

Cruise: HB1103_Leg2
Ship: R/V Henry B. Bigelow
Dates: June 29 – July 14, 2011
Expocode: 33HH20110604
Equipment: Surface samples collected.
Total number of stations: VOS Underway Cruise

Sample Collection

The discrete samples were collected by Reuben Darlington from a metering ball valve next to the underway pCO₂ instrument. The underway pCO₂ instrument was located in the bow thruster space next to the TSG and a short distance from the inlet pump. The sea water takes less than 10 seconds to travel from the inlet to the instruments. The TSG temperature is believed to be no more than 0.15 degrees C warmer than in-situ SST. The date and time listed in the data file are UTC when each sample bottle was collected.

DIC:

13 locations, 20 samples each 500-ml, 5 sets of duplicate samples, 1 set of triplicate samples

Sample_ID#: 81 - 100

PI: Dr. Rik Wanninkhof

Analyzed by: Esa Peltola

Second analysis

Analyzed by: Dr. Leticia Barbero

Talk:

13 locations, 20 samples each 500-ml, 5 sets of duplicate samples, 1 set of triplicate samples

Sample_ID#: 81 - 100

PI: Dr. Rik Wanninkhof

Analyzed by: Dr. Leticia Barbero

Sample Analysis

DIC:

Analysis date: August 15, 2011

Coulometer used: AOML2

Blank: 30 counts/min

CRM # used and assigned value (include both DIC and salinity): Batch 85, c: 2000.4 umol/kg,S: 33.326

CRM value measured: AOML 2: offset 1.0 umol/kg (2001.4 umol/kg).

Average run time, minimum run time, maximum run time: 9 min, 8 min, 13 min

Reproducibility: (# samples and average difference): 5 sets of duplicate samples, average difference 1.5 umol/kg

CRM, salinity and HgCl₂ correction applied: Salinity correction was applied using TSG salinity

Remarks-

The volume correction was applied due to added HgCl₂ (Measured DIC*1.00037).

The first CRM of each cell was used for a CRM correction.

DIC Apollo:

Analysis date: 08/25/2011 to 08/27/2011

System used: Apollo SciTech

CRM # used and assigned value (include both DIC and salinity):

Meas CRM	cert CRM	Salinity	batch
1991.57	2000.44	33.326	85
1989.53	2000.44	33.326	85
2012.12	2000.44	33.326	85

CRM value measured: CRM measured at start and end of run.

Injection mode used: single injection. Criteria used: 3 values within 0.1% of each other.

Reproducibility: (# samples and average difference): 4 sets of duplicate samples, (duplicate samples 82 and 83 are discarded because of issues with sample 83), average difference 2.9 umol/kg ± 3.8 umol/kg.

CRM, correction applied: CRMs ran at start and end of analyses were used to correct drift in the system.

Remarks-

The results posted are duplicate analyses from the same DIC sample bottles analyzed previously with the SOMMA.

Sample 99 had to be analyzed several times due to issues with the system (time out measurements). The value kept corresponds to the last analysis done, which had no time out measurements but which was done the following day. This sample has been flagged 3.

Talk:

The results posted are duplicate analyses from the same DIC sample bottles used with the SOMMA and the Apollo SciTech.

Analysis date: 08/25/2011 and 09/01/2011

Titration system used: Open cell

CRM # used and assigned value:

Meas CRM	cert CRM	batch
2147.73	2184.03	85
2144.34	2184.03	85

Reproducibility: (# samples and average difference): 5 sets of duplicate samples plus 1 triplicate sample, average difference 2.8 umol/kg ± 0.6 umol/kg.

CRM correction applied. CRMs ran at start and end of the analyses were used for the CRM correction.

Remarks-

Comments

The latitude, longitude, temperature and salinity reported with the DIC and TAlk measurements were taken from the raw TSG data file. The merging of the discrete measurements with the TSG data was done on the basis of date and time. The TSG values are provided for reference; no post-cruise assurance of accuracy has been done to this data.

The Sample_ID is the sample bottle number for the discrete samples.

UPDATE:

Between March and June of 2021, all of the data for the discrete samples was put into a uniform format. The supporting information was checked for accuracy, especially the expocode, date, time, and positions.