September 29, 2010

*Updated with notes

Steps for Processing CTDs using SeaBird software:

1. Start SBEDataProcessing-Win32 software

FIRST PROCESSING RUN

2. Click 'Run'
3. Select '1. Data Conversion'
4. Click 'OK'

In FILE SETUP MENU tab

5. Under Instrument configuration file, click 'Select'
6. Choose folder "R:/DWH_Data/<ship>/<cruise>/<data_collection>/<CTD>/station>/… until you get to a folder with a .con file and select that file
7. Under Input directory, click 'Select'
8. Choose .hex or .dat file (it should come up to the same folder chosen in step 6)
9. If it asks if you want the output directory to match, say No.
10. Under Output directory, click 'Select'
11. Choose folder

"R:/DWH_Working/Processed Data\CTD/<ship>/<cruise>/<station>"

Note: (If this folder structure does not exist, create it first)

In HEADER VIEW tab

12. If the Header indicates that a NMEA value was used, skip to step 14.
13. Mark down Latitude value in Header (e.g. 28 42.95 = 28.72)

Note; to convert from dd mm.ss to dd: (mm.ss/60 + dd = dd)

IN 'Data Setup' tab

14. Under 'Convert data from', select 'upcast and downcast'
15. Under 'Create file types', select 'create both data and bottle file'
16. Under 'Source of scan range data', select Bottle log (.bl) file
17. Click 'Select Output Variables' button
18. Select 'Temperature', 'ITS-90' (deg C), click 'Add'
19. Select 'Pressure, Digiquartz' (db) OR 'Pressure, Strain Gauge' (db), click 'Add'
20. Select 'Oxygen raw, SBE 43 [V]', click 'Add' (note to set hysteresis 'on')
21. Select and add each sensor that records any kind of fluorescence, click 'Add' on each
22. Select 'Voltage Channel', then '1', click 'Add'
23. Select 'Voltage Channel', then '2', click 'Add'
24. Select 'Voltage Channel', then '3', click 'Add'
25. Select 'Conductivity' (S/m), click 'Add'
26. Select 'Depth', 'Salt Water' (m), click 'Add'
27. Enter Latitude acquired in step 12

(note that after 1st setup program will retain variables, so in this case select depth from the variable name list and then select 'change' to enter the nw lat in dd)

28. Select ‘Salinity, Practical (PSU)’, click ‘Add’
29. Select ‘Density’ (density, Kg/m^3), click ‘Add’
30. Select ‘Sound Velocity’, ‘Chen-Millero’ (m/s), click ‘Add’
31. Select ‘Oxygen, SBE 43’ (mg/l), click ‘Add’ (note to set hysteresis and Tau ‘on’)
32. Select ‘Oxygen, SBE 43’ (ml/l), click ‘Add’
33. Click ‘OK’
34. Click ‘Start Process’

(Note: if you get a “Processing Stopped” message after clicking ‘Start Process,’ go back to Step 14 and select ‘downcast’ and then under ‘Create file types,’ select ‘create converted data (CNV) file only’ and then try to Process again. If the station has downcast only, skip to Step 59)

35. Click ‘Exit’
36. Do you want to save? Yes

SECOND PROCESSING STEP

37. Click ‘Run’
38. Select ‘8. Bottle Summary’

IN FILE SETUP TAB

39. Under Instrument configuration file, click ‘Select’
40. Choose folder “R:/DWH_Data/<ship>/<cruise>/<data_collection>/<CTD>/station>/… until you get to a folder with a .con file and select that file
41. Under Input directory, click ‘Select’
42. Choose R:\DWH_Working\Processed Data\CTD\<ship>\<cruise>\<station>\xxx.ros
43. It will ask you if you want the output directory to be the same. Say ‘Yes’

In DATA SETUP tab

44. Click ‘Select Averaged Variables’
45. Click ‘Select All’
46. Click ‘OK’
47. Click ‘Select Derived Variables’
48. Click ‘Expand All’
49. Add ‘Density, Kg/m^3’
50. Add ‘Oxygen Saturation, Weiss, ml/l’
51. Add ‘Oxygen Saturation, Weiss, mg/l’
52. Add ‘Potential Temperature, ITS-90, deg C’
53. Add ‘Salinity, Practical [PSU]’
54. Add ‘Sound Velocity, Chen-Millero, m/s’
55. Click ‘OK’
56. Click ‘Start Process’
57. Click ‘Exit’
58. Do you want to save? Yes

THIRD PROCESSING STEP

59. Click ‘Run’
60. Select ’11. Wild Edit’

IN FILE SETUP TAB

61. Under Input directory, click ‘Select’
62. Choose R:\DWH_Working\Processed Data\CTD\<ship>\<cruise>\<station>\xxx.cnv
63. It will ask you if you want the output directory to be the same. Say ‘Yes’
64. Insert ‘_edit’ before the extension in the output file name.

In data setup tab

65. Click ‘Select Wild Edit Variables’
66. Click ‘Clear All’
67. Check the boxes next to Temperature, Pressure and Salinity only.
68. Click ‘OK’
69. Confirm settings:

    Standard deviation for pass one: 2
    Standard deviation for pass two: 20
    Scans/block: 100
    Keep data within this distance of the mean: 0
    Exclude scans marked bad: yes (check)
70. Click ‘Start Process’
71. Click ‘Exit’
72. Do you want to save? Yes

FOURTH PROCESSING STEP

73. Click ‘Run’
74. Select ‘7. Bin Average’

In File SETUP tab

75. Under Input directory, click ‘Select’
76. Choose R:\DWH_Working\Processed Data\CTD\<ship>\<cruise>\<station>\xxx_edit.cnv
77. It will ask you if you want the output directory to be the same. Say ‘Yes’
78. Insert ‘_bin_avg_’ before the extension in the output file name.

IN DATA SETUP tab

79. Select bin type as Pressure, bin size as ‘1’ and ‘cast to process’ as ‘Downcast’
80. Click ‘Start Process’
81. Click ‘Exit’
82. Do you want to save? Yes

FIFTH PROCESSING STEP

83. Click ‘Run’
84. Select ’14. ASCII out’

IN FILE SETUP TAB

85. Under Input directory, click ‘Select’
86. The DWH_Working folder should be selected. Choose R:\DWH_Working\Processed Data\CTD\<ship>\<cruise>\<station>\xxx_edit_bin_avg.cnv

In data setup tab

87. Under label columns, Select “Top of file”
88. Click ‘Start Process’
89. Click ‘Exit’
90. Do you want to save? Yes

The CTD Processed directory folder for the station you are processing should have the following files when complete:

Station.cnv (on processed upcast and downcast files)
Station.ros
Station.btl
Station_edit.cnv
Station_edit_bin_avg.cnv
Station_edit_bin_avg.hdr
Station_edit_bin_avg.asc