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Nitrate_plus_Nitrite: Bottle

Precision statement for replicate samples drawn from a single Niskin bottle:

The pooled standard deviation for Nitrate_plus_Nitrite: Bottle for the range 1.3 to 46.9 $\mu\text{mol/l}$ was 0.12, $k = 20$ (0 outlier removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples (S_p) was calculated by:

$$S_p = \text{SQRT}\{\text{sum}(d^2)/2k\}$$

where k is the number of pairs and d is the difference between pairs.

Accuracy of the stock standard batch was determined by using commercially available standards from WAKO Chemicals (Sagami Chemical Company of Japan).

The values were within 0.54 % of the 20 $\mu\text{mol/l}$ Nitrate Standard.

Feb 23, 2012 Nitrate stock standard solution was used for this cruise analyses.

Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Nitrate 1 $\mu\text{mol/l}$	Nitrate 2 $\mu\text{mol/l}$	Rejected yes / no	Comment
3	19	P2	10.4	9.6	9.8		
5	22	P2	101.6	35.4	35.5		
8	49	P4	10.8	1.3	1.3		
10	79	P4	175.6	31.7	31.7		
10	72	P4	801.1	45.2	45.0		
20	143	P8	150.7	32.9	32.9		
20	134	P8	1250.1	46.1	46.0		
26	166	P12	40.9	7.6	7.7		
29	215	P12	125.9	19.2	19.4		
29	201	P12	2500.5	42.4	42.4		
41	313	P16	76.0	16.0	16.0		
41	301	P16	1251.2	46.8	46.9		
41	295	P16	3500.6	40.6	40.3		
42	323	P16	40.2	11.5	11.5		
52	389	P20	75.6	16.9	16.9		
52	380	P20	601.6	44.3	44.4		
52	374	P20	2500.3	42.3	42.0		
58	431	P20	200.6	35.4	35.8		
66	516	P26	801.1	45.1	45.4		
70	562	P26	40.9	15.3	15.4		

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Phosphate:Bottle

Precision statement for replicate samples drawn from a single Niskin bottle:

The pooled standard deviation for Phosphate:Bottle for the range 0.69 to 3.28 $\mu\text{mol/l}$ was 0.038,
k = 19 (1 outlier removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples (S_p) was calculated by:

$$S_p = \text{SQRT}\{\text{sum}(d^2)/2k\}$$

where k is the number of pairs and d is the difference between pairs.

Feb 23, 2012 Phosphate stock standard solution (Feb 23 secondary) was used for this cruise analyses.
The Phosphate values were within 0.07% of the previous (Sept 2011, secondary) stock solution.

Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Phosphate 1 $\mu\text{mol/l}$	Phosphate 2 $\mu\text{mol/l}$	Rejected yes / no	Comment
3	19	P2	10.4	1.05	1.07		
5	22	P2	101.6	2.61	2.64		
8	49	P4	10.8	0.69	0.69		
10	79	P4	175.6	2.24	2.24		
10	72	P4	801.1	3.28	3.27		
20	143	P8	150.7	2.38	2.37		
20	134	P8	1250.1	3.20	3.26		
26	166	P12	40.9	0.89	0.89		
29	215	P12	125.9	1.41	1.44		
29	201	P12	2500.5	2.79	2.88		
41	313	P16	76.0	1.20	1.35		
41	301	P16	1251.2	3.20	3.21		
41	295	P16	3500.6	2.71	2.71		
42	323	P16	40.2	1.16	1.14		
52	389	P20	75.6	1.42	1.44		
52	380	P20	601.6	3.09	3.00		
52	374	P20	2500.3	2.84	2.87		
58	431	P20	200.6	2.33	2.49	yes	
66	516	P26	801.1	2.97	3.06		
70	562	P26	40.9	1.35	1.38		

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Silicate: Bottle

Precision statement for replicate samples drawn from a single Niskin bottle:

The pooled standard deviation for Silicate: Bottle for the range 3.4 to 177.7 $\mu\text{mol/l}$ was 0.14,
k = 20 (0 outliers removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples (S_p) was calculated by:

$$S_p = \text{SQRT}\{\text{sum}(d^2)/2k\}$$

where k is the number of pairs and d is the difference between pairs.

Accuracy of the stock standard batch was determined by using commercially available standards from
WAKO Chemicals (Sagami Chemical Company of Japan).

The values were within 0.59 % of the 100 $\mu\text{mol/l}$ Silicate Standard.

The values were within 0.62 % of the 200 $\mu\text{mol/l}$ Silicate standard that was analyzed while running these samples.

Feb 23, 2012 Silicate stock standard solution was used for this cruise analyses.

Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Silicate 1 $\mu\text{mol/l}$	Silicate 2 $\mu\text{mol/l}$	Rejected yes / no	Comment
3	19	P2	10.4	19.3	19.3		
5	22	P2	101.6	58.7	58.8		
8	49	P4	10.8	3.5	3.4		
10	79	P4	175.6	43.4	43.4		
10	72	P4	801.1	112.1	111.8		
20	143	P8	150.7	44.0	44.1		
20	134	P8	1250.1	146.6	147.0		
26	166	P12	40.9	4.7	4.6		
29	215	P12	125.9	25.3	25.2		
29	201	P12	2500.5	177.3	177.7		
41	313	P16	76.0	23.3	23.3		
41	301	P16	1251.2	155.7	155.8		
41	295	P16	3500.6	177.4	177.1		
42	323	P16	40.2	16.2	16.2		
52	389	P20	75.6	26.7	26.6		
52	380	P20	601.6	116.8	116.4		
52	374	P20	2500.3	174.0	174.1		
58	431	P20	200.6	65.7	65.6		
66	516	P26	801.1	134.1	134.2		
70	562	P26	40.9	26.7	26.7		