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To: NODC.DataOfficer@noaa.gov
CC: gtaylor@notes.cc.sunysb.edu
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We are submitting another set of data to you as part of the CARIACO time series program. The files we are sending are small and in the same format as used previously, so we anticipate they are appropriate. Please let us know if there are any problems. There are 7 files: one meta data file with methods descriptions and 6 data files. We hope these data can be added to our earlier submission and to other submissions from colleagues in the CARIACO program (particularly from the group at University of South Florida led by Frank Muller-Karger).
Thanks for your help.
Mary Scranton

(See attached file: meta-file.doc)(See attached file: NODC-CAR66.csv)(See attached file: NODC-CAR74.csv)(See attached file: NODC-CAR78.csv)(See attached file: NODC-CAR89.csv)(See attached file: NODC-CAR96.csv)(See attached file: NODC-CAR100.csv)

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Abstract missing

NODC-CAR66.csv	**Content-Type:** application/octet-stream **Content-Encoding:** base64

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NODC-CAR78.csv	**Content-Type:** application/octet-stream **Content-Encoding:** base64

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NODC-CAR96.csv	**Content-Type:** application/octet-stream **Content-Encoding:** base64

NODC-CAR100.csv	**Content-Type:** application/octet-stream **Content-Encoding:** base64

Data submitted by MI Scranton and GT Taylor
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Methods:

Sampling: All samples are collected in standard 8L Niskin bottles. For samples in and below the oxycline, a N2 line is attached to the upper air vent to prevent air from entering the bottle during subsampling. Samples for live analysis are first transferred without headspace to a 1L glass sample bottle with Teflon standard taper stopper. In the ship's lab, subsamples are transferred to 25 or 40 ml incubation vials, also under N2. All vials are filled from the bottom with overflow of about 3 vial volumes and then sealed with no headspace.

Fatty acid uptake rate constants: Acetate uptake rate constants are determined using radiolabeled tracers as described by Wu and Scranton (1994) and Ho et al. (2002). Incubations are done anoxically in the dark in screw-top septum vials. Uptake includes both conversion of isotope to CO2 (respiration) and to biomass, which can be filtered onto a 0.2 m Nuclepore filter (incorporation).

CH4: CH4 is assayed by gas chromatography using the vial equilibration technique of Johnson et al. (1990) and a Carle 211AC gas chromatograph. Beginning with CAR 78 (May 2002), samples run on HP 5890GC. GC was calibrated for each run using a single standard. It has subsequently been discovered that the GC is not fully linear over the sample range so single point standardization may underestimate high values by about 15%. For more information contact Scranton. Samples are poisoned by addition of 10N KOH solution at a rate of 200 l per 50 ml vial.

H2S: Samples for sulfide analysis are taken in well-flushed glass syringes without bubbles and are injected into vials containing Zn-acetate or Zn-chloride (50 mM). Upon return to the laboratory, the ZnS is dissolved and is analyzed spectrophotometrically by the method of Cline (1969).

Microbial census: Abundances of remineralizers (bacteria) and regenerators (flagellates) are determined using microscopic censuses. Preserved samples (2% formaldehyde) are stained with a fluorochrome (DAPI or acridine orange) and captured on the appropriate porosity Nuclepore membrane (0.2 or 0.8 m). Filter-retained cells are enumerated and sized by epifluorescence microscopy according to Taylor et al. (1986). Larger, less abundant protozoa are enumerated on settled samples using inverted microscopy.

Bacterial production: Bacterial incorporation is measured using 3H-leucine incorporation as described by Kirchman (1993). Triplicate samples are incubated for 10-12 h in gas-

tight screw-top vials to minimize alteration of redox conditions. Time course experiments have confirmed that uptake is linear for at least 15 h. Due to the fact that some important anaerobic bacteria appear to not take up exogenous thymidine under anoxic conditions (McDonough et al. 1986; Gilmour et al. 1990), the more common method of Fuhrman and Azam (1982) is inappropriate for this system.

Dark Inorganic Carbon Assimilation: 14C-bicarbonate assimilation into particles >0.22 um after HCl rinsing - presumed to be mostly chemoautotrophy below 200 m. Triplicate samples are incubated for 18-26 h in gas-tight glass-stoppered bottles (42 ml) to minimize alteration of redox conditions. Time course experiments have confirmed that uptake is linear for at least 36 h. (see Taylor et al. 2001; L&O 46(1): 148-163)

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18 MAY 2004

4 - 10° 29' N 64° 39' W
64° 40' W

DEPTH, H_2S, CH_4, Bacteria, Bacteria prod Rate
INORG carbon assimilation rate
Flagellates Cells per liter

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4 - CAR66 30 APR - 1 MAY 2001

CAR74

3! - 16-17 JAN 2002 16-17 JAN 2002

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3 (CAR78) 8 MAY 2002

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3 - CAR89 8 MAY 2002

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4 - CAR96 20-21 JAN 2004

16 JAN 02
18 MAY 04

21 STATIONS