Notes on Metabolism QA/QC, Denise Bruesewitz 02-17-2016

Langtjern 2013

\*Metadata notes from the files are “Langtjern .wtr files are corrected” and “PAR not measured directly calculated according to the manufacturer specifications for our instrument (http://clearskycalculator.com/model\_accuracyPPF.htm).”

**QA/QC overview**

Files generated:

DO concentration (‘Langtjern\_doobs.txt’)

Wind Speed (‘Langtjern\_wnd.txt’)

Temperature Profile (‘Langtjern\_wtr.txt’)

PAR (‘Langtjern\_par.txt’)

\*Data was downloaded from Couture & de Wit folder from Dropbox GLEON Catchment & Lake Metabolism Folder.

**METADATA**

*Langtjern DO sensor depth* = 1 m.

*atmPres* <- #average atmospheric pressure at local elevation, mmHg

*windHeight* <- #height above lake at which wind speed is meaured

*timeStep* <- 30 #number of minutes between DO measurements

*lat*<- #latitute of Langtjern

**DO file**

Column A header: dateTime

Column A format: YYYY-MM-DD h:mm

Right click in excel 🡪Format cells🡪custom🡪enter in the “Type:” box:

yyyy-mm-dd h:mm

Column B header: DO

Column B units: mg L-1

Graph the data points to see if there are any abnormalities or missing data.

Save the file as a tab-delimited file with LakeName\_YYYY\_DO.txt as the file name:

1. DO data provided for 1.0 m and 8.0 m. 8.0m data is excluded from QAQC
2. Data in 30 min intervals from 6/12/2013 to 11/25/2013
3. Data gap from 8/26/2013 8:00 to 8/27/2013 10:30
4. Besides above data gap, 20 NAs, most are single points, a few are 2 subsequent NAs
5. Range from 3.27 to 9.26 mg/L
6. Data becomes highly variable in mid-July, with some swings down to ~3 mg/L (no data removed), and becomes more variable again in November (although with higher minimum values).

**DO Saturation file**

No DO saturation file provided

**Wind speed file**

Column A header: dateTime

Column A format: YYYY-MM-DD h:mm

Right click in excel 🡪Format cells🡪custom🡪enter in the “Type:” box:

yyyy-mm-dd h:mm

Column B header: windSpeed

Column B units: m s-1

Graph and look for negative numbers or unrealistically high numbers

1. Wind speed data presented in hourly intervals from 6/12/13 to 11/25/13

2. NA values added for the half hour intervals

3. Wind speeds ranged from 0 to 5.81 m/s. There are 34 0 values and 11 NA values (excluding the need for half-hour marker NAs). There are 9 zeros in a row on 10/22 and 4 zeros in a row on 11/5 and ~20 zeros in a row in the evening between 11/9 and 11/10

**Wind Direction file**

Wind direction data not provided

**PAR file**

Column A header: dateTime

Column A format: YYYY-MM-DD h:mm

Right click in excel 🡪Format cells🡪custom🡪enter in the “Type:” box:

yyyy-mm-dd h:mm

Column B header: PAR

Column B units: uE m-2 s-1

Minimum value is 0.48, Maximum is 1785.39

No outliers removed

Many missing dateTime stamps for 30 minute interval data

**Thermistor data file**

Column A header: dateTime

Column A format: YYYY-MM-DD h:mm

Right click in excel 🡪Format cells🡪custom🡪enter in the “Type:” box:

yyyy-mm-dd h:mm

Column headers: Each temp sensor should have its own column named temp0.0 or temp4.0 or temp10.0

Temp0.5, temp1.0, temp1.5, temp2.0, temp3.0, temp4.0 temp6.0 temp8.0

Temp0.5 range 2.42-24.43

Temp1.0 range 2.72-22.75

Temp1.5 range 2.89-32.19

Temp 2.0 range 2.89-29.39

Temp 3.0 range 2.91-14.42

Temp4.0 range 2.93-11.03

Temp6.0 range 3.04-7.98

Temp 8.0 range 3.08-7.18

Column B-I units: °C

Check the min and max of each column to make sure they are in good range

Graph the data points to see if there are any abnormalities or missing data.



\*I Removed temp1.5 reading of 32.19 on 7/10/2013 9:30- replaced with NA. far warmer than all other temps at this time. There are a number of days with 1.5 m readings around 20 degrees that are higher than the 0.5 and 1.0 readings. I did not remove these.

\* I removed temp2.0 readings of 27.08 and 29.39 on 7/10/13 at 6:30 and 7:30 respectively.

New profile:

