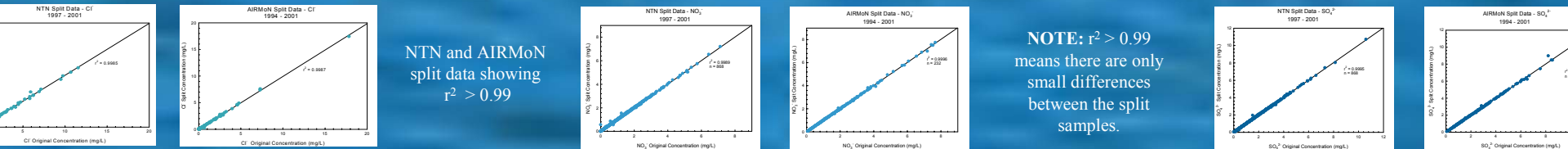


Splits are prepared every 50 samples, are analyzed about 200 samples after the originals, and are blind to the analysts. They serve as a measure of sample precision for the NTN and AIRMoN samples.

Acknowledgments: We acknowledge Pam Bede for administrative support and set-up.

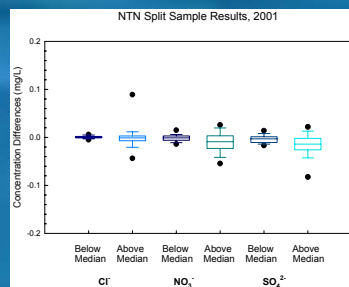
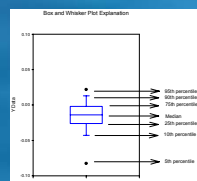
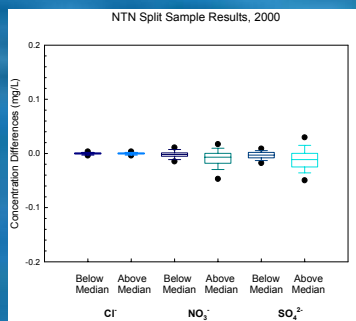
Original vs. Split Data for NTN (5 years) and AIRMoN (8 years)



NTN and AIRMoN split data showing  $r^2 > 0.99$

NOTE:  $r^2 > 0.99$  means there are only small differences between the split samples.

The split sample data are summarized annually in the CAL QA report. Previous summaries include box and whisker plots of paired differences for values below and above the median. Standard deviations estimated from paired measurements and sigmas are also reported.



Standard Deviation Estimated from NADP/NTN Precipitation Samples, 2000

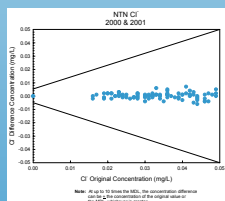
Parameter	Year	Standard Deviation Estimated from Paired Measurements <sup>a</sup> (mg/L)		
		Low	High	Total
Cl <sup>-</sup>	2000	0.002	0.062	0.044
	2001	0.002	0.038	0.027
NO <sub>3</sub> <sup>-</sup>	2000	0.039	0.016	0.030
	2001	0.014	0.027	0.021
SO <sub>4</sub> <sup>2-</sup>	2000	0.007	0.019	0.014
	2001	0.007	0.037	0.027

Notes: MAD is Median Absolute Deviation. <sup>a</sup>The standard deviation estimated from paired measurements is:

$$s = \sqrt{\frac{\sum d^2}{2k}}$$

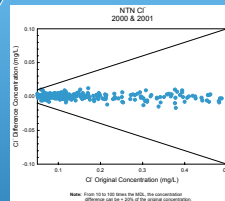
where:  $d$  = difference of duplicate measurements  
 $k$  = number of sets of duplicate measurements

Values up to 10 x MDL



A different way to represent split differences is by graphing allowable limits as stated in the CAL Quality Assurance Plan.

Values 10 to 100 x MDL



Method Detection Limits (MDL)

Ion	MDL (mg/L)
Cl <sup>-</sup>	0.005
NO <sub>3</sub> <sup>-</sup>	0.015
SO <sub>4</sub> <sup>2-</sup>	0.015

Values over 100 x MDL

