



USER Manual

Depth Features - DataCan Download Software V4.2.3

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History of Changes

Rev. No.	Date	Pages	Description of Changes
1.0.0	Sept 18 - 2015	All	Initial Draft
1.1.0	July 23 – 2018	25-26	Export Time Pass to LAS Removed references to licensing. Updated corporate branding. Updated version to match the Download
4.2.3	June 25, 2020	27	Software version number.

1 About This Guide

This document is intended as a supplement to formal training. DataCan is constantly working to improve its products. We must therefore reserve the right to change designs, materials, specifications and prices without notice. DataCan declines any liability that may arise out of the potential inaccuracies in this guide.

This guide assumes that you have some computing and tool knowledge. For more information, contact your local service representative.

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We thank you for any feedback or comments that will help us to continue to improve our products and service.

2 Introduction

DataCan Services Corp. provides technology driven downhole measurement solutions that deliver productivity, quality and safety. We design, manufacture and service 200°C plus hybrid platform instruments, patent pending multi-cycle instant close shut-in tools, reservoir management systems and a suite of quartz and piezo-resistive pressure measurement instruments. We offer specialized solutions that will help you improve productivity in your applications.

We are the leader in ultra-high temperature circuit design, manufacturing and packaging.

- Our part selection process ensures the best long term reliability is provided.
- Our fully automated surface mount assembly procedures ensure the highest quality circuit is constructed every time with minimal heat impact.
- Our Hybrid design and construction techniques will enable DataCan and its customers to reliably enter the 177°C to 225°C market.
- Our metal to metal seal and fully welded designs prevent potential leaks.

3 Product Description

DataCan's program and download software operates and controls all of DataCan's downhole and surface products. The software can be used to program tools, download the information stored on the tool memory, graph tool data, and create reports containing relevant job information. The software runs on Windows XP/Vista/7/8/10.

3.1 Purpose

DataCan download software is designed to be as user friendly as possible while offering features not found on the competition's communication software.

DataCan's products are designed to store data to memory. Whether the memory is located downhole inside of a memory recorder, or at the surface in a surface read out box or multi-channel logger, the architecture of the data storage and retrieval remains the same.

DataCan stores data in "Jobs". One job has a start time and end time. For a memory pressure gauge, the start time is when the operator plugs the battery onto the pressure gauge. The end time for a memory pressure gauge is when the battery or power supply is removed from the gauge.

The act of powering the tool starts the tool and the program sequence. If you remove power from a tool then re-establish power, the program will restart as well.

Jobs can be downloaded individually or as a set. Jobs can be merged together. Jobs are not deleted by the act of re-programming the tool. The only way to delete a job is to instruct the software to perform the delete jobs command. You must delete all of the jobs at once.

You can sample any pressure gauge, surface box, or logger in real time and save files in real time to a remote location.

4 Depth Features

DataCan has implemented a number of premium features for handling Depth data. These features are described below.

4.1 Depth Import

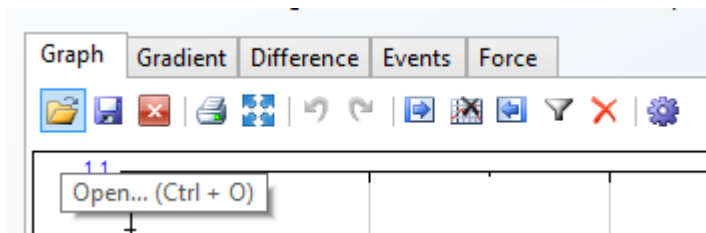
Depth files that are in the DataCan ASCII format can be automatically opened in the software, just like any regular data file. Depth files in this format are created using the DataCan PRM Viewer in conjunction with a Lee Specialties Portable Memory Recorder. Lee LineWise systems are also able to export to the DataCan format.

If you require the ability to load in third party depth files, please contact DataCan Services for assistance.

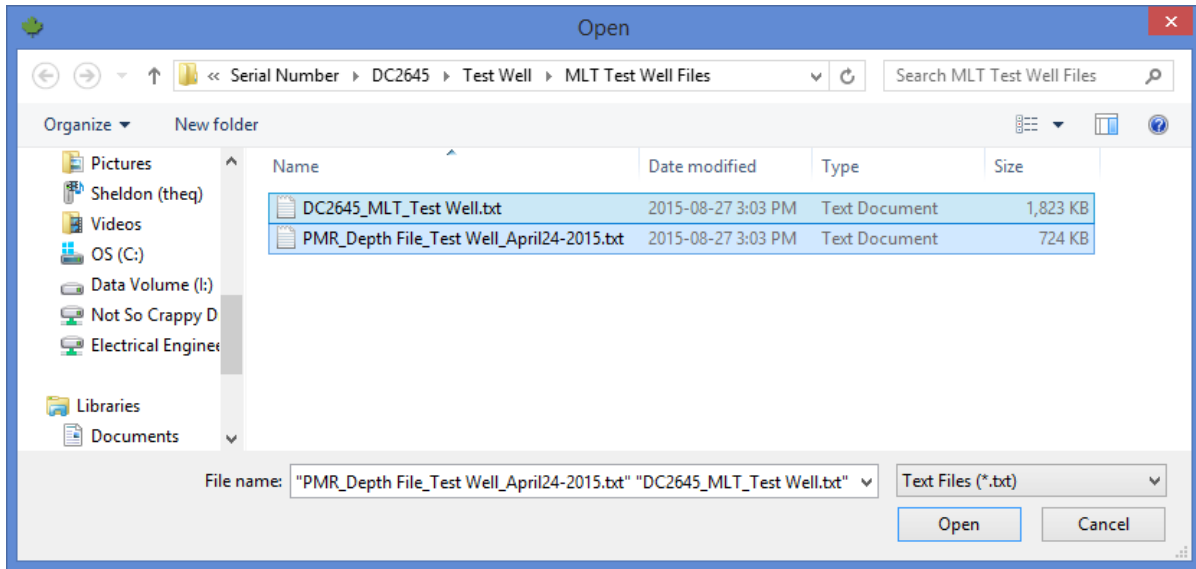
4.2 Depth Merge

Depth Merge refers to the ability to take depth data from your acquisition system (ex. PMR or Linewise) and merge it into your memory gauge data (such as the Mini-Logging Tool).

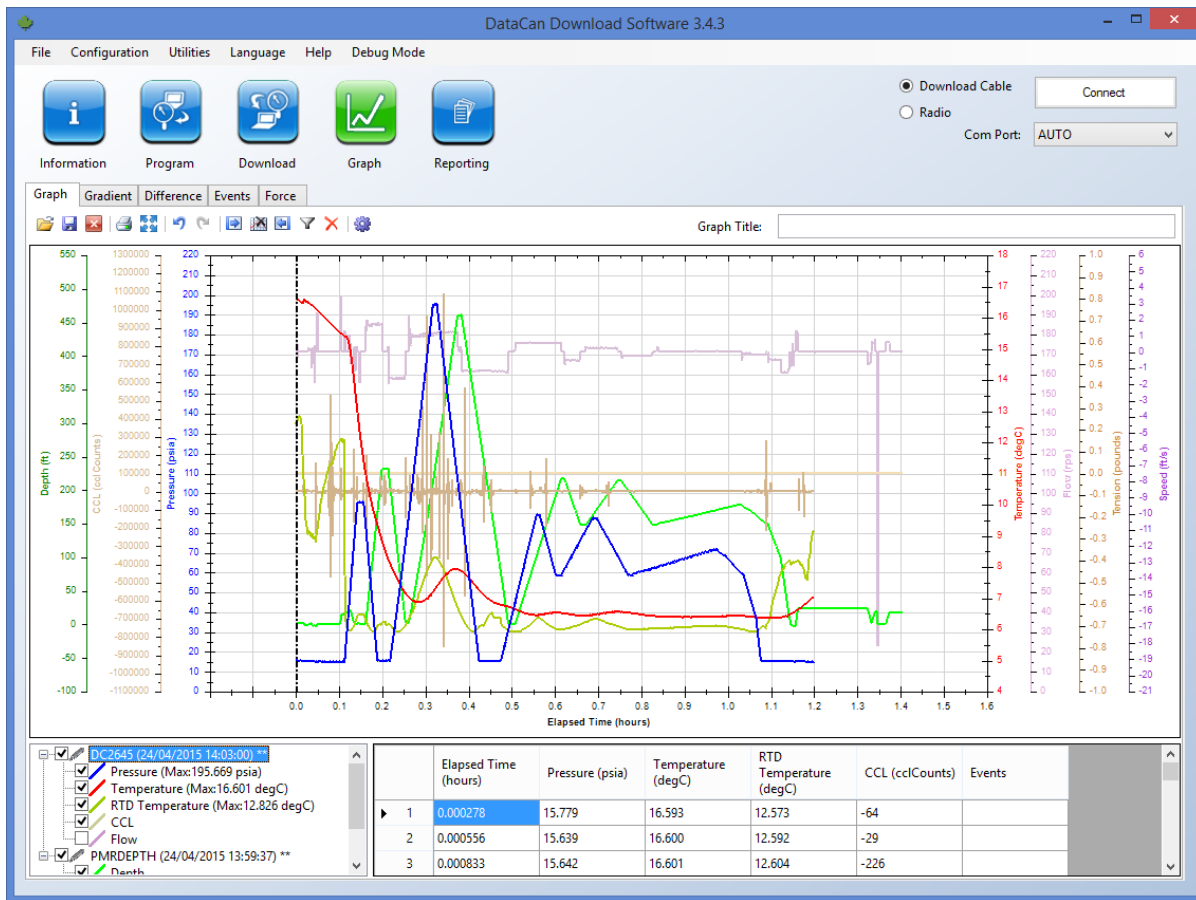
The first step is to open both the depth data and gauge data in the Download Software. On the Graph tab, select the open icon:



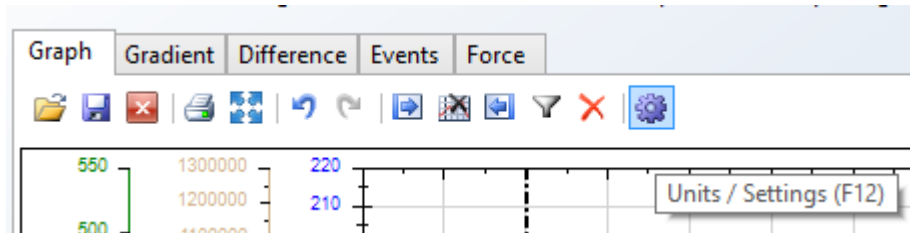
Select your files. You can open them both at once or one at a time.



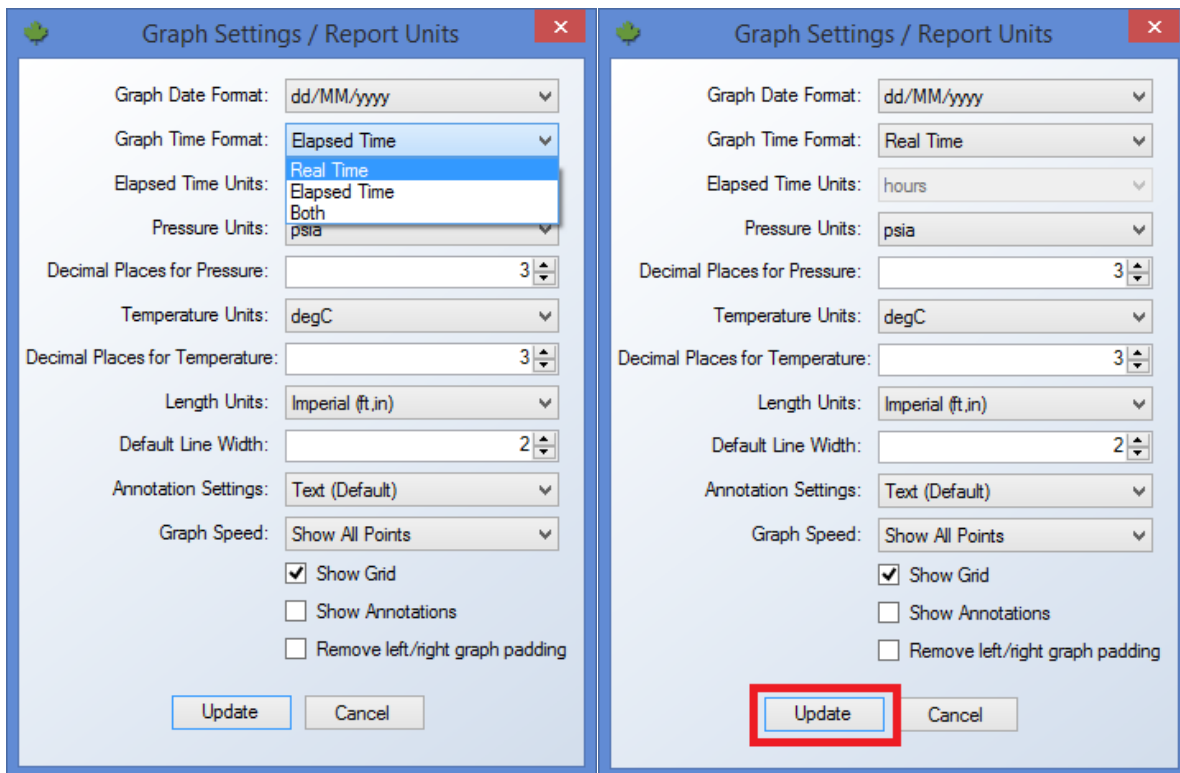
You can now view your Depth and MLT data together.



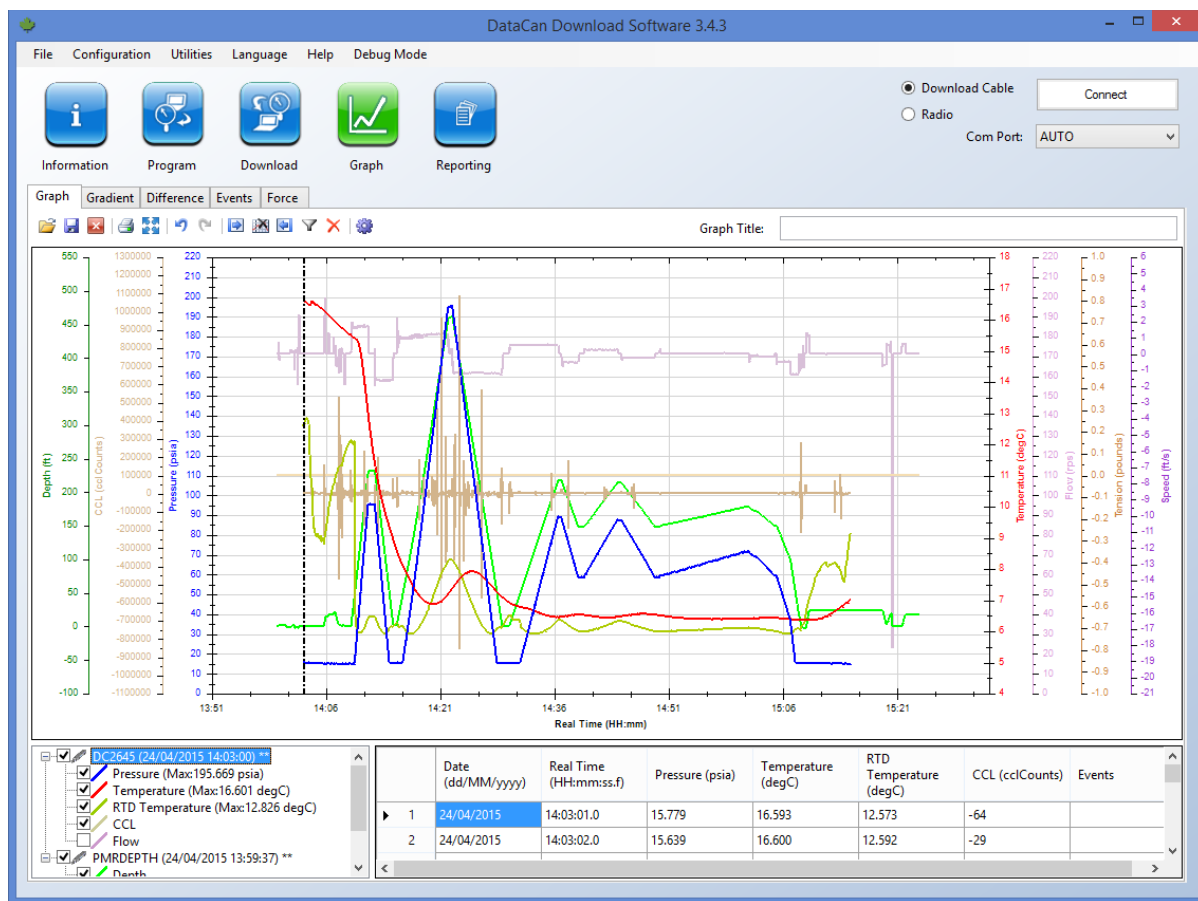
Before merging, you must line up your depth data with your gauge data. The first thing to try is to change the graph time format to Real Time units. If the start time of your gauge data is accurate, and lines up with the clock on your data acquisition unit, this may be sufficient to line up your data. To do this, first select the Graph Settings icon:



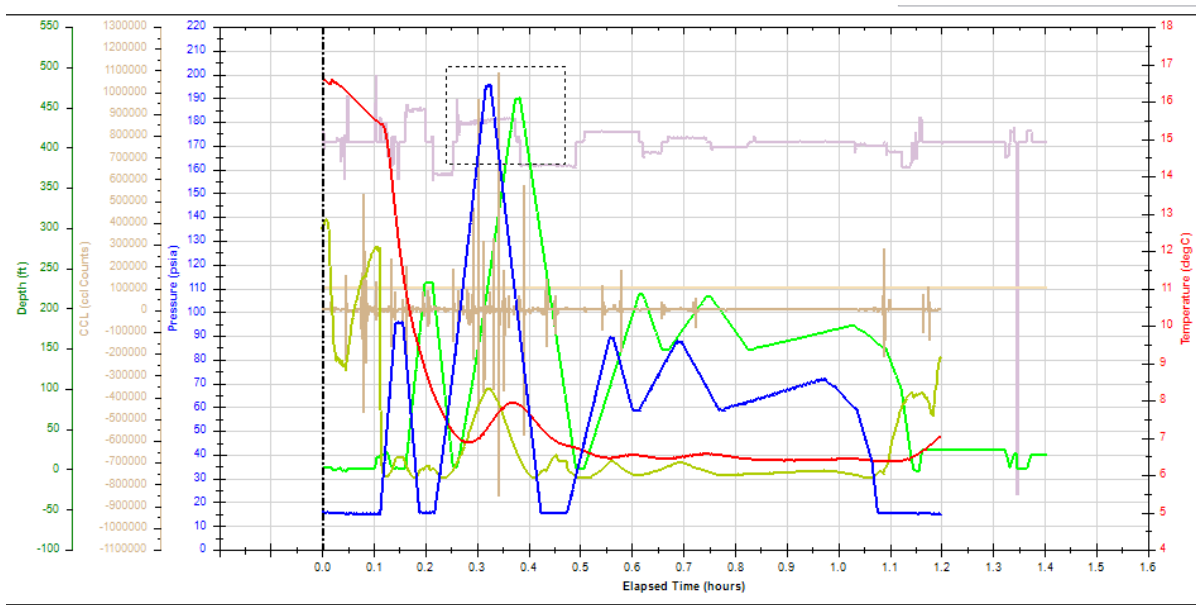
Then change the Graph Time Format to Real Time:



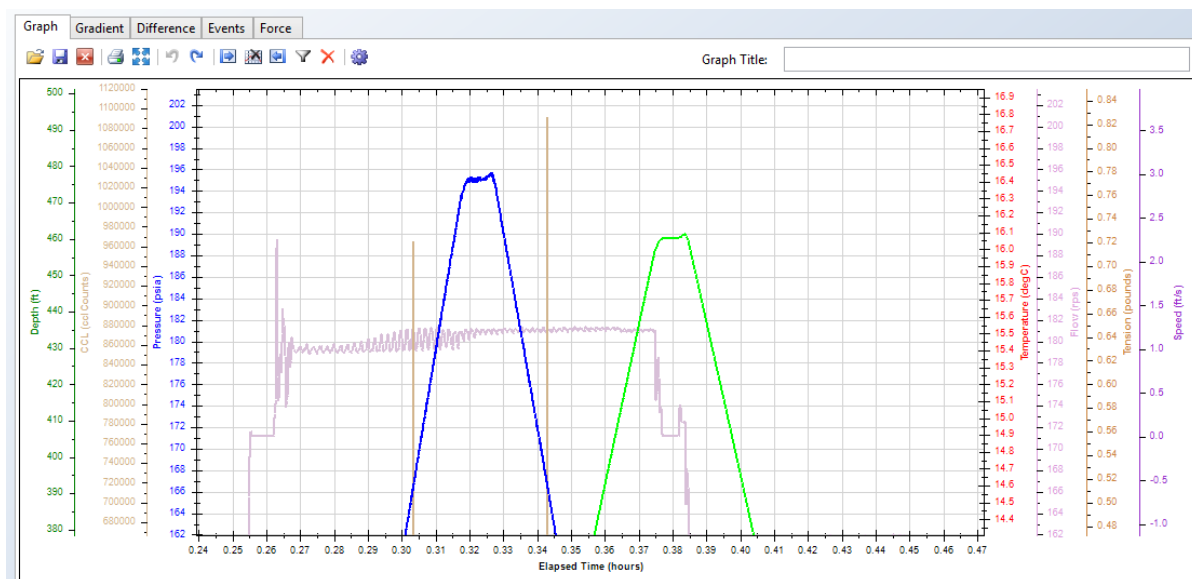
Your data will now be plotted in real time:



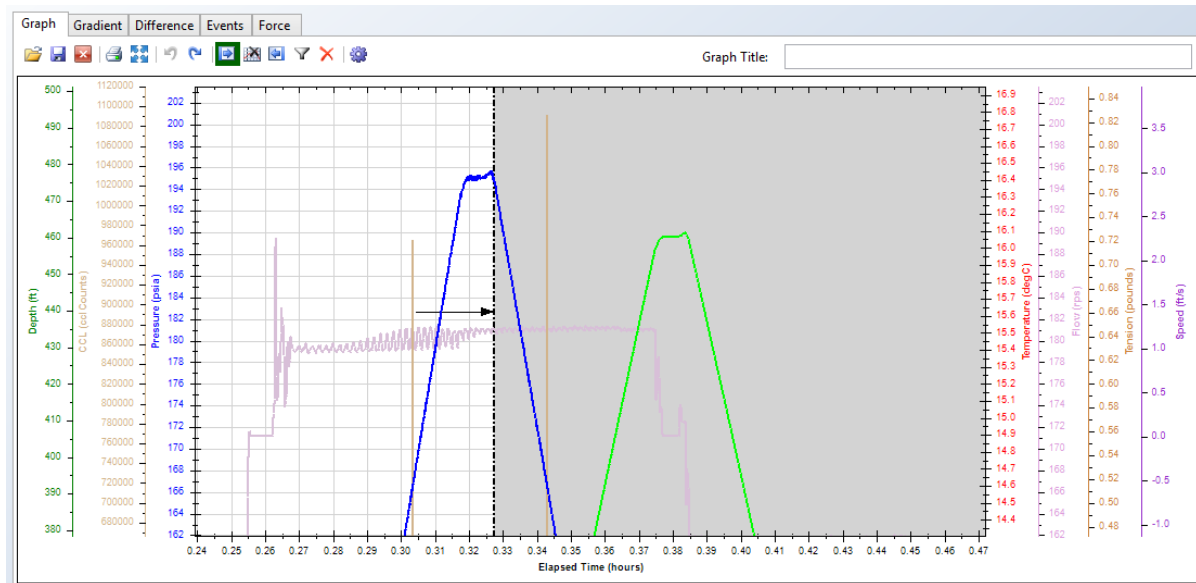
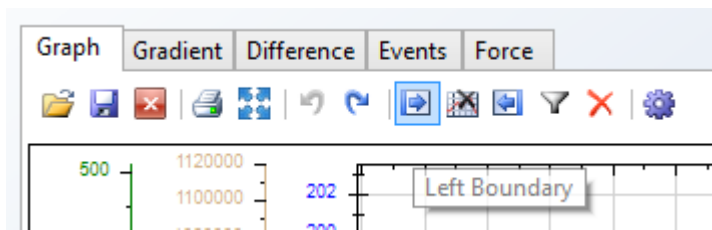
It may be that your data is still not lined up. In that case, you can use the bound lines to shift the data for one of the tools. The first step is to find a location on the graph where you'd like to line up your depth and data, and zoom in on that location. To select a location to zoom in on, hold down your mouse and drag to select a region:



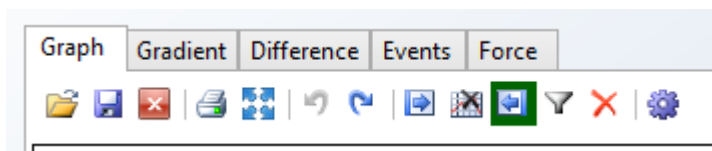
The graph will zoom in on this region:

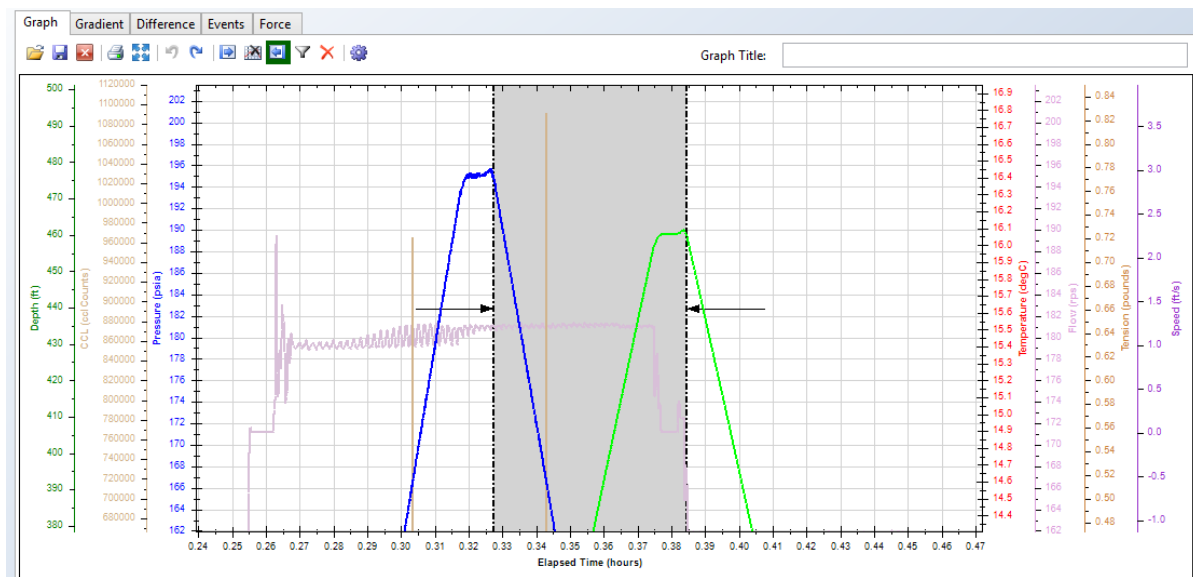


Now we will choose the points we want to line up. Select the Left Bound Line tool in the toolbar, and then click on the leftmost point you wish to line up:

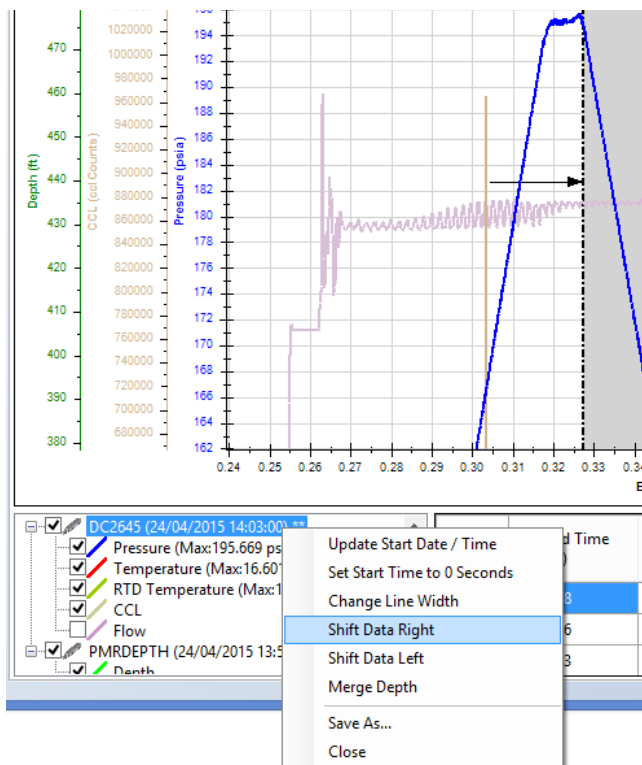


Then choose the Right Bound Line tool, and choose the rightmost point.

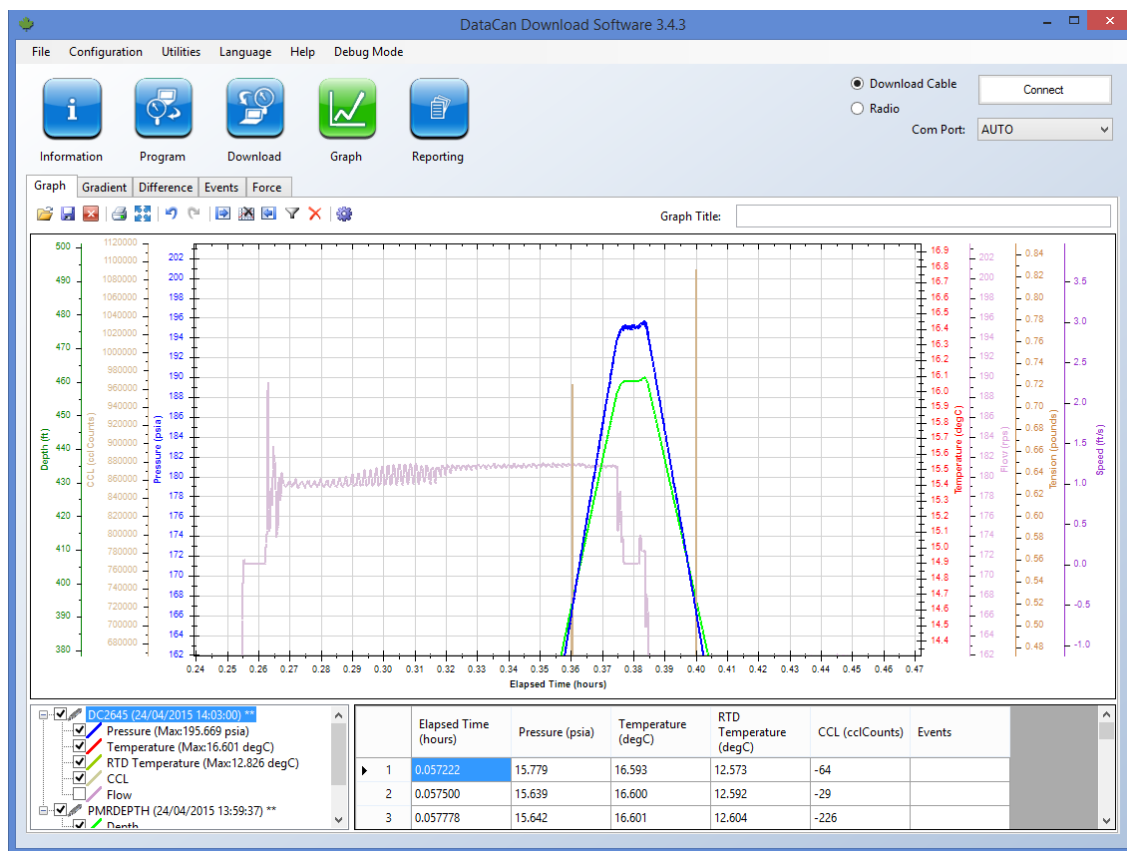




Now we want to shift a line. In this case, we are shifting our MLT data to the right. To do that, go to the tree in the bottom left corner, and right-click on the job that you wish to shift, and then select Shift Data Right:

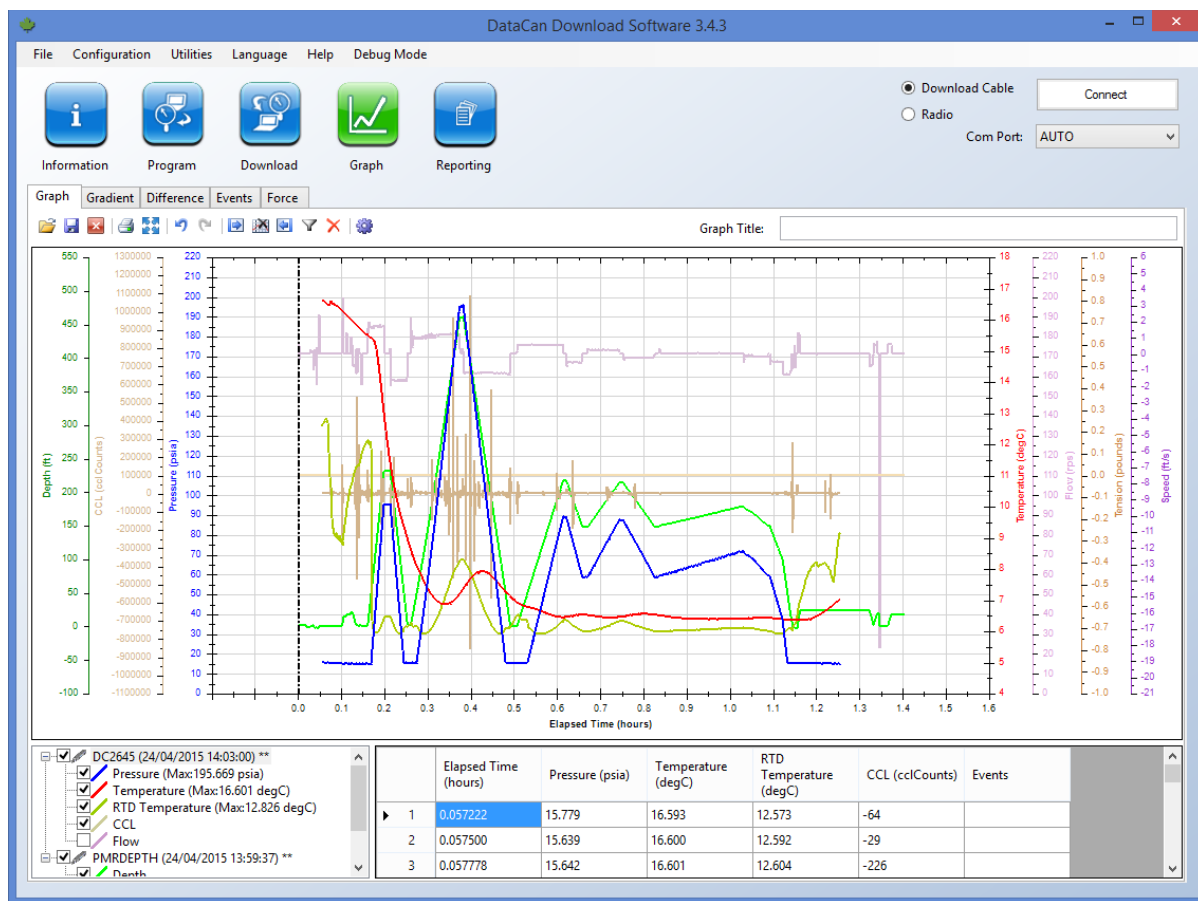


Your data will now be shifted.

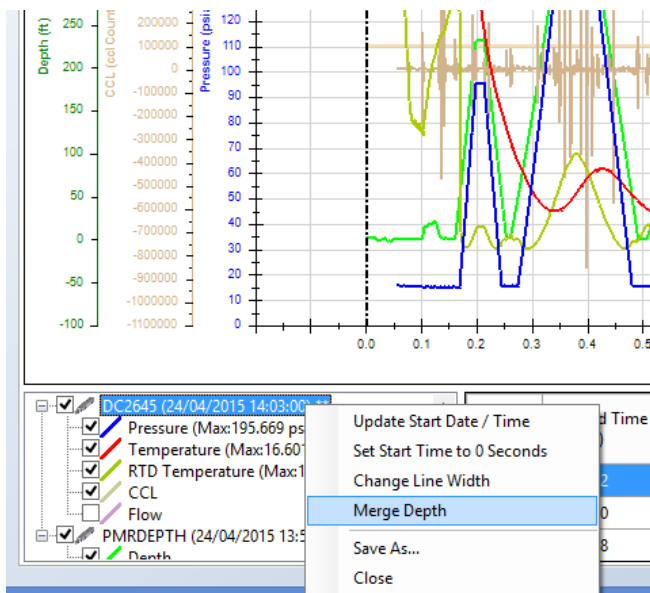


If the data is not quite lined up, you can continue to select points and shift the data further. If at any time you make a mistake, you can use the Undo feature to revert your changes.

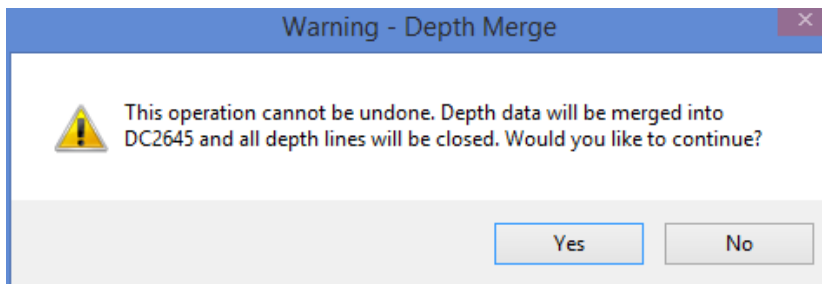
Once you are satisfied that your data is aligned (like in the graph below), you can move on to the Depth Merge step. You may want to save your data before merging. Unlike the previous steps, the Depth Merge operation cannot be undone by using the 'Undo' button.



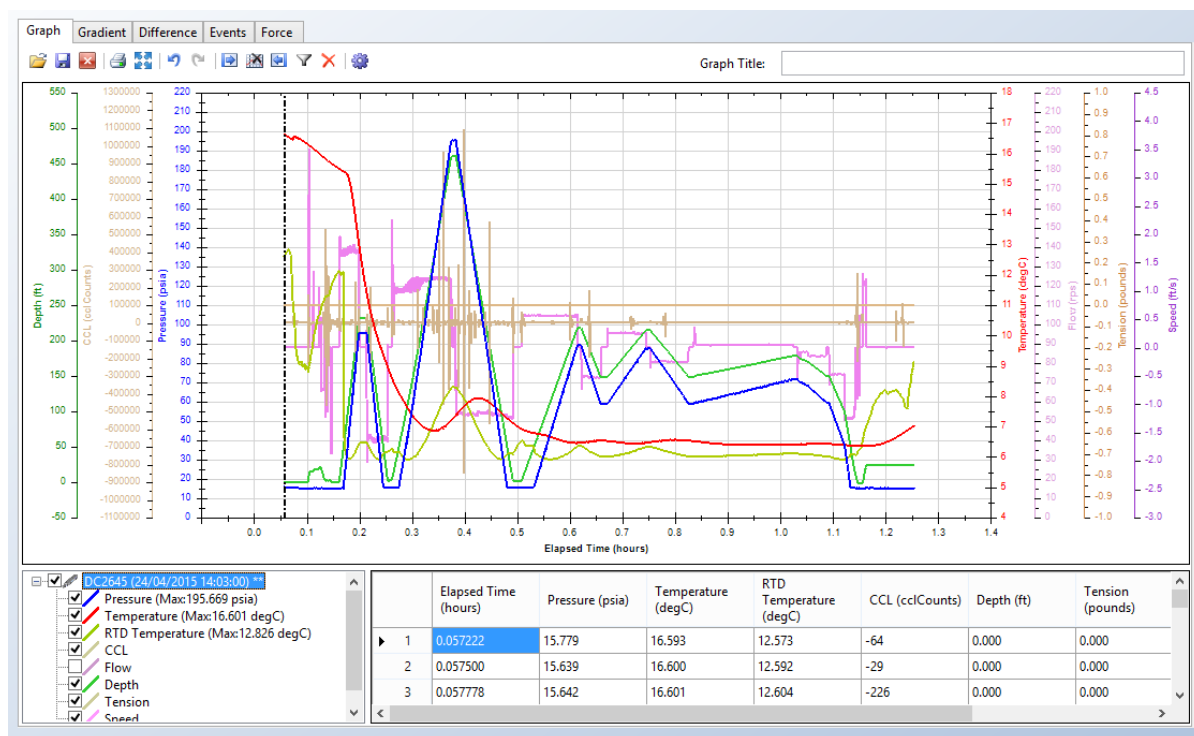
To merge your depth data into your gauge data, go to the tree in the bottom left and right click on the gauge you wish to add the depth data to:



Depth data from your depth acquisition system will be merged into your gauge data, creating a single file. Click Yes on the dialog to confirm that you want to merge your data.



Your data will now be merged.

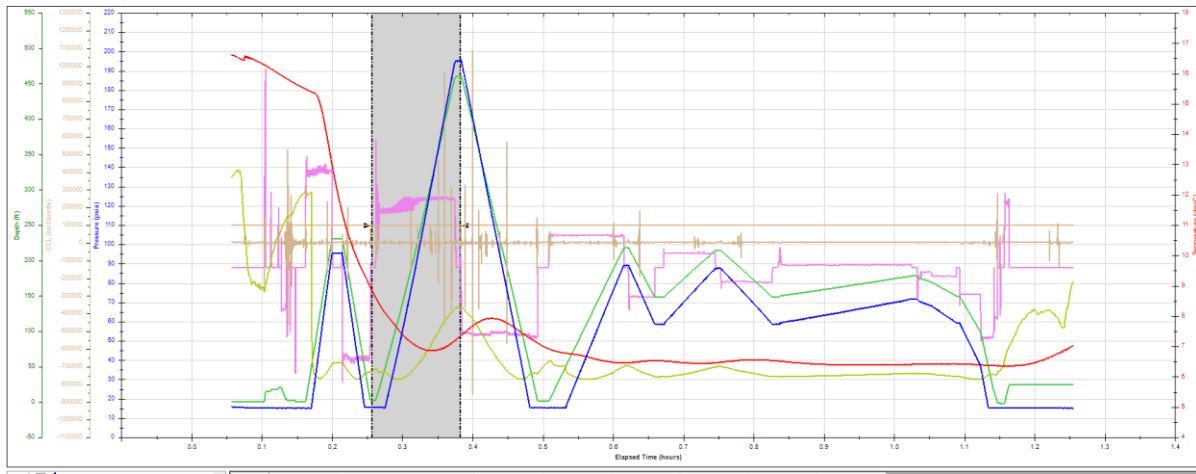


You will likely want to save this file after the merge is completed. We suggest that you save the file with a new name, however you can also choose to overwrite your gauge data with the merged data.

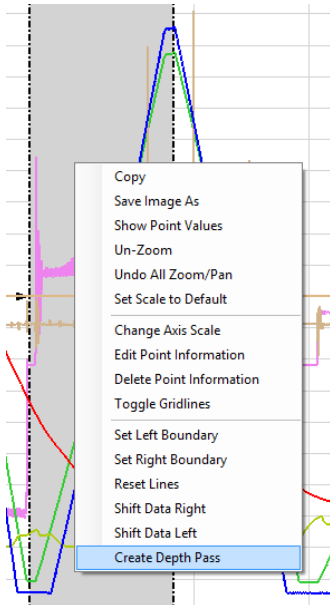
4.3 Depth Passes

The Depth Pass features allows you to isolate a single depth pass from your data, and graph each of your traces on depth.

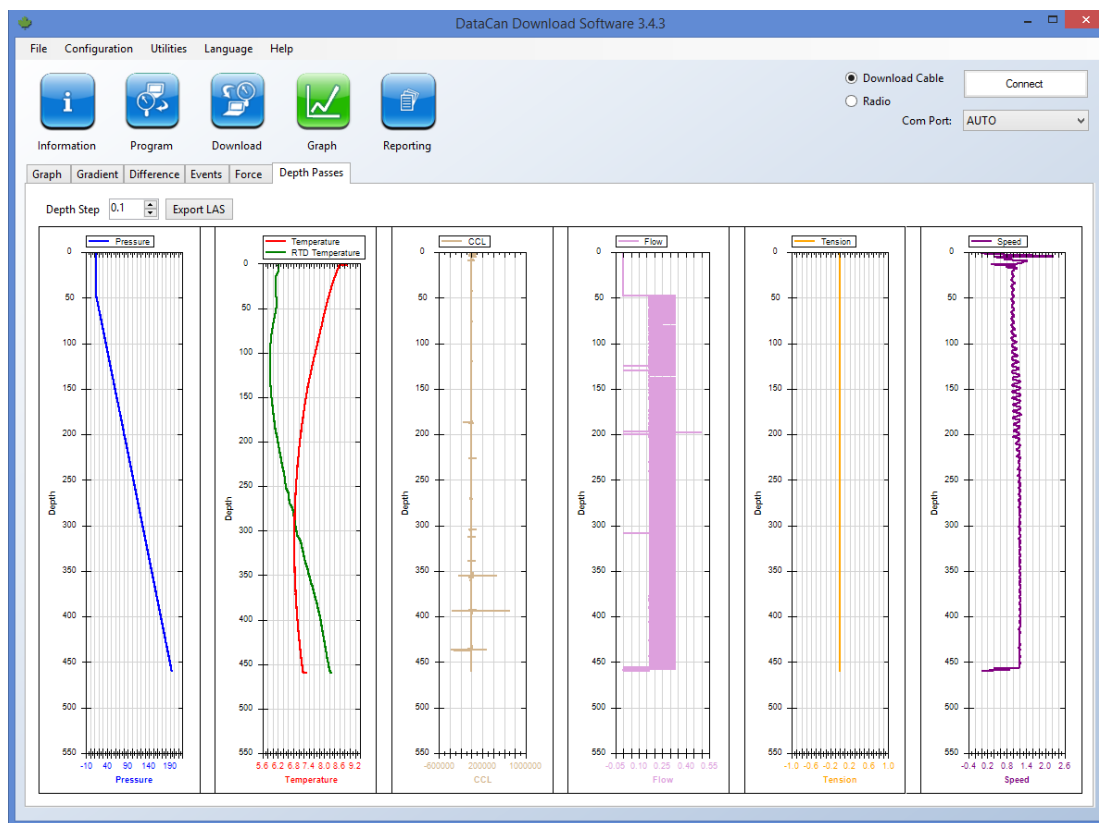
The first step is to isolate your depth pass in the data, using the left and right bound lines to indicate where your depth pass is:



Then right click on the graph, and select '**Create Depth Pass**'.

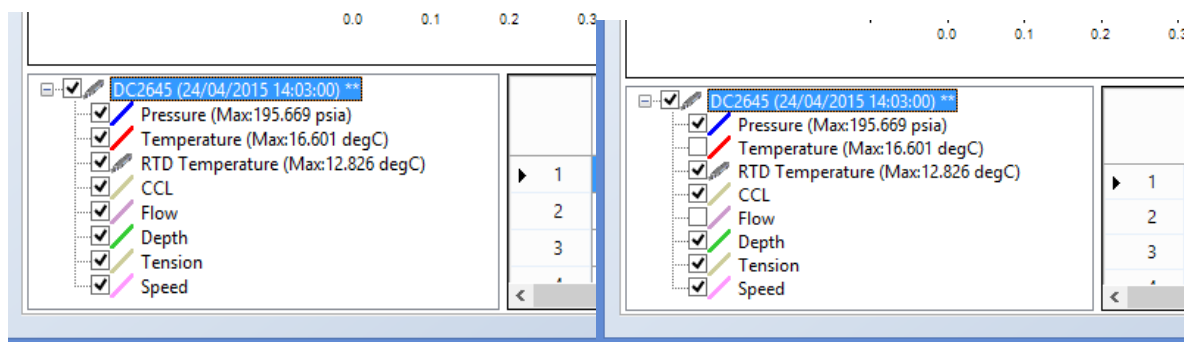


A Depth Pass tab will appear:

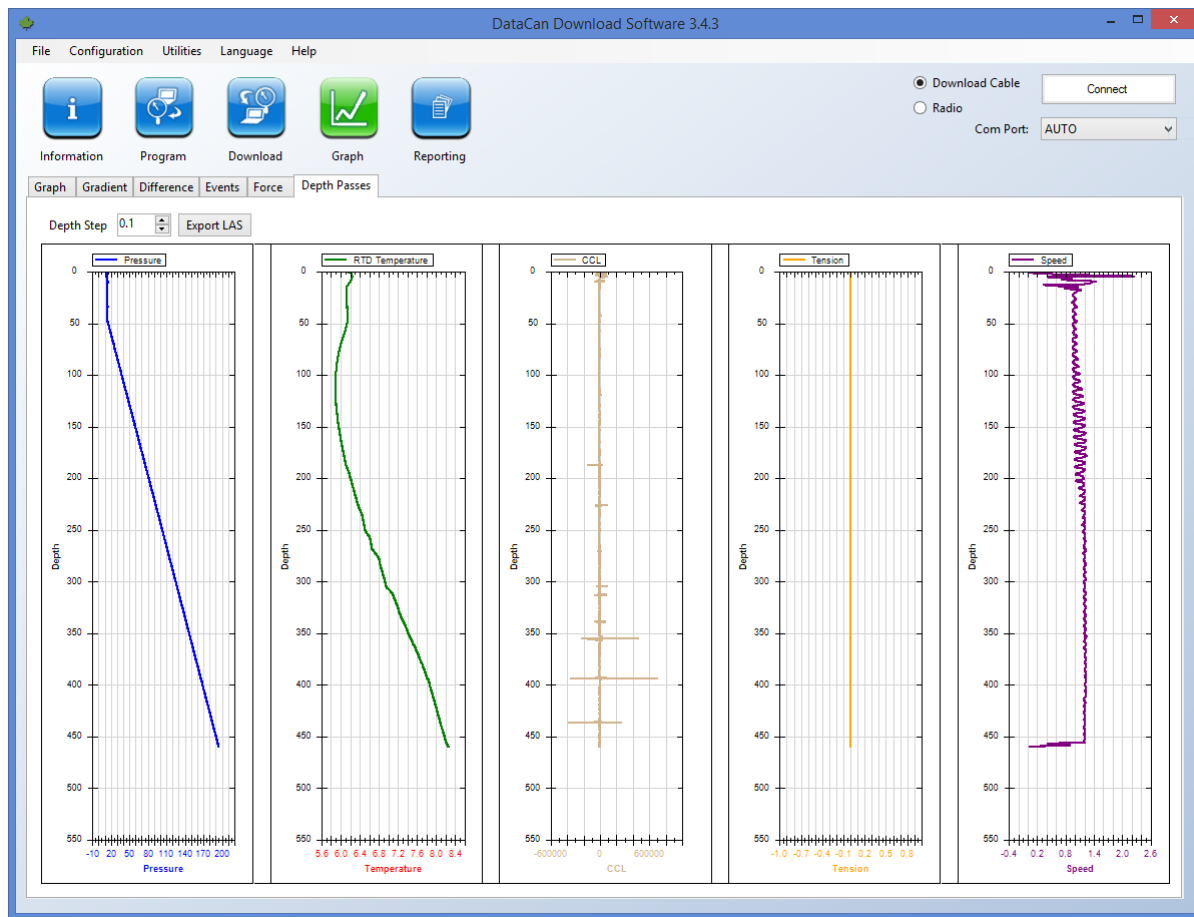


The depth pass will contain the traces that appear on your graph. If you wish to exclude certain traces from your depth pass, simply uncheck them in the tree in the bottom left corner before creating your pass.

For example, you may not wish to see the internal tool Temperature and the Flow in your depth pass. To exclude them, uncheck those lines in the tree:



Then create your depth pass. Only the traces you've selected will appear.

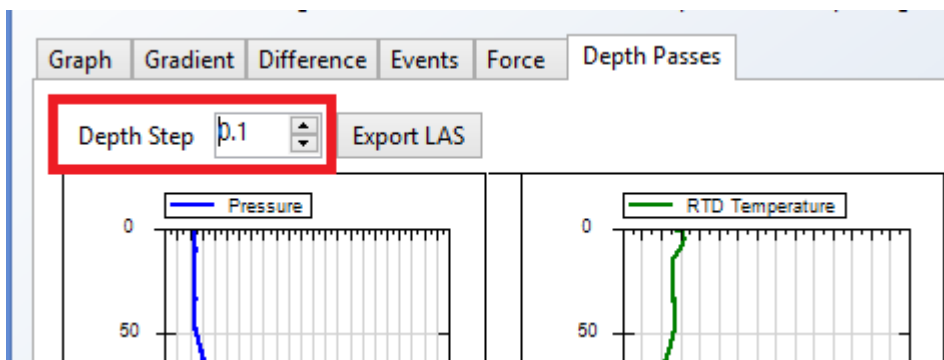


Currently, the Download Software will only display one depth pass at a time. If you are creating multiple traces, you will need to export them one at a time, repeating the steps in this portion of the manual for each one.

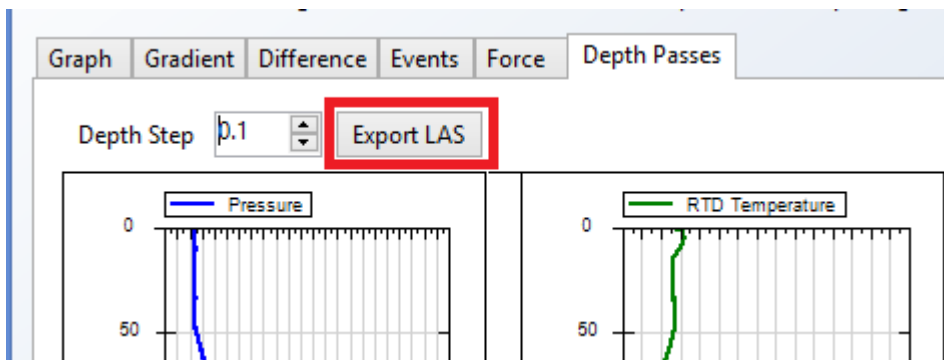
4.4 Export Depth Pass to LAS

The DataCan Download Software allows you to export your passes in LAS format from the Depth Pass tab.

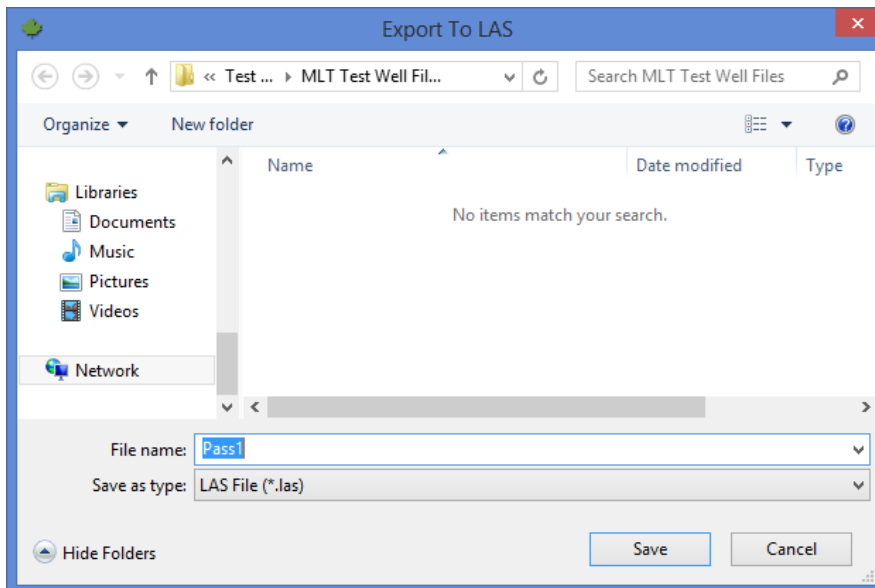
The first thing you will need to determine is the step that you wish to use in your LAS file. Use the up/down control on the top left to set your depth step. If your data is in metric, the depth step will be in meters. Otherwise, the depth step will be in feet.



Once your step is set, press the **Export LAS** button.



Choose the location and name for your pass, then hit **Save**:



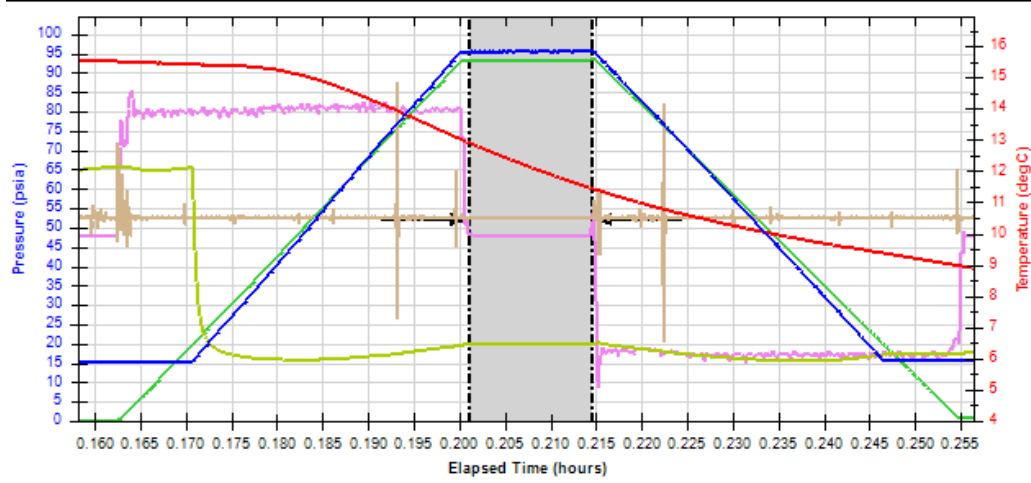
A LAS file has been generated. If you view the data in a text editor, it will look something like this:

```
~VERSION INFORMATION
~VERS. ....3.0.....: CWS LOG ASCII STANDARD -VERSION 3.0
~WRAP. ....NO.....: ONE LINE PER DEPTH STEP
~DLM. ....SPACE....: DELIMITING CHARACTER (SPACE TAB OR COMMA)
~Well Information
~#MNEM.UNIT.....DATA.....DESCRIPTION
~#-----
~START.F.....1.900.....:First Index Value
~STOP.F.....460.600.....:Last Index Value
~STEP.F.....0.100.....:Step
~NULL.....0.....:Null Value
~COMP.....:Company
~WELL.....:Well
~FLD.....:Field
~LOC.....:Location
~STAT.....:State
~CTRY.....:Country
~API.....:API Number
~SRVC.....:Service company
~DATE.....04/24/2015.....:Service Date 'DD/MM/YYYY'
~LATI.....:Latitude
~LONG.....:Longitude
~GDAT.....:Longitude
~Curve
~#MNEM.UNIT.....LOG CODES.....CURVE DESCRIPTION
~#-----
~DEPT.F.....:Depth
~PRES.PSIA.....:Pressure
~TEMP.DEGC.....:External RTD Temperature
~CCL.COUNTS.....:CCL
~SPD.FT/S.....:Speed
~TEN.LBS.....:Tension
~Ascii DEPT PRES TEMP CCL SPD TEN
~1.900 15.353 6.237 -12995.000 0.084 0.000
~2.000 15.376 6.240 -12487.735 0.186 0.000
~2.100 15.341 6.242 -3677.667 0.246 0.000
~2.200 15.354 6.243 -1270.013 0.282 0.000
~2.300 15.408 6.242 -1116.301 0.314 0.000
~2.400 15.427 6.242 -7005.424 0.350 0.000
~2.500 15.431 6.243 13206.031 0.390 0.000
~2.600 15.491 6.244 77494.146 0.429 0.000
~2.700 15.429 6.245 1845.976 0.491 0.000
~2.800 15.390 6.246 -28467.707 0.567 0.000
~2.900 15.382 6.247 -1082.951 0.662 0.000
```

4.5 Export Time Pass to LAS

Starting with version 3.9.3, the DataCan Download Software can export gauge data to a time index LAS file.

To export data, first use the boundary lines to select the portion of the graph to export (or leave the boundary lines off if you wish to export the whole graph).



Then right click on the graph and select "Export to LAS (Time Index)". You'll be prompted to save your .las file to disk. The resulting .LAS file will look something like this:

```

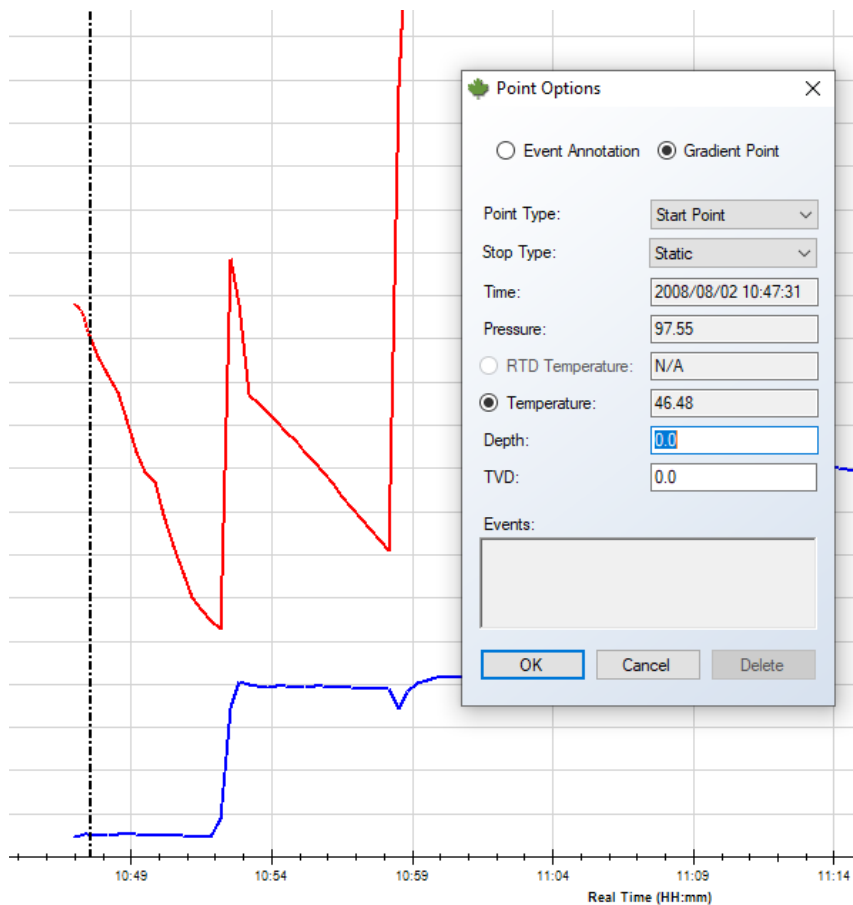
~VERSION INFORMATION
VERS. 3.0 : CWLS LOG ASCII STANDARD -VERSION 3.0
WRAP. NO : ONE LINE PER TIME STEP
DLM . SPACE : DELIMITING CHARACTER (SPACE TAB OR COMMA)
~Well Information
#MNEM.UNIT DATA DESCRIPTION
#-----
SIRT .S 723.900 :First Index Value
STOP .S 772.300 :Last Index Value
STEP .S 0.100 :Step
NULL . 0 :Null Value
COMP . :Company
WELL . :Well
FLD . :Field
LOC . :Location
STAT . :State
CTRY . :Country
API . :API Number
SRVC . :Service company
DATE . 04/24/2015 :Service Date 'DD/MM/YYYY'
LATI . :Latitude
LONG . :Longitude
GDAT . :Longitude
~Curve
#MNEM.UNIT LOG CODES CURVE DESCRIPTION
#-----
ETIM .S :Elapsed Time
PRES .PSIA :Pressure
ITMP .DEGC :Internal Temperature
TEMP .DEGC :External RTD Temperature
CCL .CPS :CCL
SPD .FT/S :Speed
TEN .LBS :Tension
~Ascii ETIM PRES ITMP TEMP CCL SPD TEN
723.900 95.201 12.890 6.441 -429.000 0.019 0.000
724.000 95.249 12.889 6.442 93.000 0.019 0.000
724.100 95.343 12.884 6.441 1.000 0.019 0.000
724.200 95.164 12.877 6.442 -81.000 0.019 0.000
724.300 95.250 12.876 6.443 58.000 0.019 0.000
724.400 95.288 12.872 6.444 7.000 0.019 0.000
724.500 95.265 12.870 6.444 3.000 0.019 0.000
724.600 95.310 12.867 6.444 -100.000 0.019 0.000
724.700 95.196 12.863 6.445 -115.000 0.019 0.000
724.800 95.302 12.860 6.444 -108.000 0.019 0.000

```

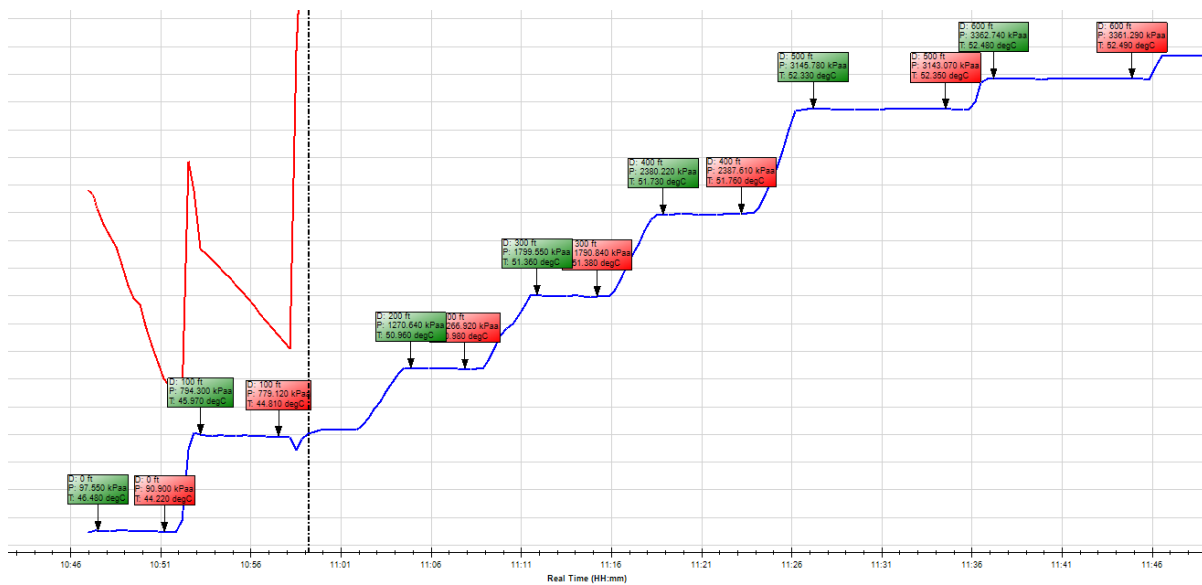
4.6 Estimated Depth

This is done similar to plotting gradient points. The software will create a depth line between each point the user enters a depth into the gradient depth. If the depth stops changing for any length of time (for example, a gradient stop) it is recommended to use start and stop gradient points so that the software does not keep changing the depth during a stop.

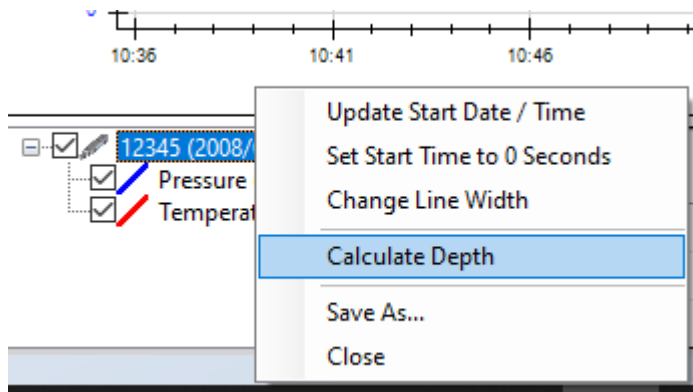
- 1) Load your data into the graph.
- 2) On the pressure line, double-click each point you would like to set a depth.



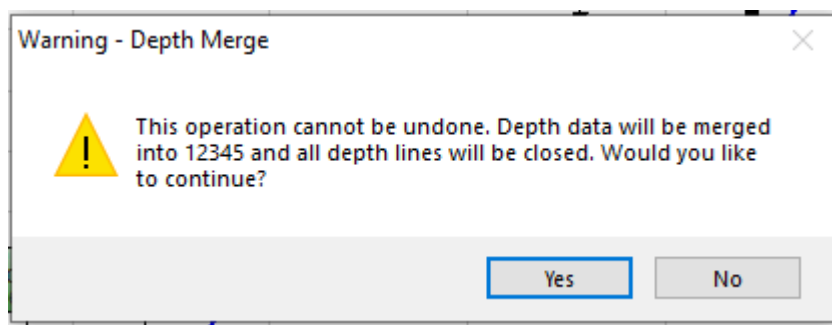
- 3) Choose the **Gradient Point** radio button and **Start Point** from the **Point Type** drop down.
- 4) Enter the depth and press the **OK** button.
- 5) Repeat steps 2 through 5 (using **Start Point** and **End Point** for each static step) until all of the depths have been entered.



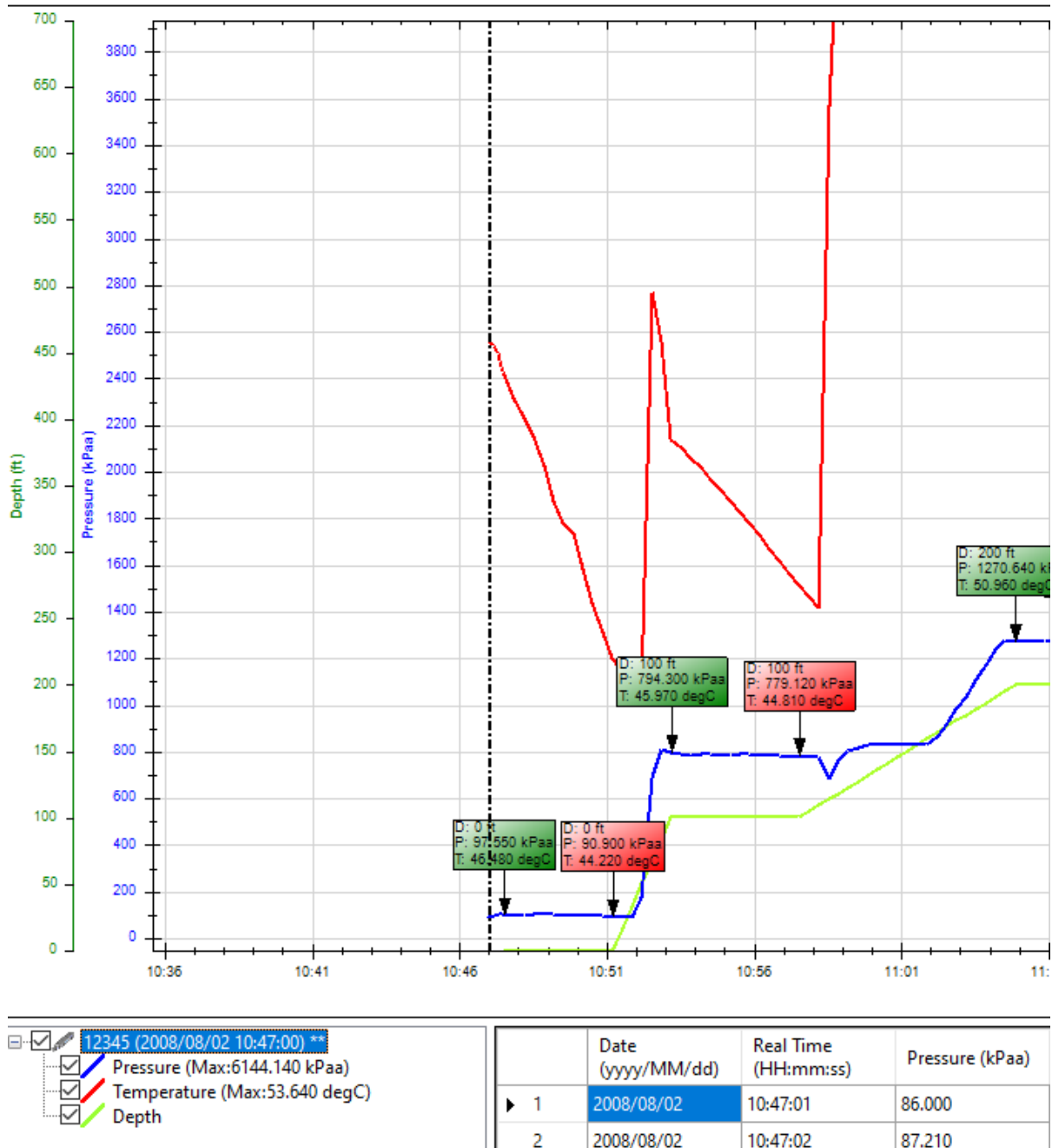
- 6) In the legend at the bottom-left of the graph, right click on the serial number of the gauge being processed. Select **Calculate Depth** from the menu.



- 7) Select **Yes** when the warning appears.



- 8) The depth line now appears.



9) Make sure to save your data.

10) Proceed to section [Section 4.3 - Depth Passes](#) to create depth passes.