**Fixing the wet/dry issue for stations that report**

**measured CO2 as wet (e.g. PAP)**

Conversion of CO2 for fixed stations requires the following values:

* The measured CO2 (this is xCO2)
* Equilibrator pressure
* Equilibrator temperature
* Sea surface temperature (aka Intake temperature)
* Salinity

Equilibrator temperature is assumed to be the same as SST, so we already create a duplicate column for that.

If the data has an internal pressure sensor, use that as the Equilibrator Pressure in QuinCamilla. If not, create a new column and fix it at 1000. Use that for the equilibrator pressure.

If we don’t have salinity, make a column fixed at 35. QuinCe needs it, but it isn’t required for the fCO2 calculation here.

When you export the data from QuinCamilla, run the following equations:

For xCO2 to pCO2:

pCO2 = (xCO2 \* Eqp) / 1013.25

For pCO2 to fCO2:

kelvin = SST + 273.15;

B = -1636.75 + 12.0408 \* kelvin -0.0327957 \*

Math.pow(kelvin, 2) + (3.16528 \* 1e-5) \*

Math.pow(kelvin, 3);

delta = 57.7 - 0.118 \* kelvin;

fCO2 = pCO2 \*

Math.exp(((B + 2 \* (delta \* 1e-6)) \* (1013.25 \* 1e-6)) / (8.314472 \* kelvin));

This will give the final fCO2 value, since there is no conversion needed back to SST (since we use the same value for EqT).

Math.pow (kelvin, 2) = kelvin squared