

# Processing **water temperature (only)** in HOBOWare (no air temperature)

Pendant	Water Temp Pro v2	Tidbit v2
		

Note: you do not need HOBOWare Pro to process temperature data; you can use the free version, which can be downloaded online –  
<http://www.onsetcomp.com/hoboware-free-download>

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# Steps

- Set up your **default settings** (see 'HOBOWare\_DefaultSettings' file); you should only have to do this once
- **Open the water sensor file** in HOBOWare
- **Plot** the data
- **Change the Temp series name** to 'Water Temp'
- **Export as .csv**

# File naming scheme



If you're going to use the ContDataQC R package, you need to use the following file naming scheme:

## **SiteID\_SensorType\_StartDate\_EndDate**

- Site ID (no spaces or underscores) = BB01CC
- Data Type (Water/Air/AW) (AW = Air + Water sensor data in same file)
- Date, Start (YYYYMMDD)
- Date, End (YYYYMMDD)
- Each element separated by underscore (“\_”).

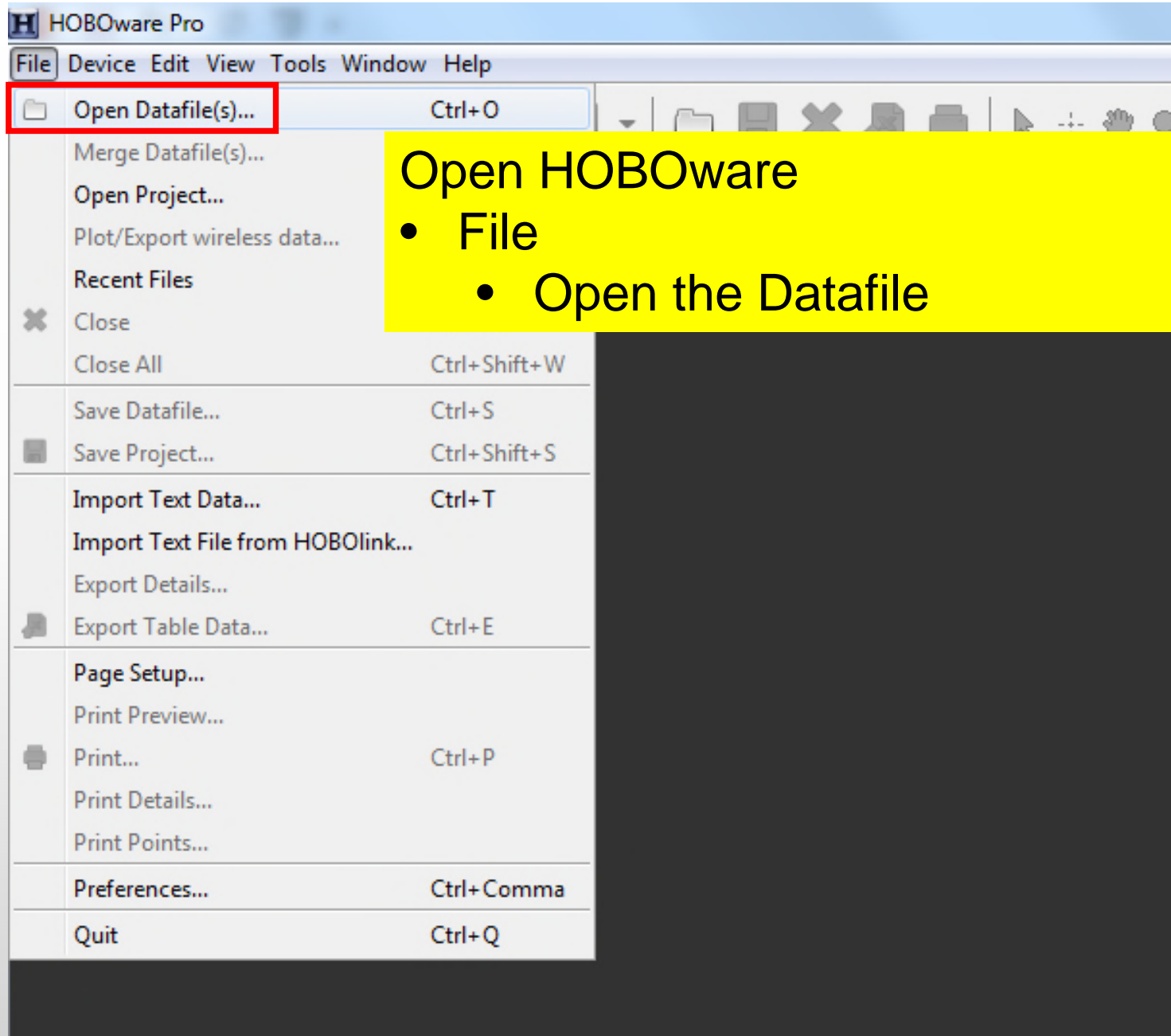
Example:

- **BB01CC\_Water\_20131022\_20140428.csv**

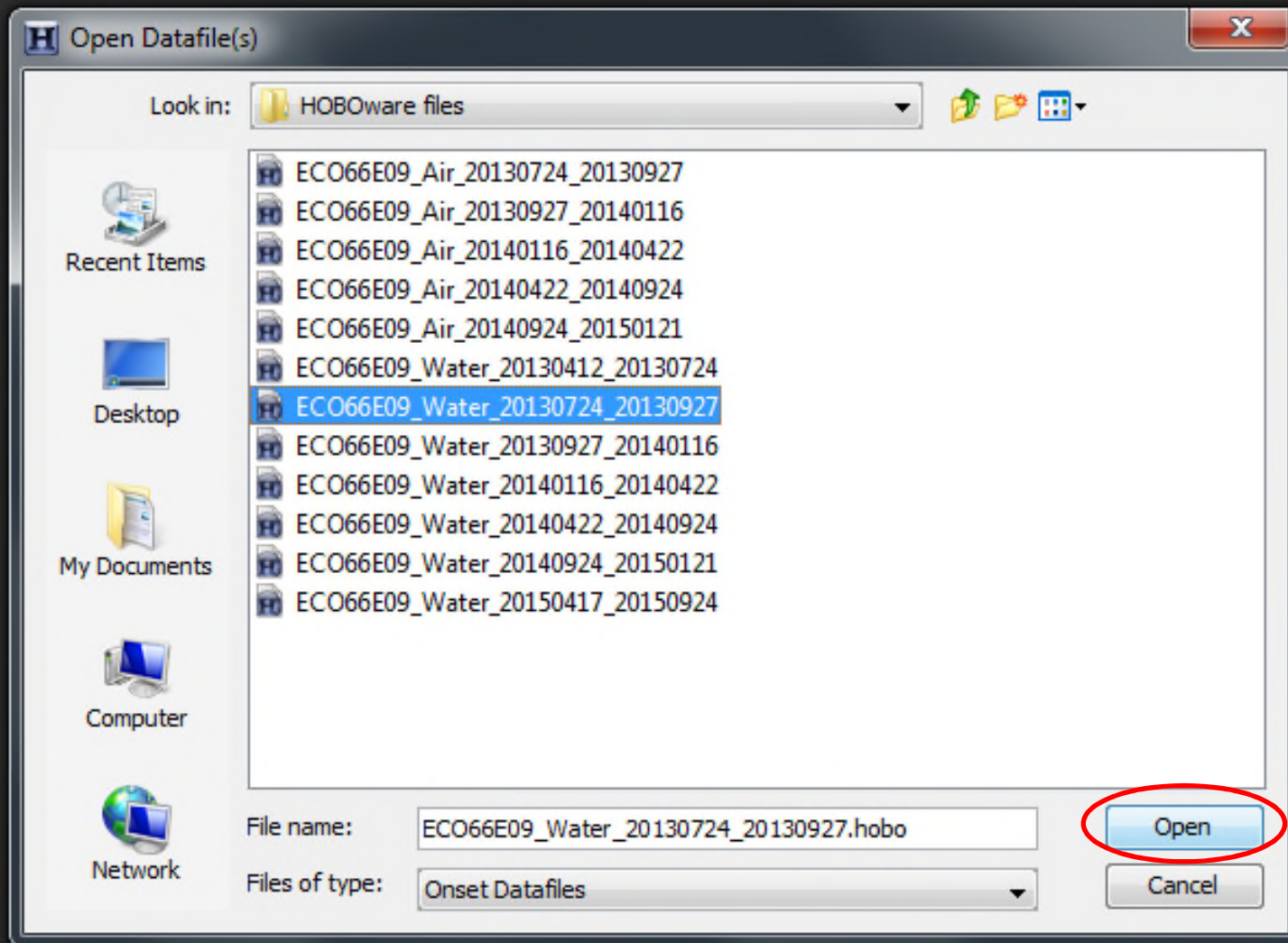
 BB01CC_Water_20131022_20140428.csv	2017-08-23 20:08	Microsoft Excel Comma Separated Values File
 BB01CC_Water_20140428_20140924.csv	2017-08-23 20:15	Microsoft Excel Comma Separated Values File

# Other tips

- **StationIDs** – after you come up with a name, stick with it!
- Consider setting up a **folder for each long-term monitoring site**.
- **Within each site folder**, consider setting up the folder structure described in the '**DataManagementTips**' PowerPoint.



# 1. Open the HOBOWare Datafile



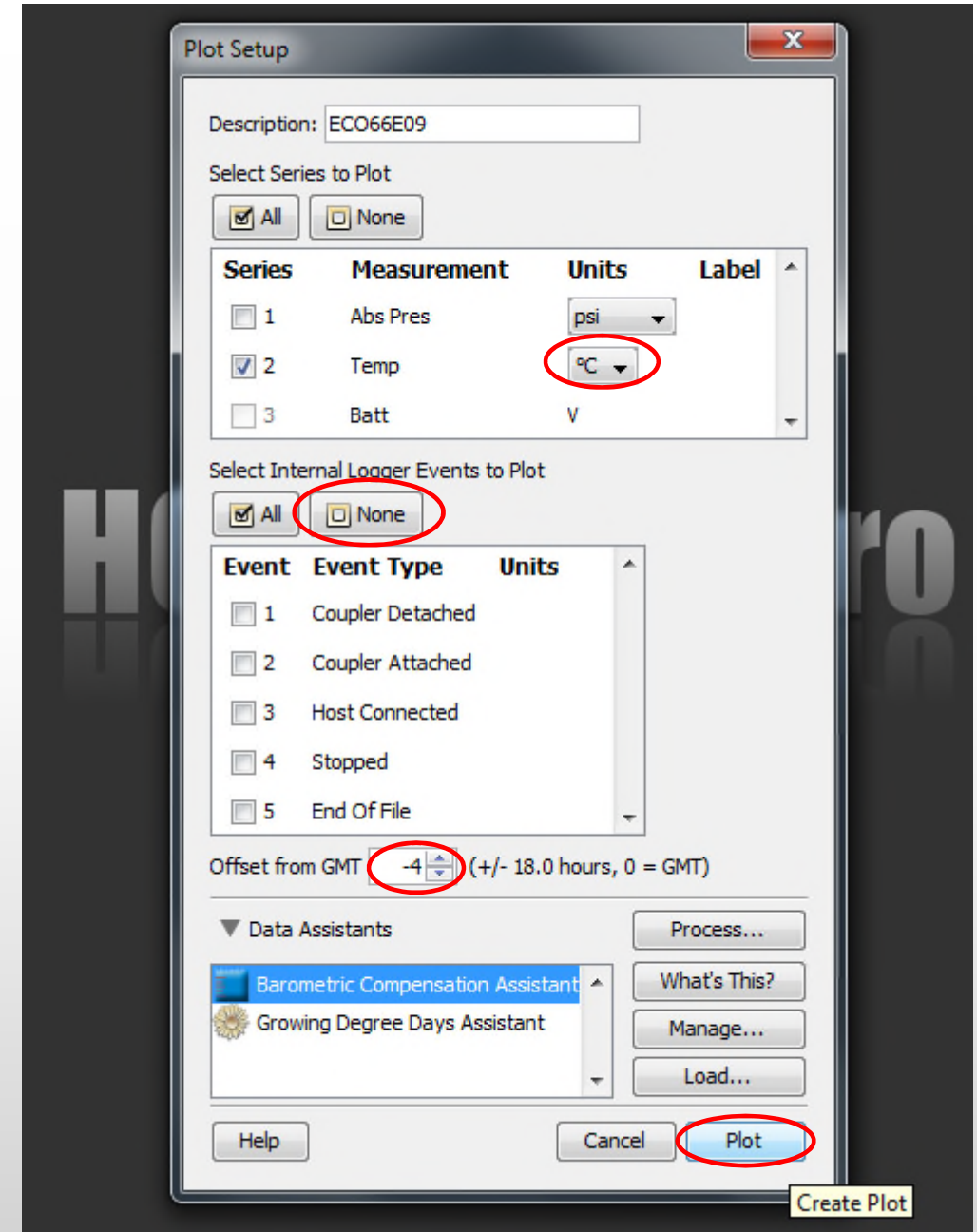
**Browse/select the appropriate water sensor file**

**Click 'Open'**

# Open the water sensor file in HOBOWare

**Tip:** if you want to use the ContDataQC R package, you can reduce the data preparation time by making the following entries –

- Description: enter **SiteID**
- Selecting **°C** for **units**
- Clicking '**None**' under Internal Logger Events to Plot
- Making sure the time offset from GMT is appropriate for the site
- Click '**Plot**'



# Plot Setup

The screenshot shows the 'Plot Setup' dialog box with several red boxes highlighting specific fields and buttons. Red arrows point from yellow text boxes to these highlighted areas. The dialog includes sections for Description, Series selection, Internal Logger Events, Time Offset, and Data Assistants.

**Description:** ECO66E09

**Select Series to Plot**

Series	Measurement	Units	Label
<input type="checkbox"/> 1	Abs Pres	psi	
<input checked="" type="checkbox"/> 2	Temp	°C	
<input type="checkbox"/> 3	Batt	V	

**Select Internal Logger Events to Plot**

Event	Event Type	Units
<input type="checkbox"/> 1	Coupler Detached	
<input type="checkbox"/> 2	Coupler Attached	
<input type="checkbox"/> 3	Host Connected	
<input type="checkbox"/> 4	Stopped	
<input type="checkbox"/> 5	End Of File	

**Offset from GMT** -4 (+/- 18.0 hours, 0 = GMT)

**Data Assistants**

- Barometric Compensation Assistant
- Growing Degree Days Assistant

**Buttons:** Help, Cancel, Plot, Process..., What's This?, Manage..., Load...

**Create Plot**

Description: **StationID** (in this example, ECOE09)

Temperature units °C

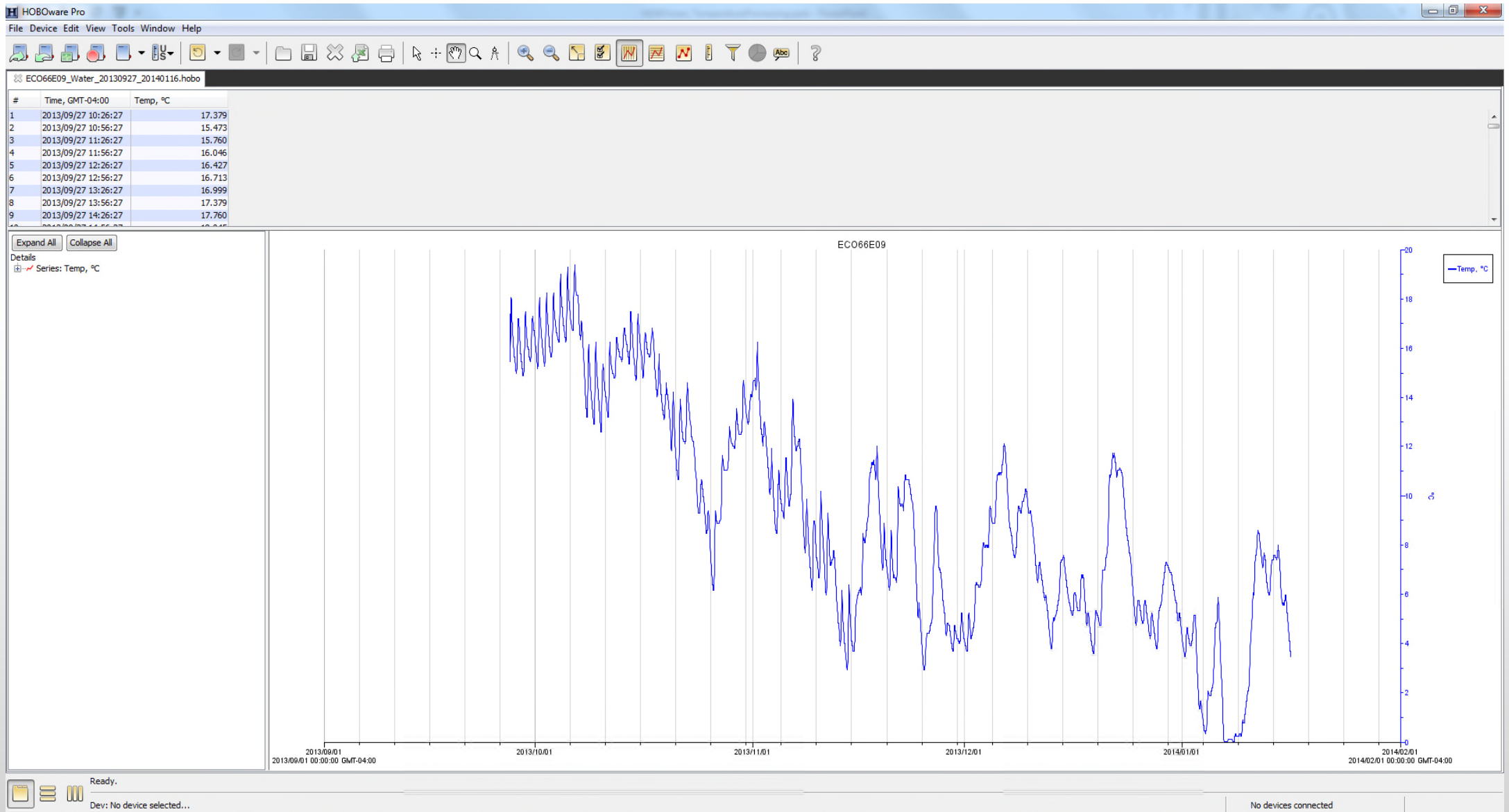
Click '**None**' (otherwise you'll get unwanted 'logged' entries in the .csv file that you'll need to delete later)

If the time zone for the site is incorrect, you can change that here (when you open the file, it goes to the default, which is the time zone of the computer that launched the sensor)

Click '**Plot**'



# A time series plot will then appear



# Change the Temp series name to 'Water Temp'

The screenshot shows the HOBOWare Pro interface. The 'Edit' menu is open, with 'Graph Properties' highlighted. A red arrow points from this menu item to the 'Series Properties' dialog box. In the dialog, the 'Description' field is set to 'Water Temp'. Another red arrow points from the 'Series: Temp, °C' entry in the 'Details' pane to the 'Description' field. A third red arrow points from the 'Done' button in the dialog to the 'Done' button in the 'Series Properties' dialog. A yellow box contains the following steps:

1. Left click on Series: Temp
2. Edit – Graph Properties
3. Enter 'Water Temp'
4. Click 'Done'

The 'Series Properties' dialog box has the following fields and options:

- Description: Water Temp
- Unit: °C
- Lines: ☒ Connect Points, Style: Solid, Width: 1, ☐ Connect As Steps
- Points: ☐ Mark Points, Marker: Rectangle, Point Size: 3
- Alarms: Max: 50.000, Min: -20.000, Enable Alarms: ☐ High Alarm, ☐ Low Alarm
- Misc: Time Axis: Time Axis, Value Axis: °C, Color: [Blue] Choose...

Buttons: Cancel, Apply, Done

# Export the .csv file

The screenshot shows the HOBOWare Pro software interface. The 'File' menu is open, and the 'Export Table Data...' option is highlighted with a red rectangle. A yellow box with the following list is overlaid on the menu:

- File
  - Export Table Data

The 'Export' dialog box is also open, showing a table with the following data:

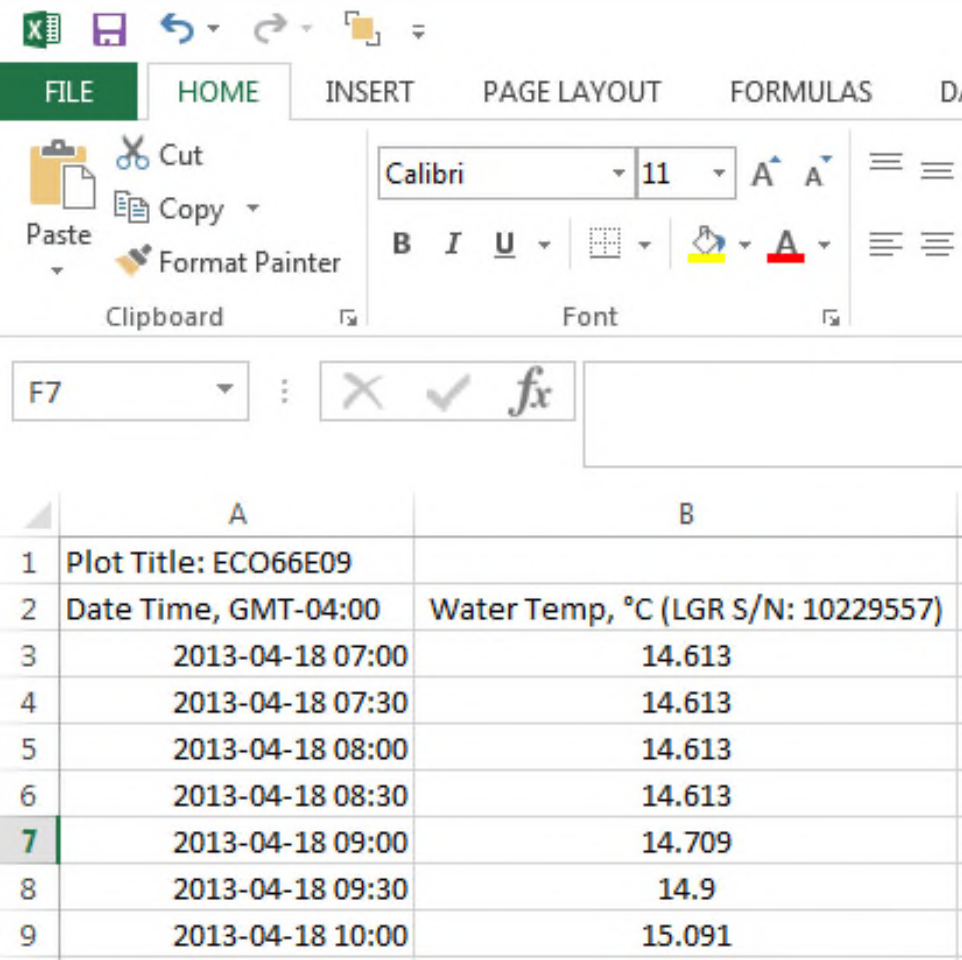
Select	Measurement	Units	S/N	Label
<input checked="" type="checkbox"/>	Water Temp	°C	10229558	
<input checked="" type="checkbox"/>	Air Temp	°C	10229565	

A yellow box with the following text is overlaid on the dialog:

Select Water Temp  
Click 'Export'

This is a close-up of the 'Export' dialog box. The 'All' radio button is selected. The table shows 'Water Temp' and 'Air Temp' measurements. The 'Export...' button at the bottom right is circled in red.

Save the .csv file in the appropriate site folder.  
If you followed these instructions, the file should look like this.



The screenshot shows the Microsoft Excel interface with the 'HOME' tab selected. The ribbon includes 'FILE', 'HOME', 'INSERT', 'PAGE LAYOUT', 'FORMULAS', and 'DATA'. The 'Clipboard' group shows 'Cut', 'Copy', 'Paste', and 'Format Painter'. The 'Font' group shows 'Calibri', '11', 'B', 'I', 'U', and color options. The formula bar shows 'F7' and a function icon. The spreadsheet has two columns, A and B, with the following data:

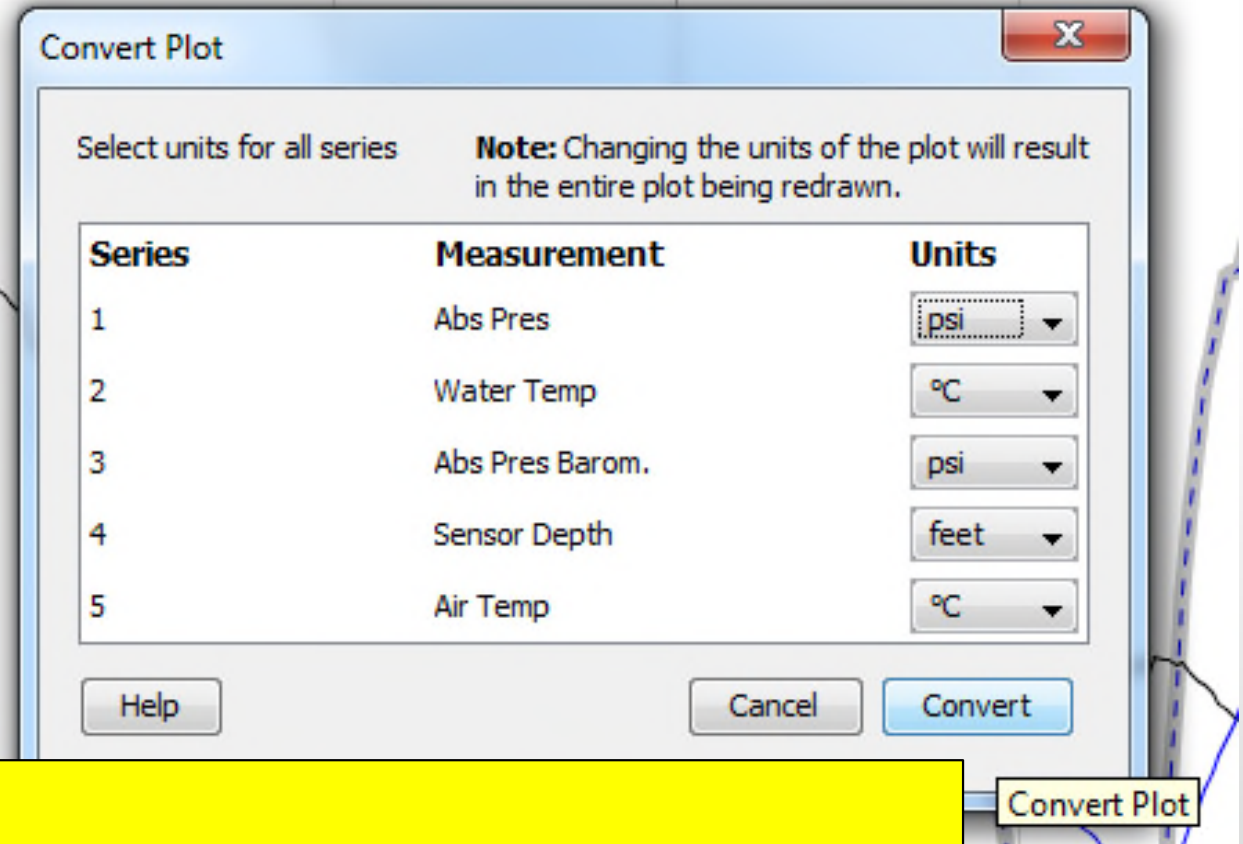
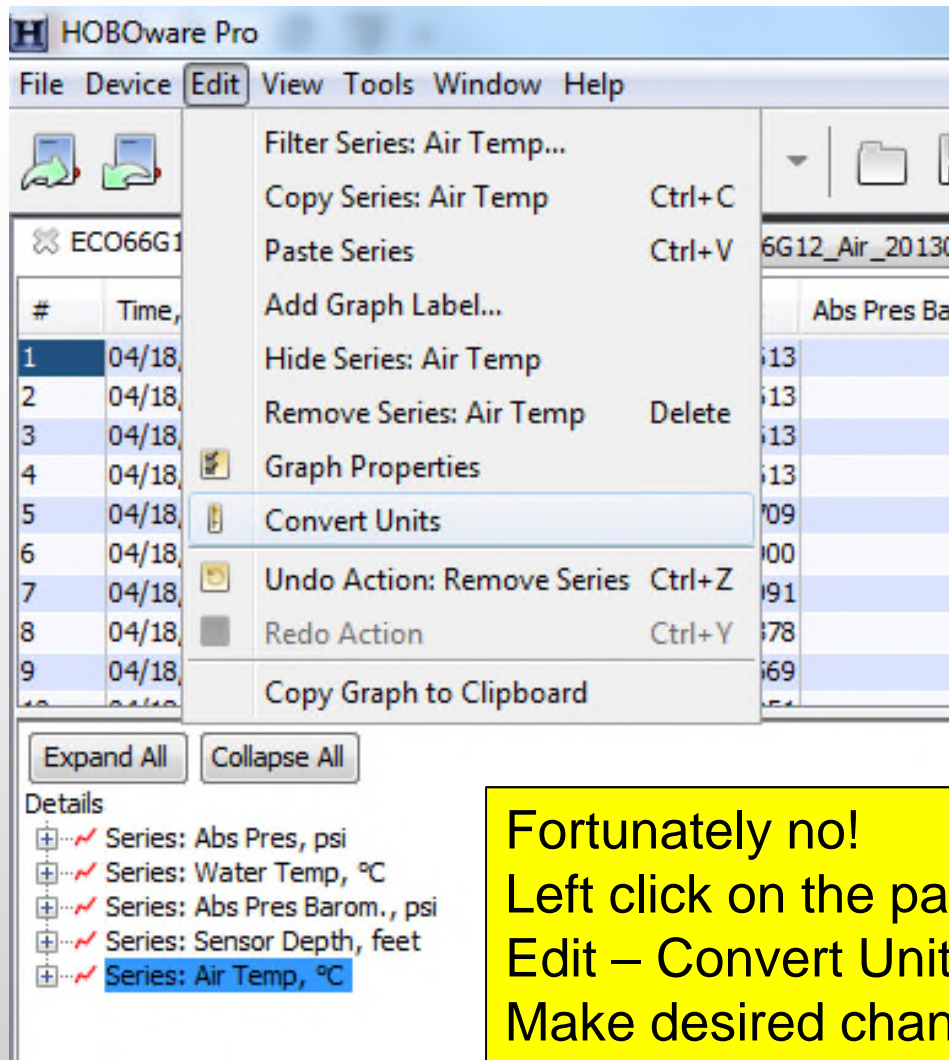
	A	B
1	Plot Title: ECO66E09	
2	Date Time, GMT-04:00	Water Temp, °C (LGR S/N: 10229557)
3	2013-04-18 07:00	14.613
4	2013-04-18 07:30	14.613
5	2013-04-18 08:00	14.613
6	2013-04-18 08:30	14.613
7	2013-04-18 09:00	14.709
8	2013-04-18 09:30	14.9
9	2013-04-18 10:00	15.091

For instructions on how to format the file for the ContDataQC R package, see the 'Formatting\_ContDataQCR' file.

Extra tips



What if you forget to convert temperature to °C during the initial upload? Do you have to go back and do this all over again?



Fortunately no!  
Left click on the parameter you want to change the units on  
Edit – Convert Units  
Make desired changes

What if I forgot to remove sensor type (air/water) from the Plot Title?  
(e.g., 'ECO66G12\_Water' instead of 'ECO66G12')  
You can change it by doing this...

Click this arrow

The screenshot shows the HOBOWare Pro interface. The main window displays a data table with columns: #, Time, GMT-04:00, Abs Pres, psi, Water Temp, °C, Abs Pres Barom., psi, Sensor Depth, feet, and Air Temp, °C. The data is for station ECO66G12. A 'Title Properties' dialog box is open, showing the 'Name' field set to 'ECO66G12'. The 'Location' is set to 'Top'. The 'Font' is set to 'Dialog', size '12', and style 'Plain'. The 'Done' button is highlighted.

#	Time, GMT-04:00	Abs Pres, psi	Water Temp, °C	Abs Pres Barom., psi	Sensor Depth, feet	Air Temp, °C
1	04/18/13 08:00:00	14.6710	14.613	14.2005	1.086	14.421
2	04/18/13 08:30:00	14.6710	14.613	14.1998	1.088	14.709
3	04/18/13 09:00:00	14.6710	14.613	14.2017	1.084	15.473
4	04/18/13 09:30:00	14.6733	14.613	14.2046	1.082	16.427
5	04/18/13 10:00:00	14.6736	14.709	14.2051	1.082	17.379
6	04/18/13 10:30:00	14.6720	14.900	14.2027	1.084	17.760
7	04/18/13 11:00:00	14.6704	15.091			
8	04/18/13 11:30:00	14.6714	15.378			
9	04/18/13 12:00:00	14.6607	15.569			

Details

- Series: Abs Pres, psi
- Series: Water Temp, °C
- Series: Abs Pres Barom., psi
- Series: Sensor Depth, feet
- Series: Air Temp, °C

ECO66G12

Name: ECO66G12

Location

☒ Top

☐ Bottom

Font: Dialog 12 Plain

Cancel Apply Done

# Acknowledgements

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Additional materials are available on the RMN Sharepoint site and the Tetra Tech FTP site.