

**Cruise:** Lophelia II – Cruise 3  
**Ship:** R/V Ronald Brown  
**Dates:** August 20 – September 3, 2009  
**Expocode:** 33RO20090819  
**Chief Scientist:** not applicable  
**Equipment:** Surface samples collected.  
**Total number of stations:** VOS Underway Cruise

### **Sample Collection**

The discrete samples were collected by Jonathan Shannahoff from a metering ball valve next to the underway pCO<sub>2</sub> instrument. The underway pCO<sub>2</sub> 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:**

16 locations, 20 samples each 500-ml, 4 sets of duplicate samples  
Sample\_ID#: 21 - 40  
PI: Dr. Rik Wanninkhof  
Analyzed by: Esa Peltola

#### **Talk:**

16 locations, 20 samples each 500-ml, 4 sets of duplicate samples  
Sample\_ID#: 21 - 40  
PI: Dr. John Morse  
Analyzed by: Luz Romero

### **Sample Analysis**

#### **DIC:**

Analysis date: September 22, 2009  
Coulometer used: AOML2  
Blank: 12-25 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 3.7 umol/kg (2004.2 umol/kg)  
Average run time, minimum run time, maximum run time: 13 min, 9 min, 20 min  
Reproducibility: (# samples and average difference): 4 sets of duplicate samples, average difference 3.3 umol/kg. The difference of the sampling times of the samples 29 and 24 was 10 minutes. These samples had difference of the duplicates 9.1 umol/kg. The average difference of sampling times of all the duplicate samples was about 7 minutes.  
CRM, salinity and HgCl<sub>2</sub> correction applied: Salinity correction was applied using TSG

salinity

Remarks-

The volume correction was applied due to added HgCl<sub>2</sub> (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 bottle.

**Comments**

The GPS transducer and the thermosalinographs (TSG) were logged by a computer system installed by NOAA.

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 SampleID 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.