Notes on Metabolism QA/QC

**QA/QC overview**

Example files generated:

DO concentration (‘Sunapee\_2007\_DO.txt’)

Wind Speed (‘Sunapee\_2007\_windSpeed.txt’)

Sensor Temperature (‘Sunapee\_2007\_sensorTemp.txt’)

Temperature Profile (‘Sunapee\_2007\_tempProfile.txt’)

PAR (‘Sunapee\_2007\_PAR.txt’)

\*Data was downloaded from VADER on 29Oct2012 and used for these files.

DO saturation (‘Sunapee\_2007\_DOSaturation.txt’)

Wind direction (‘Sunapee\_2007\_windDir.txt’)

Air Temperature (‘Sunapee\_2007\_airTemp.txt’)

**METADATA**

*Sunapee DO sensor depth* = 1 m.

*atmPres* <- 715.9 #average atmospheric pressure at local elevation, mmHg

*windHeight* <- 1.7 #height above lake at which wind speed is meaured

*timeStep* <- 10 #number of minutes between DO measurements

*lat*<-43.3864 #latitute of lake Sunapee

**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:

e.g. ‘Sunapee\_2007\_DO.txt’

**DO Saturation file**

Max:131, Min: 98

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: DOsaturation

Column B units: %

Graphed 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:

e.g. ‘Sunapee\_2007\_DOSaturation.txt’

**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

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

e.g. ‘Sunapee\_2007\_windSpeed.txt’

**Wind Direction 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: windDir

Column B units: degrees

All are above 0 or below 360

This indicates that wind is coming out of this direction.

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\_windSpeed.txt as the file name:

e.g. ‘Sunapee\_2007\_windDir.txt’

**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

\*\*Check the min (make sure all are above 0) – if any are <0, then set them equal to 0.

Set any values below 2 = 0 using this formula: =IF(B2<2,0,B2)

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

e.g. ‘Sunapee\_2011\_PAR.txt’

**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

e.g. Sunapee has 10 sensors on the change. The data file has 10 columns with the following headers:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| temp0.0 | | temp0.5 | | temp1.0 | | temp1.5 | | temp2.0 | | temp2.5 | | temp3.0 | | temp3.5 | | temp4.0 | |
| temp5.0 | temp6.0 | | temp7.0 | | temp8.0 | | temp9.0 | | temp10.0 | | temp11.0 | | temp12.0 | | temp13.0 | | temp14.0 | |

Replace values such as -6999 with NA’s using the following formula:

=IF(B2=-6999,"NA",B2)

Column B 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.

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

e.g. ‘Sunapee\_2007\_tempProfile.txt’

**Sensor temp data file**

This is just the temperature at the DO sensor and is independent from the thermistor data.

Max: 24.56, min=0.93

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: sensorTemp

Column B 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.

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

e.g. ‘Sunapee\_2011\_sensorTemp.txt’

**Air temperature data file**

This is just the air temperature met station

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: airTemp

Column B units: °C

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

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

e.g. ‘Sunapee\_2007\_airTemp.txt’