

Cruise: NF10-13, Gulf of Mexico

Ship: NOAA ship Nancy Foster

Dates: July 1 – July 18, 2010

Expocode: 33NF20100701

Chief Scientist: Ryan Smith, AOML/OCD

Equipment: Niskin sampling

Total number of stations: 17 stations mostly surface samples

General information about cruise:

<http://oceanexplorer.noaa.gov/explorations/10lophelia/background/plan/plan.html>

Sample Collection

The discrete samples were collected by AOML/PhOD scientists (Andy Stefanick?)

Surface samples were collected from the top niskin of the cast

Sampling collection followed SOP 1 in Dickson et al.(2007).

DIC:

17 locations, 20 samples each 200-ml, 3 sets of duplicate samples.

PI: Dr. Rik Wanninkhof

Analyzed by: Robert Castle

TAlk:

17 locations, 20 samples each 200-ml, 3 sets of duplicate samples

PI: Dr. Rik Wanninkhof

Analyzed by: Dr. Leticia Barbero

Sample Analysis

DIC:

Analysis date: 9/29/2010

Coulometer used: AOML2 (SOMMA #2)

Blank: 12 counts/min

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

Meas CRM	cert CRM	meas sal	cert sal	batch
2004.13	2000.44	32.849	33.326	85

Run time: min=8 min; max = 9 min; average = 9 min

Reproducibility: (# samples and average difference): 3 sets of duplicate samples, average difference 1.0 umol/kg +- 0.98 umol/kg

CRM, salinity and HgCl₂ correction applied: Salinity correction was applied using CTD 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.
Station 6 niskin 1 is NOT from 1457 m depth for DIC. It looks like a surface sample

Talk:

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

Analysis date: 08/12/2011 to 08/15/2011

Titration system used: Open cell

CRM # used and assigned value:

Meas CRM	cert CRM	batch
2175.90	2212.40	96
2145.12	2184.03	85
2152.75	2184.03	85

Reproducibility: (# samples and average difference): 3 sets of duplicate samples, average difference 1.7 umol/kg ± 1.0 umol/kg.

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

Remarks-

Station 6 niskin 1 is NOT from 1457 m depth for alkalinity. It looks like a surface sample.

The sample bottles were only 200 ml, which after DIC measurement left only approximately 150 ml for alkalinity measurement instead of the standard 200 ml.

Comments

Other analyses:

Oxygen: Were run by Andy Stefanik, AOML on the cruise using the old photometric (colorimetric) system. See report Wanninkhof, R., G.-H. Park, and G. Berberian (2011), Oxygen winkler titrations by NOAA/AOML in support of Deep Water Horizon spill monitoring. Report, 15 pp, NOAA technical memorandum OAR AOML-99 June 2011.

Nutrients: were sampled and frozen on ship. Analyzed on shore by Lindsey Visser, AOML. Probably storage and analysis problems making the data not reliable

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.