



Exeter Elemental Analyzer Quality Control Analysis
Updated: Jan. 17, 2013

Analytes: Total particulate carbon, Total particulate nitrogen, and Total sulfur

DEFINITIONS:

Accuracy: Based on analysis of known standards.

Coefficient of variation (CV): Also known as the relative standard deviation, this value is the standard deviation of a series of measurements divided by the mean and expressed as a percentage. The value reported is the pooled CV over all detection ranges.

REPORTED VALUES:

Values reported in the tables below are those determined by the S-LAB (n=5 for all standard analyses). These values have been determined using a series of solid standards including cystine ((SCH₂CH(NH₂)CO₂H)₂; CAS #56-89-3), glycine ((NH₂CH₂COOH); CAS #56-40-6), and NIST marine sediment reference materials MESS-3 and 1941b (www.nist.gov).

Total Carbon

<u>Standard</u>	<u>Cystine</u>	<u>Glycine</u>	<u>NIST Mess</u>	<u>NIST 1941b</u>
wt % carbon	29.99	31.99	2.99	3.3
S-LAB wt%	30.15±0.10	32.30±0.05	2.77±0.02	3.12±0.08
Accuracy	0.54%	1.0%	7.3%	5.4%
CV	0.35%	0.1%	0.8%	2.4%

Total Nitrogen

<u>Standard</u>	<u>Cystine</u>	<u>Glycine</u>
wt % carbon	11.66	18.66
S-LAB wt%	11.60±0.05	18.66±0.03
Accuracy	0.5%	0.01%
CV	0.4%	0.2%

Total Sulfur: *In progress*