**Quality Assurance Quality Control Protocol for Nutrients: NH4N, NO3N, and SRP**

1. Open AP2\_NO3N\_Processing\_Template or AP2\_NH4N\_SRP\_Processing\_Template (found in 2\_Incremental folder)
2. File, save as: LTREB\_Analyte\_AP2\_ YYYY\_MM\_DD\_PROCESS
3. Open sample table and results file from run you are processing (file names should appear the same except for different file types)
4. Enter Run Name, Run Date, Operator at the top of Results and Sample ID tab.
5. Copy and paste ALL information from results file (make sure you line up columns correctly).
6. Copy sample date, sample site, and sample replicate information from sample table and paste beginning at position 1:25.
7. Move to next tab- Std Curve Construction
8. Copy calibrant concentrations (note calibrant concentrations not always the same for each run)

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| --- | --- | --- | --- |
| Calibrant # | NH4N (mg/L) | SRP (mg/L) | NO3N (mg/L) |
| C1 | 0.001 | 0.001 | 0.001 |
| C2 | 0.005 | 0.005 | 0.005 |
| C3 | 0.01 | 0.01 | 0.01 |
| C4 | 0.05 | 0.05 | 0.05 |
| C5 | 0.1 | 0.1 | 0.1 |
| C6 | 0.2 | 0.2 | 0.5 |

1. Copy calibrant peak heights from results file (use corrected heights)
2. Run linear fit- go to Data tab in excel, click on data analysis, select regression- X=peak height (corrected); Y=concentrations paste regression information starting at cell U8.
3. Copy and paste intercept and slope information for all analytes.
4. In column Linear Fit Std Conc write linear equation using intercept and slope information from regression built. Calculate % error.
5. Run quadratic fit- select All data non-linear fit graph, select data, X=corrected peak height; Y= concentration
6. Graph will create quadratic equation; copy and paste intercept, X coefficient, and X2 coefficient.
7. Write quadratic equation using intercept, X coefficient, and X2 coefficient information. Calculate % error.
8. Run split curve- select low range curve graph, select data X=corrected peak height; Y= concentration. Low curve calibrant C1-C4. High curve calibrant C4-C6.
9. Copy and paste intercept, X coefficient, and X2 coefficient. Calculate % error.
10. Move to next tab- Apply Std Curve
11. Copy information from first tab starting at position 1:25.
12. Sort data- custom sort- sort by corr ht smallest to largest, apply low end split curve to concentrations through 0.05 mg/L, apply high end split curve to concentrations over 0.05 mg/L.
13. Move to next tab- Final results
14. Copy sample date, site and replicate information. Copy curve fit results.
15. Create new file- copy and paste all information on Final Results tab. Name file: LTREB\_Analyte\_AP2\_ YYYY\_MM\_DD\_FINAL. Store process file in 2\_Incremental and final file in 3\_Output