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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 0.0 to 46.0 µmol/l was 0.11,
k = 18 (0 outlier removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples (Sp) was calculated by:
Sp = SQRT{sum (d*d)/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 0.15 % of the 20 µmol/l Nitrate Standard.

Feb 10, 2011 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 µmol/l	Nitrate 2 µmol/l	Rejected yes / no	Comment
1	4	Si03	150.5				
4	20	P2	25.1	18.9	18.8		
6	24	P2	73.7	21.3	21.5		
12	68	P4	400.4	40.5	40.5		
18	128	P4	5.0	0.0	0.0		
24	139	P8	2000.4	43.5	43.6		
24	151	P8	150.0	32.4	32.5		
29	171	P12	175.7	29.2	29.2		
31	206	P12	200.9	30.3	30.3		
42	273	P16	1000.5	46.0	45.7		
42	281	P16	150.5	27.5	27.6		
44	314	P16	1.3	5.2	5.2		
57	371	P20	3501.5	39.6	39.6		
57	378	P20	800.1	45.9	45.6		
57	386	P20	124.4	27.3	27.6		
59	407	P20	175.2	33.3	33.5		
70	500	P26	1499.3	45.9	45.9		
70	510	P26	149.5	34.3	34.5		
71	518	P26	299.9	41.7	41.5		

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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 0.28 to 5.17 µmol/l was 0.007,
k = 19 (0 outlier removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples (Sp) was calculated by:
Sp = SQRT{sum (d*d)/2k}
where k is the number of pairs and d is the difference between pairs.

Feb 10, 2011 Phosphate stock standard solution (Feb 23 secondary) was used for this cruise analyses.
The Phosphate values were the same as the previous (May 2010) stock solution.

Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Phosphate 1 µmol/l	Phosphate 2 µmol/l	Rejected yes / no	Comment
1	4	Si03	150.5	5.15	5.17		
4	20	P2	25.1	1.60	1.61		
6	24	P2	73.7	1.70	1.70		
12	68	P4	400.4	2.88	2.88		
18	128	P4	5.0	0.28	0.29		
24	139	P8	2000.4	3.00	3.01		
24	151	P8	150.0	2.37	2.36		
29	171	P12	175.7	2.04	2.02		
31	206	P12	200.9	2.14	2.14		
42	273	P16	1000.5	3.22	3.23		
42	281	P16	150.5	1.90	1.91		
44	314	P16	1.3	0.72	0.73		
57	371	P20	3501.5	2.68	2.69		
57	378	P20	800.1	3.19	3.20		
57	386	P20	124.4	1.91	1.92		
59	407	P20	175.2	2.28	2.28		
70	500	P26	1499.3	3.16	3.15		
70	510	P26	149.5	2.42	2.42		
71	518	P26	299.9	2.89	2.90		

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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 range2.2 to 174.0 µmol/l was 0.29,
k = 17 (2 outliers removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples (Sp) was calculated by:
Sp = SQRT{sum (d*d)/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 0.80 % of the 100 µmol/l Silicate Standard.
The values were within 0.64 % of the 200 µmol/l Silicate standard that was analyzed while running these samples.

Feb 11, 2011 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 µmol/l	Silicate 2 µmol/l	Rejected yes / no	Comment
1	4	Si03	150.5	107.1	107.0		
4	20	P2	25.1	27.0	27.3		
6	24	P2	73.7	25.8	25.7		
12	68	P4	400.4	75.6	75.0		
18	128	P4	5.0	2.2	2.3		
24	139	P8	2000.4	173.7	174.0		
24	151	P8	150.0	42.3	42.4		
29	171	P12	175.7	44.6	44.2		
31	206	P12	200.9	48.5	48.3		
42	273	P16	1000.5	140.3	141.1		
42	281	P16	150.5	40.9	41.1		
44	314	P16	1.3	11.1	11.2		
57	371	P20	3501.5	172.1	173.0		
57	378	P20	800.1	131.3	131.9		
57	386	P20	124.4	38.4	38.6		
59	407	P20	175.2	53.7	53.7		
70	500	P26	1499.3	165.7	164.4	Yes	
70	510	P26	149.5	61.1	60.8		
71	518	P26	299.9	89.6	88.1	Yes	