

Cruise: WS1116
Ship: R/V Walton Smith
Dates: October 21 – October 24, 2011
Expocode: 33WA20111020
Chief Scientist: Nelson Melo
Equipment: Surface samples collected.
Total number of stations: 72

Sample Collection

The discrete samples were collected by Kuan Huang, Princeton University, from Niskin bottles used on CTD casts and from the constantly flowing surface sea water system (UW). The UW sampling tube was attached to a ball valve next to the underway pCO₂ instrument. The pCO₂ instrument was located in the ship's wet lab about 50 feet from the sea water inlet and pump.

The date and time listed in the data file are UTC when each sample bottle was collected. The latitude, longitude, temperature and salinity reported with the analytical results (i.e. DIC, TAlk) were recorded at the time of sample collection. The temperature and salinity are raw TSG values, which agreed exceptionally well with the CTD data (+/- 0.01 deg C; +/- 0.001 psu). These data are provided for reference; no post-cruise assurance of accuracy has been done.

DIC:

15 locations, 20 samples each 500-ml, 5 sets of duplicate samples. Note: some sets of duplicates include UW samples, which are inherently less reproducible, than duplicates from the same Niskin bottle.

Sample_ID#: 61 - 80
PI: Dr. Rik Wanninkhof
Analyzed by: Esa Peltola

TAlk:

15 locations, 20 samples each 500-ml, 5 sets of duplicate samples.

Sample_ID#: 61 - 80
PI: Dr. Rik Wanninkhof
Analyzed by: Dr. Leticia Barbero

Sample Analysis

DIC:

Analysis date: October 27, 2011
Coulometer used: AOML2
Blank: 25 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 1.7 umol/kg (1998.7 umol/kg).

Average run time, minimum run time, maximum run time: 10 min, 8 min, 12 min

Reproducibility: (# samples and average difference): 5 sets of duplicate samples, average difference 8.6 umol/kg, excluding two sets of duplicates sampled from underway line (or underway and Niskin in area of variability due to river output as indicated by very high DIC the average of the two remaining sets is 1.8 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.

Talk:

The results posted are duplicate analyses from the same sample bottles.

Comments

The Sample_ID for a Flow-through sample not on a station is the sample bottle number with four zeros. The samples in bottles 63 and 80 were yellow. These two bottles plus sample bottle 76 had some solid material on their bottoms.

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.