental changing. However, there is a button on the Surveys Tab of the Ribbon (see Figure 3-1) that you can use to enter data into these fields. Make sure you have all the required information available before pressing the button. You will need the Depth, Inclination, Azimuth, True Vertical Depth, Vertical Section, Northings/Southings, and Eastings/Westings. These can all be obtained from the DD Survey sheet.

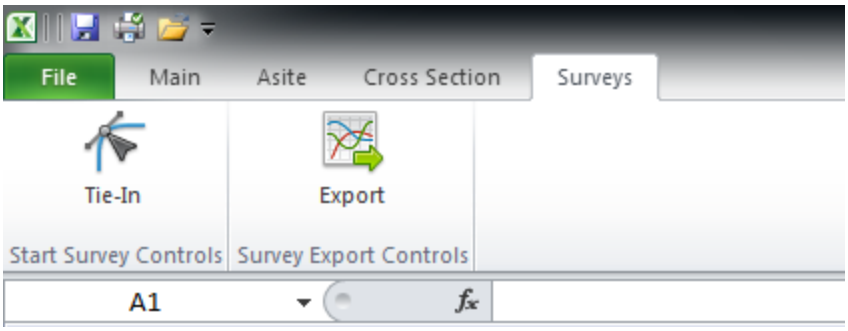

Figure 3-1 – Ribbon – Survey Tab: *Used to control features semi-exclusive to the Surveys sheet.*


Use the "Tie-In" button to enter the data in the fields. When you press this button you will receive a series of pop-up boxes (see Figures 3-2 thru 3-8).
Note: Several of these are often 0; however, you must enter that in the box.

The first pop-up box asks for the Survey Depth.

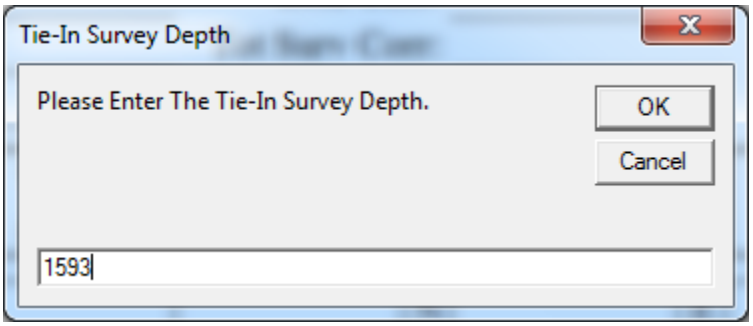

Figure 3-2 - Tie-In Survey Depth

The second pop-up asks for the Survey Inclination.
Note: You need to enter something, even if it's 0.

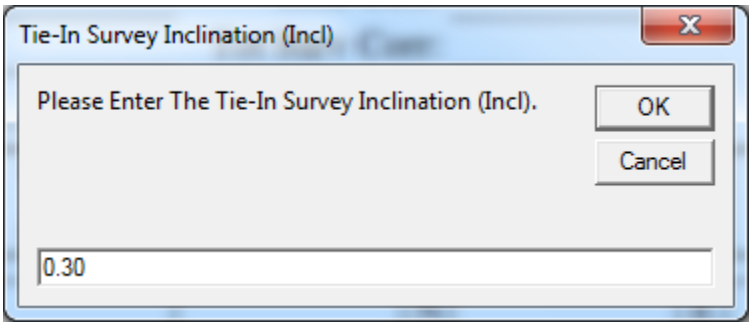

Figure 3-3 - Tie-In Survey Inclination

The third pop-up asks for the Survey Azimuth.

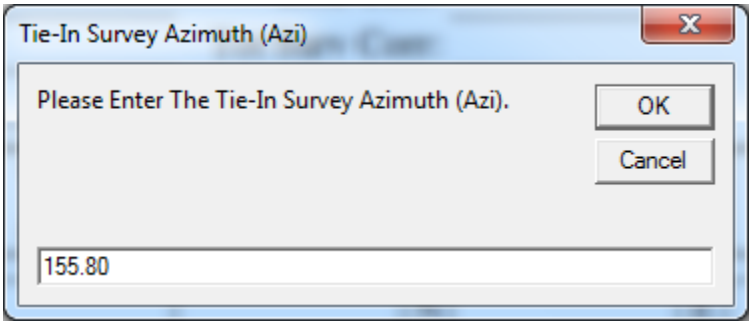

Figure 3-4 - Tie-In Survey Azimuth

The fourth pop-up asks for the Survey True Vertical Depth (TVD).

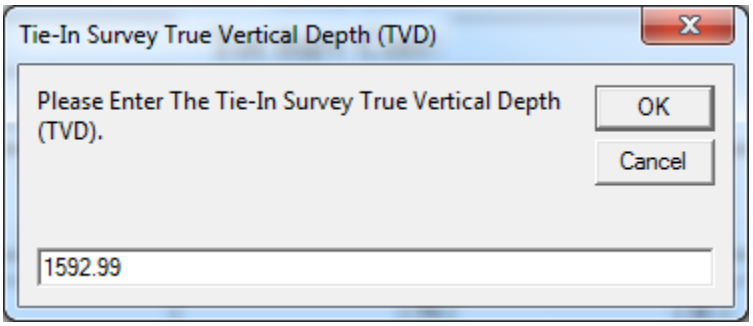

Figure 3-5 - Tie-In Survey TVD

The fifth pop-up asks for the Survey Vertical Section (VS).

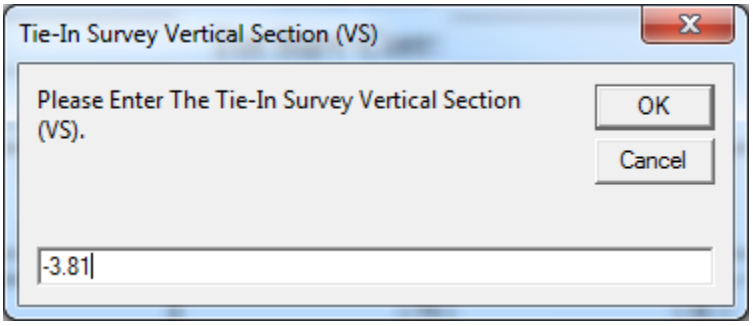

Figure 3-6 - Tie-In Survey VS

The sixth pop-up asks for the Survey Northings / Southings (N/S).

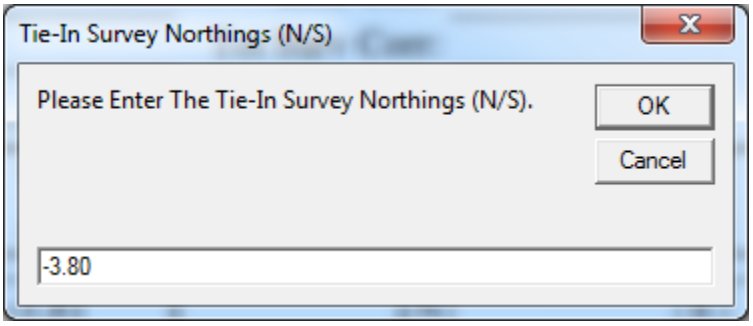

Figure 3-7 - Survey Tie-In N/S

The seventh pop-up asks for the Survey Eastings / Westings (E/W).

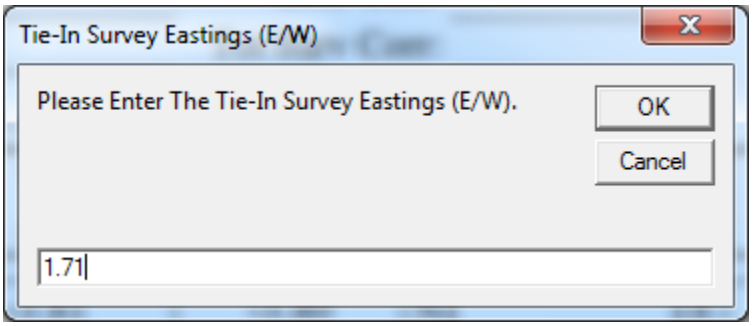

Figure 3-8 - Survey Tie-In E/W

Entering Survey Data

Once you have the Header filled in and the Tie-In data entered you are ready to start entering Survey Data. You can do this in several ways, depending on how you receive the data from the DD you could Copy & Paste this data; or you might have to type it by hand. No matter which method you use you will need to enter the Tool Type by hand. For your convenience, there is a Drop Menu in this field.

Copy & Paste

This method is the fastest way to enter data into the survey sheet and also helps ensure you have exactly what the DD has. In order to do this, as mentioned in Chapter 1, you need to select the location you want to paste to *before* you copy the data. So when starting a new survey sheet, select Survey Depth field directly under the Survey Depth Tie-In (this should be cell C12). Once you have this selected, go to the survey data you will be copying and select only the Depth, Inclination and Azimuth (the rest of the data is calculated). Copy this data (using whatever method you prefer; I recommend holding the "Ctrl" key and pressing "C"), go back to the survey page in the Cross Section program (**DO NOT** click into a different cell or you will have to copy the data again), Paste the data (using whatever method you prefer; I recommend holding the "Ctrl" key and pressing "V"). You do not need to "Paste Special" just paste the data, the program takes care of the rest.

Typing Data by Hand

If you are going to type the data into the cells by hand (usually used to enter the data after the initial import from the DD survey sheet); start in the Tool Type field and select the tool used to determine this survey. Press the Tab key (Note: if this is not the first field under the Tie-In field, you can simply type the first letter of the tool type {i.e. m for MWD} and press the Tab key) you will be taken to the Survey Depth field. Enter the Survey Depth and press the Tab key; you will then be taken to the Incl field. Enter the inclination and press the Tab key. Now you are in the Azi field, again, enter the data and press the Tab key. Notice you are now in the Tool Type field on the next line.

You probably also noticed there are no outlines on any of the cells in the Survey sheet until data is entered into the cells. The entire survey sheet (in fact, most of the sheets throughout the whole program) is formatted like this; this is done solely for cosmetic reasons.

Exporting Surveys (in Text Format)

There is a feature on the WellSight log program that allows you to import the survey data. How to do this will be explained in detail in Chapter 10; in the meantime, I explain here how to export that data so it is ready.

 In the Surveys tab of the Ribbon (see Figure 3-1); click the “Export” button. This will create a text file in the same folder the Cross Section program is in and name it “surveys.txt”. If there is already a surveys.txt file in this folder, it will not ask it will just delete the old file and replace it with the new one. Make sure before you click the button that you do not need the old file. This is especially important if you are starting a sidetrack (see Chapter 12 – Preparing to Sidetrack).

Chapter 4 - Asite

The name Asite was originally used by Tooke for one of their files. I don't believe the name is copyrighted or proprietary to them (I'm still researching that). However, in the meantime since this is the name most people are familiar with; we kept it (for now). The name of the file doesn't really matter though, I could call it "the pesky file with all the numbers.txt" if I wanted to, it would still work the same.

Overview

Asite is used as a way to collect the Depth (Measured), Rate of Penetration (ROP), Hot Wire (HW), Chromatographs (C1, C2, C3, nC1, iC1), Gamma, and True Vertical Depth (TVD) in one place. This is then used to locate your Connection Gas data and Background Gas data. You will not find Trip Gas in the Asite file. The data in the Asite file is retrieved from the Gas Detection equipment that you are using. These match the data with the depth, since you are not making footage while tripping; this data is not recorded by the equipment.

Chromatograph

If you are using a Chromatograph (it doesn't matter which one), you need the appropriate fields to exist in your asite file. When initially starting a Well, the default asite doesn't have these fields. If you go to the Asite tab in the Ribbon (see Figure 4-1), you will see a button labeled "Chromatograph".

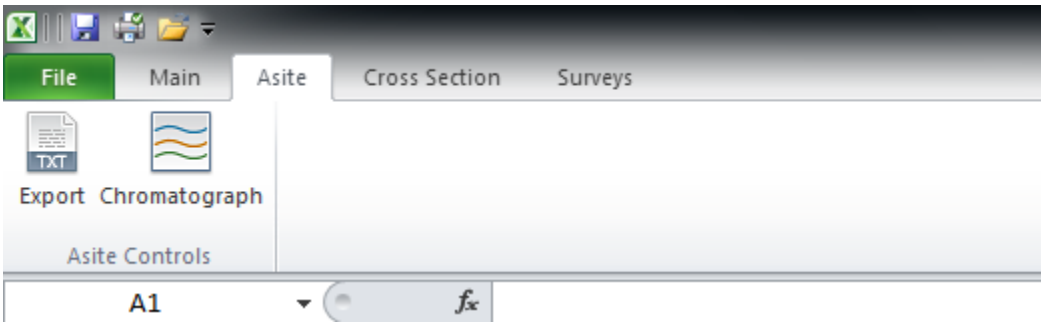

Figure 4-1 - Ribbon - Asite: *Used to control features semi-exclusive to the Asite sheet.*

 Click on the Chromatograph button. When you do, the program expands the Asite columns to include all the Chromatograph fields. It also changes the Export button code so it will export all the columns. It then moves the programs focus to the Log Inputs page (see Chapter 5) and makes the Chromatograph fields there accessible.

Note: The Chromatograph columns will NOT export correctly if they are not labeled correctly. If you notice these fields are not labeled correctly, simply push the button.

Chapter 5 – Log Inputs

Being able to get the data from the Cross Section program to the official logs is an important part of doing a professional job.

Overview

Aside from exporting and importing the raw data, we often have to label the data to make reading the logs easier. While there are several ways to accomplish this, all of which are perfectly fine methods; one of the focuses of the Cross Section program is to make your job easier. Here, this is accomplished by providing you a very simple way of collecting all the data you need for the labels into one place.

Getting Survey Data

Along the upper part of the Log Inputs page there are a series of numbers with lines next to them. Each of these number and line combinations correspond to the Survey box of the same number in the lower part of the page. Simply enter the Survey Depth for the survey you want and the program will pull the rest of the information directly from the Surveys page and enter it into the appropriate box.

Now all you have to do is select all the parts of the Survey box from "MD" to the numbers for the "VS" row (see Figure 5-1).

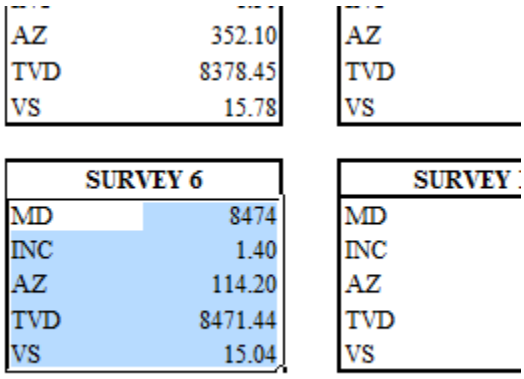

Figure 5-1 - Log Inputs - Surveys: *Select from MD to the numbers next to VS. Copy and Paste into the Logs.*

Getting Gas Data

If you are using a Chromatograph you should have already activated the Chromatograph fields (see Chapter 4 – Asite) if they aren't activated. If you are not using a Chromatograph, then you really don't need to use this page to get your gas data into the log, it would be faster and easier to just type it.

Chapter 6 – Dip Calculator

Calculating the dip is an important part of steering in the lateral. This page is designed to streamline this process.

Overview

The Dip Calculator is designed to do all the math and calculating for you. All you need to do is pick a "Critical Depth" (CD) and then find the surveys that correlate to that depth.

Finding the Critical Depth

To find a CD, you use a correlation well and look for a distinct marker point. Once you've found that point you look for that same point on the well you are currently drilling. Whatever the MD of that point is will be your CD. You need at least two of these in order to calculate a dip. The further apart they are, the more accurate your calculation will be.

Locating the Surveys

Once you've established the Critical Depths, you need to locate the surveys on either side of the first depth.

For example: If your first CD is at 9120' MD; you want the survey just above and just below that depth. On the rare occasion where the CD lines up exactly on a Survey, use your discretion as to which survey to use (keep in mind, the further apart the CDs are, the more accurate the calculation is). Repeat this for the next CD.

Using the Calculator

Now that you have your CDs, you can enter them into the Dip Calculator in the "Critical Depth" column. Now enter the Survey Depth (ONLY THE DEPTH) into the calculator. The program will automatically fill in the rest of the survey information based on that depth.

Once you have the two CDs and the four Surveys entered, you will receive a calculated dip in the "Degrees of Dip" section. The dip is the angle the formation you are drilling is angled at. Use this as a guide for your Formation Projection.

Chapter 7 – Formation Projection

Projecting the formation depths and dips helps establish the zone used to determine if you are drilling in the right place.

Initial Setup

When you first start the lateral, you need to establish where the formation and target zones are. Once you have this information, you enter it into the Formation Projection sheet. The Formation Projection sheet is what the Cross Section sheet uses to draw the indicator lines for the formation and target zones in the plot.

To setup this page you need to know a few things first:

- The expected TVD of the middle of the Target Zone at the end of the curve.
- The distance from the middle of the Target Zone to the Base of the Formation Zone above.
- The distance from the middle of the Target Zone to the Top of the Target Zone.
- The distance from the middle of the Target Zone to the Bottom of the Target Zone.
- The distance from the middle of the Target Zone to the Top of the Formation Zone below.

There are “pop-up” instructions in all the fields of the Formation Projection page that need to be initially filled in.

Using the Formation Projection Page

Once these are filled in correctly you simply continue filling in the “MD of Target” fields and “TVD of Target” fields. As you fill these in, the rest of the fields will calculate themselves and give you the Dip Angle of the Target Zone. As this page is filled in, all the zone lines will be drawn on the Cross Section Graph automatically.

Chapter 8 – Cross Section

The Cross Section is really the main point of the program. This is what you use the rest of the data you collect and enter to create.

Initial Setup

Setting up the Cross Section page is actually pretty easy, all you need to do is make adjustments to the scales on the side and top so where you are drilling is actually on the page. Before you will see anything though, you will need to have the Surveys page (see Chapter 3), Asite page (see Chapter 4) and Formation Projection page (see Chapter 7) filled in.

Using the Cross Section

If the Surveys, Asite and Formation Projection pages are filled in correctly; you should see all the data from these pages on your Cross Section graph. If you do not see the data, you need to make adjustments to your Axis Scales.

Adjusting the Axis Scales

To adjust the Axis Scales, you right click anywhere on the number line for the Axis you are trying to change. Select Format Axis from the menu that pops up, it should be at the bottom. In the window that pops up, change the Minimum and Maximum Axis values so your data appears (see Figure 8-1).
Note: The axis on the left is for the Surveys; the axis on the right is for the Gas & Gamma. The axis on the top is for the hole Measured Depth.

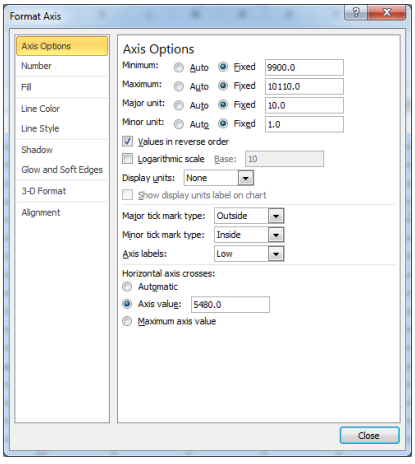

Figure 8-1 - Format Axis: *Used to adjust the Minimum and Maximum Axis values.*

Chapter 9 – Exporting Reports

Once you have all the pages set up and have started collecting data you will be ready to export the reports.

Overview

Generating the reports so they can be sent out to whomever is supposed to get them can't get much easier. The Cross Section Program contains a button on the menu that creates these for you.

Exporting Reports

The "Export PDF" button on the Main tab of the menu will export all the reports or pages normally sent to other people. When you push the button it creates a folder directly in your Well folder called "Cross Section Files" and puts a PDF version of the following pages in it:

1. Cross Section
2. Dip Calculator
3. Formation Projection
4. Surveys

When you first start the Well, there won't be any data in your Cross Section Plot page so you will likely get a generic Excel Warning (see Figure 9-1). This simply tells you that you can't plot Zero or Negative values. Simply click Ok and it will continue exporting the files.

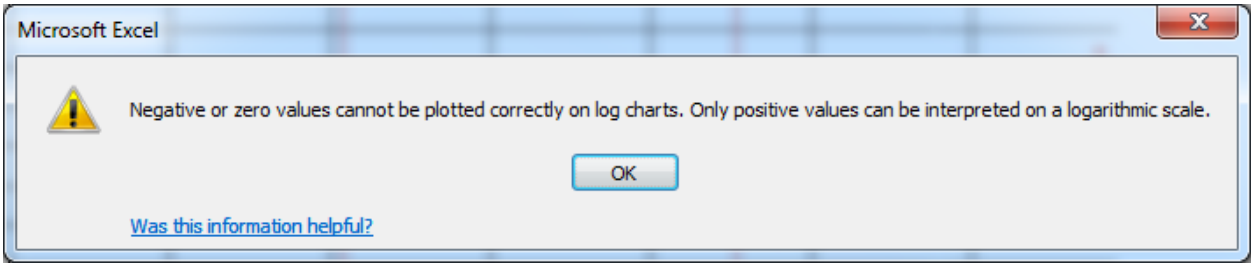

Figure 9-1 – Generic Excel Warning: *A generic waning label letting you know you cannot plot negative or zero values.*

Sending Reports

Now that your reports have been exported, all you have to do is select which ones you want to send and attach them to the e-mail. By having the reports in PDF they are smaller, readable by anyone with Adobe Reader, and protected from being accidentally changed. The Cross Section program file should never get too large to send though. If you need to, you can send the entire file. I recommend you send this instruction guide with it.

Chapter 10 – WellSight

Importing the data into the WellSight program is the best, fastest and easiest way to make sure that all your data matches.

Overview

WellSight is a third party program that was designed and is maintained by a separate company. This is a great program which most people who use it don't even use half of the capabilities of. I am not going to go into detail about the entire program in this guide; this simply focuses on the process of setting up the log so you can import the survey data from the Cross Section program. There are no changes to the way you would import the gas and gamma data so that is not covered here.

Initial Setup

Once you open the WellSight program (the Vertical Log and Horizontal Log are setup the same way). Select "Layout" from the menu along the top. In the drop-down menu, select "Layout Designer". You will get a pop-up window advising you to read the online help topics about the Layout Designer feature. (I recommend you do this too, the only thing this guide tells you is how to setup the Surveys portion). Click "Yes" to enter the Layout Designer. Once in the Layout Designer, click the little "+" next to "Track: Survey Data" then click the "+" next to "Layer: Survey Data". This is where you can rename the Survey Track, select the color, line thickness, etc. (see Figure 10-1).

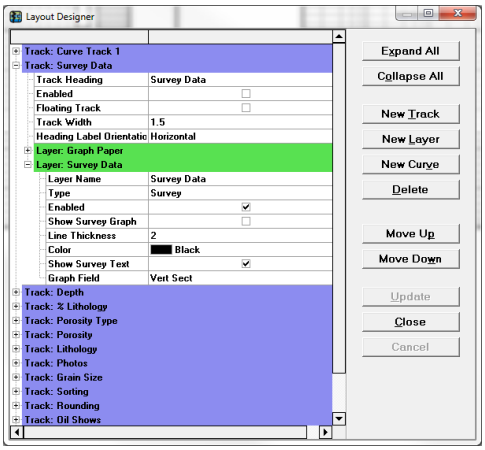

Figure 10-1 - Layout Designer: *This is where you adjust all the settings to your log files in WellSight.*

The part we're interested in right now though is the "Show Survey Text" line (see Figure 10-2). If this box is checked, then when you import the surveys.txt file from the Cross Section program, the WellSight program will automatically write the survey data into the log.

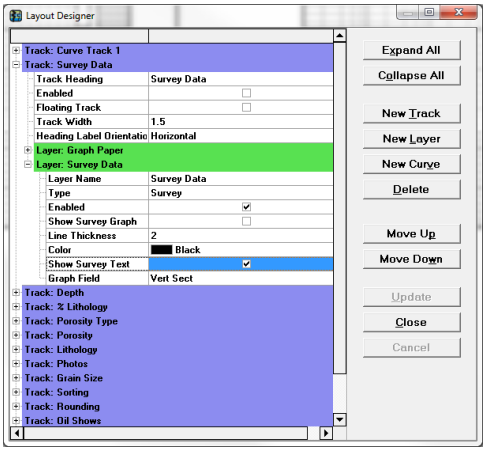

Figure 10-2 - Show Survey Text: *Checking this box means the Survey Text will automatically be written to the log when imported.*

Note: While this may sound nice, currently it does not display the Vertical Section data. I have talked with the WellSight developers and they expect to have an update to WellSight based on us using the Cross Section program released by April 2012.

Importing the Survey Data

To import the Survey Data, you will have to set up the file initially; most of this is a onetime thing (provided you make a template). Start by selecting “File” from the menu along the top, in the drop-down menu select “Import” followed by “Surveys”. In the “Import Survey File” box, make sure the “Files of type:” says “All Files”. Then find and select the “surveys.txt” file and click “Open”.

You will receive a pop-up box telling you the file is not an LAS file; click OK on this box. You will receive an “Import Surveys” box (see figure 10-3). Even though this will appear every time you import the surveys, you will only need to set this up once (if you save a template of the WellSight file after this you won’t have to do this on your next Well either).

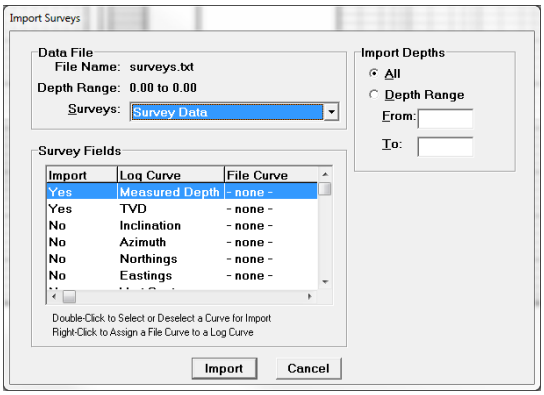

Figure 10-3 - Import Surveys Initial View: *This is the Import Survey screen before it is set up.*

To import the Survey data, you need to tell the WellSight program that you want to import that particular data. To do this, simply double click on the “No” on each line and it will change to “Yes” (see figure 10-4).

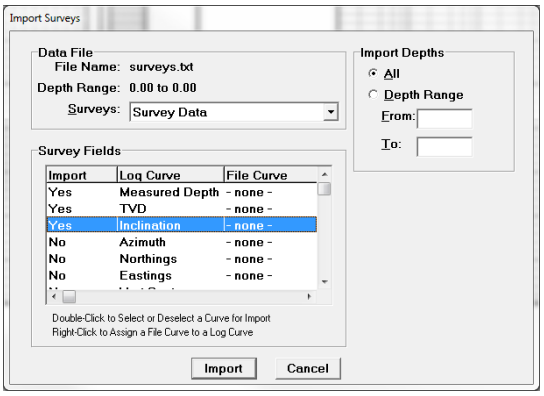

Figure 10-4 - Import "Yes": *Double-click on a “No” to make it a “Yes”.*

Once all the lines have been changed from “No” to “Yes” you need to tell it which column to get the File Curve from for each data line (see Figure 10-5). To do this, you simply select the line, and then right click and a drop-down menu will appear. Select the column from the surveys.txt file where the data for each line is located.

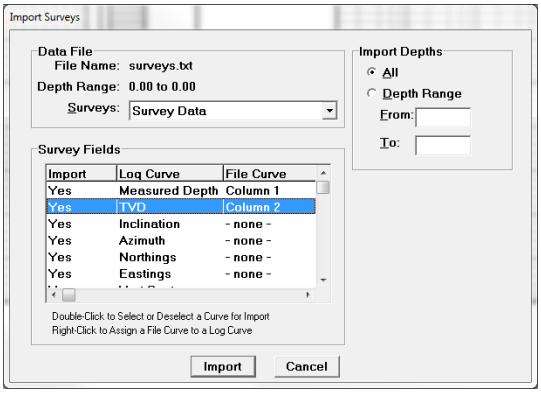

Figure 10-5 - File Curve Column Selection: *Select which column of the surveys.txt file to import the data from.*

Note: To make this process easier, the surveys.txt file already puts the data in the same order displayed here, so simply put the columns in order from Column 1 to Column 8.

Chapter 11 – Preparing to Sidetrack

Even though no one wants to sidetrack, it happens. This chapter tells you how to make the process easier.

Initial Actions

The first thing that has to be done (once the sidetrack depth has been determined) is to make all your paperwork ready so you can start recording the data from the new depth. You should start this process by making sure you have everything filled in as much as possible. Once you have everything in the Cross Section program updated, close the program (remember, it will automatically save).

Creating a New Sidetrack File

Once you have closed the original file, you simply go to the Well folder and select the file. Copy the file (using whatever method you prefer; I recommend holding the "Ctrl" key and pressing "C") and paste it back to the same folder (using whatever method you prefer; I recommend holding the "Ctrl" key and pressing "V"). *Note: Windows will automatically make the new file a "Copy" of the original, it will NOT replace it.*

Once you have the new file, simply rename it using whatever naming convention you prefer for sidetracks. Newer releases of the program will have a feature that will automatically make this file for you and will give it the same name as the original file and add "Sdtk" and the number of the sidetrack to the end of the name; (For example: "Sample 45-67H" will become "Sample 45-67H – Sdtk1"). Now either move all the original files (especially the "asite" and "survey" text files) to another folder. Or move the new sidetrack file to another folder to prevent accidentally overwriting the original text files.

Editing the New Sidetrack File

Open the new sidetrack file and activate it. You can start on any page you like I recommend simply starting with Asite; remove all the data from the sidetrack depth to the end of the file. The easiest way to do this is simply go to the depth, click in the cell for the first depth immediately after the last depth you want to keep. While holding down the mouse button, drag your mouse along the line to select all the data from Depth to TVD (DO NOT select the entire row by clicking on the row number, this won't work). Once you have the line of data selected, press and hold the "Ctrl" and "Shift" keys then press the "Down Arrow" button. This will select everything from that line to the end of the data. Once this is all selected, press "Delete".

Repeat this process on the Survey page. Since the formation shouldn't be changing because you're sidetracking, you won't need to do this on the Formation Projection page.

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