2008-01

CCGS *JP Tully*

Dimethylsulfide (DMS) Report

January 29, 2008 to February 19, 2008

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1. Sample Collection

Samples were collected from all major stations (P4, P12, P16, P20, P26) for DMS.

1.1 DMS

Thirteen water samples from various depths (200m, 175m, 100m, 75m, 50m, 40m, 30m, 25m, 20m, 15m, 10m, 5m, surface) were collected at each station in 250ml ground glass stoppered bottles. Samples were stored in the dark and removed one at a time before analysis.

2. Analysis

2.1 DMS

A sample was loaded onto the stripper and purged with UHP Nitrogen for 10 minutes at ~100ml/min. The DMS was extracted from the water and absorbed onto a Tenax TA trap kept at -80^{o}C. The trap was subsequently desorbed at 100^{o}C (with a dewar containing boiling water) onto a Chromasorb 330 column which eluted into a Flame Photometric Detector (FPD). All samples were run immediately after being collected.

3. Calibration

3.1 DMS

A four or five level calibration table was used for calculating the concentrations of DMS. The standards were prepared in water and run under the same conditions as described above, for the samples. Normally a continuing calibration standard is run after all samples from a station have been run or every 12 hours, which ever comes first, to ensure the calibration curve is still within acceptable limits.

4. Quality Control

4.1 DMS

System blanks and duplicates were run approximately every 13 samples to ensure the system remained free of contamination and had acceptable reproducibility. All blanks were non-detectable and duplicates did not differ

by an average 8% (well within the acceptable limits of 20%). Stripping efficiency was evaluated at the beginning of the cruise and was proven to be acceptable at over 95%. A performance evaluation mixture (PEM) was run at the start of every cast to further ensure method accuracy.

5. Data & Results

5.1 DMS

Weather was a considerable factor this cruise. Sea state was rough with large swells at pretty much all stations. Only one cast could be done at Station Papa due to sever weather conditions, therefore, no diurnal data is available for this cruise.

With the exception of sample number 164 (Station P12, 10m) whose value was almost 5nM, no other value was over 0.8 nM. This certainly brings into question the validity of this outlier, however, no problems were recorded on the cast sheet and at the time of this report, there was no other analysis data (i.e. nutrients) to cross reference.

6. Conclusions

6.1 DMS

Instrument and analysis performed very well on this cruise. No issues to report and no problems to correct.