

**Technical Report 94-001**

# **Mobile Bay Data Report**

**MB-01 to MB-34 Cruises  
(May 1989 - January 1993)**

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## Table of Contents

|                                   |     |                                   |     |
|-----------------------------------|-----|-----------------------------------|-----|
| Table of Contents . . . . .       | 2   | MB-16 (21 June 1991) . . . . .    | 124 |
| Purpose of Study . . . . .        | 3   | MB-17 (22 & 29 July 1991) . . .   | 130 |
| Methods . . . . .                 | 3   | MB-18 (19 & 21 August 1991) .     | 138 |
| Map of Study Area . . . . .       | 7   | MB-19 (3-4 October 1991) . . . .  | 146 |
| MB-01 (25 May 1989) . . . . .     | 8   | MB-20 (6-7 November 1991) . .     | 154 |
| MB-02 (22 June 1989) . . . . .    | 16  | MB-21 (11-12 December 1991) .     | 162 |
| MB-03 (20 July 1989) . . . . .    | 22  | MB-22 (21 January 1992) . . . . . | 170 |
| MB-04 (28 August 1989) . . . . .  | 30  | MB-23 (13 & 18 February 1992)     | 178 |
| MB-05 (22 September 1989) . . .   | 38  | MB-24 (27 & 30 March 1992) . .    | 186 |
| MB-06 (11 December 1989) . . .    | 46  | MB-25 (22-23 April 1992) . . . .  | 194 |
| MB-07 (6 February 1990) . . . . . | 54  | MB-26 (18-19 May 1992) . . . . .  | 202 |
| MB-08 (1 March 1990) . . . . .    | 60  | MB-27 (3 July 1992) . . . . .     | 210 |
| MB-09 (4, 5 & 10 April 1990) . .  | 66  | MB-28 (8-9 July 1992) . . . . .   | 216 |
| MB-10 (14 June 1990) . . . . .    | 80  | MB-29 (3-4 August 1992) . . . . . | 224 |
| MB-11 (17 July 1990) . . . . .    | 86  | MB-30 (31 Aug & 1 Sept 1992)      | 232 |
| MB-12 (28 January 1991) . . . . . | 94  | MB-31 (22 September 1992) . . .   | 240 |
| MB-13 (4 February 1991) . . . . . | 100 | MB-32 (21 October 1992) . . . .   | 248 |
| MB-14 (20 March 1991) . . . . .   | 108 | MB-33 (16-17 November 1992) .     | 256 |
| MB-15 (2 May 1991) . . . . .      | 116 | MB-34 (19 January 1993) . . . . . | 264 |

## Purpose of Study

This research was designed to examine the effects of river discharge, suspended sediment dynamics and nutrient inputs on phytoplankton production in the Mobile Bay ecosystem. This report contains physical, chemical and biological data collected during a four-year series of 34 near-monthly surveys carried out in Mobile Bay between May, 1989 and January 1993. Surveys consisted of up to 21 stations in Mobile Bay between the Mobile River delta and the mouth of Mobile Bay, with up to an additional 11 stations consisting of sites in Mississippi Sound, Bon Secour Bay and the coastal Mobile Bay plume (see page 7 for a general map with all station locations).

## Acknowledgements

We would like to acknowledge the crew of the *R/V Deborah B.*--Captain Tom Lamey, Rodney Collier, Joe Sullivan, Wilton Ray Barber and Russel Wilson--for their efforts on the field surveys. In addition, the efforts of Stan Beasley, Jean Cowan, Beth Gaza, Alan Gunter, Tom Hopkins, Alma Robichaux, Ramona Schreiber, Laurie Sullivan and numerous others, were essential to the success of the field sampling efforts. Finally, hundreds of hours of laboratory analyses were performed diligently by Jean Cowan, Beth Gaza, and Ramona Schreiber. We would also like to acknowledge the support of Marine Environmental Sciences Consortium, the United States Geological Survey, the Geological Survey of Alabama and the University of Alabama in providing funding for this research.

## Station and Field Sampling Procedures

Water samples were obtained from the *R/V Deborah B.*, a 41' vessel operated by the MESC/Dauphin Island Sea Lab. At each station, local time, Loran C and bottom depth were recorded. The following measurements were made at each station:

### Hydrographic Sampling

A Sea-Bird Electronics SBE-25 CTD was used to collect hydrographic profiles over depth of conductivity, temperature, dissolved oxygen, pH, and % transmission. These profiles were taken at a rate of 8 scans per second and stored to memory until being downloaded upon return to the laboratory. The SBE-25 CTD has a resolution of 0.01 ppt for salinity, 0.01 °C for temperature, 0.1 mg/l for dissolved oxygen and 0.01 for pH.

In addition to the CTD profiles, the underwater light regime was quantified using a 20 cm secchi disk and a LiCor Quantum Irradiance Meter fitted with a 3π spherical deck and underwater sensors. Secchi measurements were estimated to the nearest 5 cm. LiCor profiles were carried out at 10 cm increments through the photic zone and the diffuse attenuation coefficient for PAR ( $k_d$ ; /m) was calculated for each station via regression of  $\ln$  irradiance vs. depth for the entire subsurface profile after correction of irradiance for instantaneous variations in surface irradiance.

### Discrete Water Sampling

5-liter PVC Niskin bottles were deployed to collect water samples at the surface at all stations and, at 21 of the 32 stations, one meter above the bottom.

Upon sampling, 1 liter of water was collected into a cleaned 1-liter HDPE bottle, and maintained in the dark on ice until return to the laboratory for subsequent analysis of inorganic and organic materials. Subsequently, 1 liter of water for phytoplankton production experiments was collected in polycarbonate bottles and held at ambient temperature in the dark until processing. In addition, samples for dissolved inorganic carbon (DIC) were collected in glass scintillation vials, capped without air contamination, and returned to the laboratory for analysis. Finally, 20 ml samples for phytoplankton taxonomy were collected and fixed with 2 drops of Lugol's Solution. Upon completion of water collection, temperature and salinity were measured in all discrete samples using a WTW LF-191 temperature/conductivity probe with a resolution of 0.1 °C, and 0.1 ppt, and dissolved oxygen was measured using an Orbisphere Oxygen Indicator Model 2607 with a resolution of 0.01 mg/l.

## **Laboratory Processing and Analysis**

In the laboratory, samples were split into dissolved and particulate fractions using Whatman GF/C glass fiber filters that had been muffled (450 °C for 2 hours) to remove organic contamination. These filters have a nominal pore size of 1.2  $\mu\text{m}$ . Specific processing, storage and analytical procedures are detailed below:

### **Dissolved Matter**

#### Dissolved Inorganic Carbon

The dissolved inorganic carbon ( $\text{TCO}_2$ ) concentration was determined from samples for analysis using a Shimadzu TOC-5000 fitted with a non-dispersive IR detector. This instrument has a resolution of 10  $\mu\text{M}$  at a concentration of 1500  $\mu\text{M}$ .



### Dissolved Inorganic Nutrients

Dissolved nutrients were measured in sample water filtered through a Whatman GF/C filter. Phosphate, ammonium, nitrate, nitrite, and silicate were analyzed by standard colorimetric methods (Strickland and Parsons, 1972) adapted for use on an Alpkem RFA/2 Autoanalyzer. Detection limits are  $0.01 \mu\text{M}$  ( $\text{NO}_3$ ,  $\text{NO}_2$ ,  $\text{PO}_4$ ),  $0.02 \mu\text{M}$  ( $\text{NH}_4$ ), and  $0.05 \mu\text{M}$  ( $\text{SiO}_2$ ). Standard error using the Alpkem ranges from 2-3%.

### Dissolved Organic Carbon

DOC was determined in filtered (GF/C) sample water which was sealed and frozen until analysis using a Shimadzu TOC-5000. The sample is acidified and sparged with purified gas to remove the inorganic carbon component. The sample is then analyzed to obtain the total organic carbon concentration. This method has a detection limit of  $10 \mu\text{M}$  and standard error of 5% at  $300 \mu\text{M}$ .

### Dissolved Organic Nitrogen

DON was calculated from measurements of total dissolved nitrogen according to the methods of D'Elia (1977). This method has a detection limit of  $0.6 \mu\text{M} \pm 5\% \text{ SE}$ .

### Dissolved Organic Phosphorous

DOP was calculated from measurements of total dissolved phosphorous according to the methods of Solorzano & Sharp (1980). With this method, 100% recovery of refractory phosphorous compounds can be expected. Detection limit of this method  $0.02 \mu\text{M}$  with a midrange precision of  $\pm 1\%$ .

## Particulate Matter

### Suspended Sediments

Total suspended sediments (inorganic sediment plus living and dead organic matter) was determined by passing a known volume of water through a tared GF/C filter. After filtration, each filter was rinsed with deionized water to remove salts, dried at  $50^\circ\text{C}$ , cooled and re-weighed, following the methods of Strickland and Parsons (1972). Suspended sediments can be detected to  $0.1 \text{ mg/l}$  with a standard error of 5%.

### Particulate Carbon and Nitrogen

PC and PN were measured on particulate matter collected on a 25mm GF/C filter via high temperature combustion (Sharp, 1974) using a Carlo-Erba NA1500 CNS analyzer fitted with a thermal conductivity detector. A minimum detection of 1.0  $\mu\text{M}$  is possible, standard error is 5%.

### Particulate Organic Phosphorous

PP was determined by conversion of particulate organic phosphorous to inorganic phosphorous by high temperature combustion according to the method of Solorzano & Sharp (1980). This method has a midrange precision of  $\pm 1\%$  and a detection limit of 0.1  $\mu\text{M}$ .

## Biological Biomass and Productivity

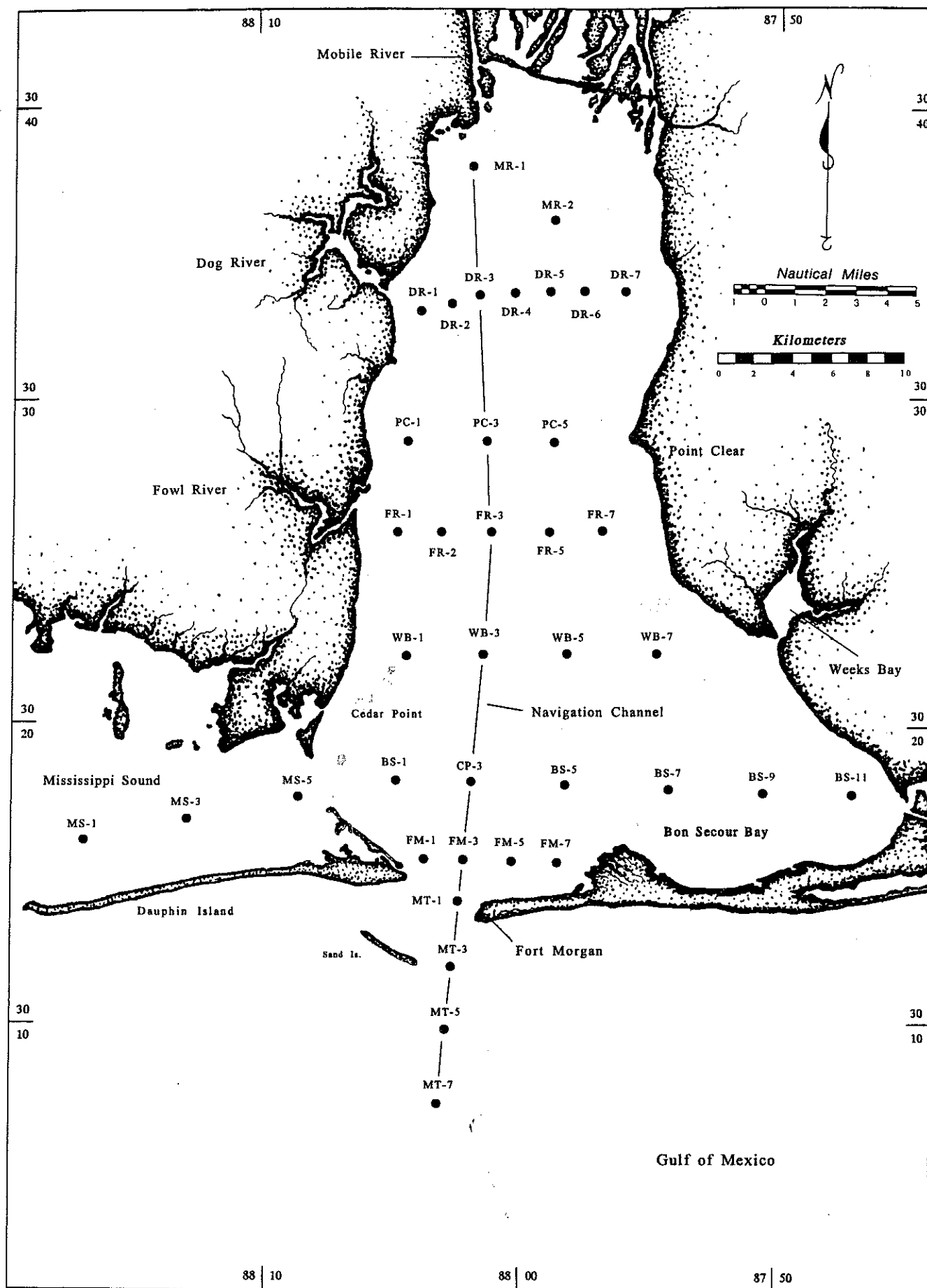
### Chlorophyll-a

Chlorophyll a was extracted on Whatman GF/C filters for 24 hours in cold 90% acetone and measured by fluorometry (Strickland & Parsons 1972) to account for the presence of phaeopigments. A Turner Designs Model 10 fluorometer was calibrated with spectrophotometric measurements of pure chlorophyll a extracts (Sigma Chemical). The detection limit of this method is 0.01  $\mu\text{g/l}$  with a standard error of 5%.

### Phytoplankton Production

Phytoplankton production was measured by the incorporation of  $\text{NaH}^{14}\text{CO}_3$  into particulate matter over 24-hour incubations at six light intensities (100, 57, 26, 9, 5, 1% ambient) using neutral density screen bags in a flow-through deck incubator (Pennock & Sharp 1986). Incubations were terminated by filtering the particulate matter onto Whatman GF/C filters and rinsed with filtered ambient water. Filters were placed immediately in scintillation vials filled with 5 ml of Beckman Ready-Safe scintillation fluor and counted on a Packard Tri-Carb liquid scintillation counter.

Maximum production per unit volume (mg C/l/d) was determined using the maximum rate obtained from the 6 point light series. Areal production was determined by integrating the values obtained at each of the light levels by the light profile described by the diffuse attenuation coefficient.



## ***Mobile Bay Cruise Report***

***MB-01***

25 May 1989

***Vessel:***

*R/V Deborah B.*

***Operation Area:***

Mobile Bay: from Mobile River to Fort Morgan

***Scientific Party:***

Jon Pennock (Chief Scientist)  
Tom Hopkins  
Terry Houlihan

***Supporting Agency:***

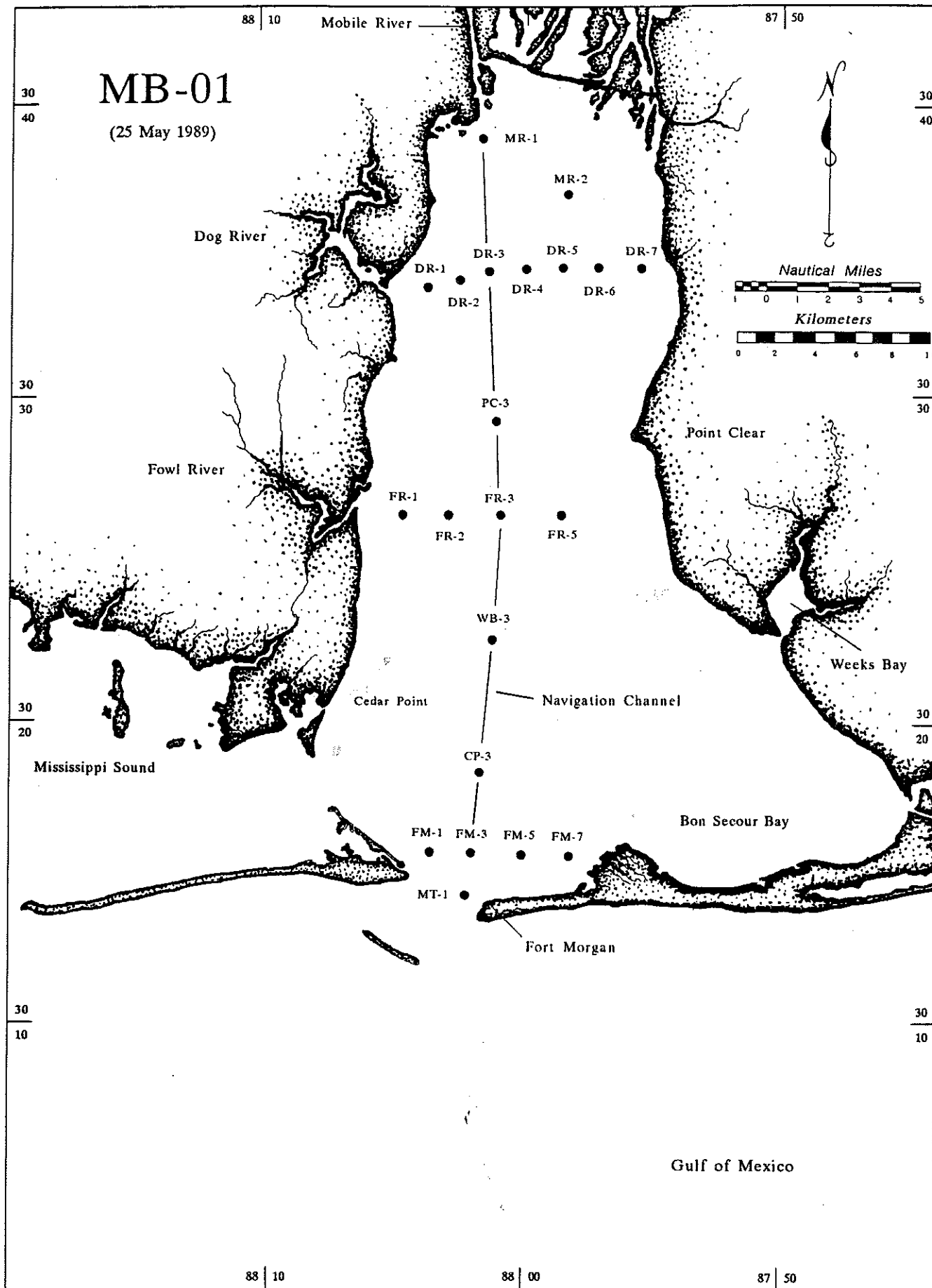
Marine Environmental Sciences Consortium

***Research Objectives:***

Niskin bottle hydrocast samples were made for nutrients, chlorophyll and suspended sediments at 21 surface stations (13 of those including bottom water casts). Surface and bottom salinity, temperature and dissolved oxygen were obtained using a VWR meter at all stations. Secchi disk light measurements were made at each station. CTD profiles were obtained with an Inter-Ocean S4-P current meter at all stations.

***Cruise Summary:***

Departed DISL 0710. Deadheaded to station MR-1. Began sampling 0852. Stations were continued going downbay through station MT-1. Several stations on the Fowl River (FR) transect were dropped as a result of high wind and wave conditions. Returned to DISL 1640.



## MOBILE BAY CRUISE MB-01

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 5/25/89       | 852           | 30 :       | 38.6       | 88 :        | 2.4         | 12781.4          | 47181.2          | 6.1                 | 0.0               | 26.1        | -           | -           |
| MR-1B              | 5.1                 | 5/25/89       | 852           | 30 :       | 38.6       | 88 :        | 1.9         | 12781.4          | 47181.2          | 6.1                 | 0.0               | 25.6        | -           | -           |
| MR-2S              | 1.0                 | 5/25/89       | 933           | 30 :       | 37.9       | 87 :        | 58.3        | 12819.9          | 47180.0          | 3.0                 | 0.0               | 25.0        | -           | -           |
| DR-1S              | 1.0                 | 5/25/89       | 1153          | 30 :       | 34.6       | 88 :        | 3.7         | 12762.3          | 47166.0          | 2.7                 | 0.5               | 26.6        | -           | -           |
| DR-2S              | 1.0                 | 5/25/89       | 1137          | 30 :       | 34.6       | 88 :        | 2.7         | 12772.8          | 47164.9          | 1.5                 | 1.0               | 25.6        | -           | -           |
| DR-3S              | 1.0                 | 5/25/89       | 1115          | 30 :       | 34.3       | 88 :        | 2.1         | 12780.8          | 47166.2          | 12.2                | 0.5               | 25.6        | -           | -           |
| DR-3B              | 11.1                | 5/25/89       | 1115          | 30 :       | 34.3       | 88 :        | 2.1         | 12780.8          | 47166.2          | 12.1                | 9.5               | 24.9        | -           | -           |
| DR-4S              | 1.0                 | 5/25/89       | 1055          | 30 :       | 34.5       | 88 :        | 0.5         | 12759.3          | 47165.6          | 3.7                 | 0.0               | 26.5        | -           | -           |
| DR-5S              | 1.0                 | 5/25/89       | 1040          | 30 :       | 34.4       | 87 :        | 58.8        | 12814.1          | 47166.0          | 4.3                 | 3.0               | 26.2        | -           | -           |
| DR-6S              | 1.0                 | 5/25/89       | 1020          | 30 :       | 33.8       | 87 :        | 57.4        | 12831.1          | 47165.4          | 3.7                 | 0.0               | 26.6        | -           | -           |
| DR-6B              | 2.7                 | 5/25/89       | 1020          | 30 :       | 33.8       | 87 :        | 57.4        | 12831.1          | 47165.4          | 3.7                 | 0.0               | 26.6        | -           | -           |
| DR-7S              | 1.0                 | 5/25/89       | 959           | 30 :       | 33.7       | 87 :        | 55.4        | 12848.1          | 47165.7          | 3.7                 | 0.0               | 26.7        | -           | -           |
| PC-3S              | 1.0                 | 5/25/89       | 1220          | 30 :       | 30.1       | 88 :        | 1.3         | 12783.2          | 47150.6          | 12.8                | 1.0               | 26.5        | -           | -           |
| PC-3B              | 11.8                | 5/25/89       | 1220          | 30 :       | 30.1       | 88 :        | 1.3         | 12783.2          | 47150.6          | 12.8                | 21.0              | 24.9        | -           | -           |
| FR-1S              | 1.0                 | 5/25/89       | 1356          | 30 :       | 27.4       | 88 :        | 5.3         | 12743.5          | 47136.8          | 3.4                 | 3.0               | 27.5        | -           | -           |
| FR-2S              | 1.0                 | 5/25/89       | 1340          | 30 :       | 27.4       | 88 :        | 3.9         | 12756.7          | 47137.2          | 3.7                 | 3.0               | 27.3        | -           | -           |
| FR-3S              | 1.0                 | 5/25/89       | 1316          | 30 :       | 27.0       | 88 :        | 1.4         | 12784.6          | 47137.2          | 13.7                | 1.0               | 27.5        | -           | -           |
| FR-3B              | 12.7                | 5/25/89       | 1316          | 30 :       | 27.0       | 88 :        | 1.4         | 12784.6          | 47137.2          | 13.7                | 26.0              | 25.7        | -           | -           |
| FR-5S              | 1.0                 | 5/25/89       | 1252          | 30 :       | 26.7       | 87 :        | 58.4        | 12816.2          | 47137.6          | 3.7                 | 1.0               | 27.5        | -           | -           |
| FR-5B              | 2.7                 | 5/25/89       | 1252          | 30 :       | 26.7       | 87 :        | 58.4        | 12816.2          | 47137.6          | 3.7                 | 1.0               | 27.3        | -           | -           |
| WB-3S              | 1.0                 | 5/25/89       | 1426          | 30 :       | 23.0       | 88 :        | 1.5         | 12777.0          | 47121.1          | 9.1                 | 6.0               | 27.8        | -           | -           |
| WB-3B              | 8.1                 | 5/25/89       | 1426          | 30 :       | 23.0       | 88 :        | 1.5         | 12777.0          | 47121.1          | 9.1                 | 26.0              | 25.7        | -           | -           |
| CP-3S              | 1.0                 | 5/25/89       | 1500          | 30 :       | 18.2       | 88 :        | 2.5         | 12768.5          | 47102.6          | 9.1                 | 11.0              | 28.6        | -           | -           |
| CP-3B              | 8.1                 | 5/25/89       | 1500          | 30 :       | 18.2       | 88 :        | 2.5         | 12768.5          | 47102.6          | 9.1                 | 25.0              | 26.4        | -           | -           |
| FM-1S              | 1.0                 | 5/25/89       | 1640          | 30 :       | 15.1       | 88 :        | 3.6         | 12755.7          | 47089.6          | 5.5                 | 16.0              | 28.2        | -           | -           |
| FM-1B              | 4.5                 | 5/25/89       | 1640          | 30 :       | 15.1       | 88 :        | 3.6         | 12755.7          | 47089.6          | 5.5                 | 30.0              | 25.6        | -           | -           |
| FM-3S              | 1.0                 | 5/25/89       | 1600          | 30 :       | 16.0       | 88 :        | 2.5         | 12762.7          | 47092.0          | 12.2                | 16.0              | 28.9        | -           | -           |
| FM-3B              | 11.2                | 5/25/89       | 1600          | 30 :       | 16.0       | 88 :        | 2.5         | 12762.7          | 47092.0          | 12.2                | 30.0              | 28.0        | -           | -           |

## MOBILE BAY CRUISE MB-01

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LON<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-5S              | 1.0                 | 5/25/89       | 1540          | 30 : 16.1        | 88 : 1.6         | 12776.4          | 47092.4          | 4.9                 | 19.0              | 28.8        | -           | -           |
| FM-5B              | 3.9                 | 5/25/89       | 1540          | 30 : 16.1        | 88 : 1.6         | 12776.4          | 47092.4          | 4.9                 | 29.0              | 29.0        | -           | -           |
| FM-7S              | 1.0                 | 5/25/89       | 1523          | 30 : 16.0        | 88 : 0.0         | 12786.3          | 47092.5          | 4.9                 | 24.0              | 28.3        | -           | -           |
| FM-7B              | 3.9                 | 5/25/89       | 1523          | 30 : 16.0        | 88 : 0.0         | 12786.3          | 47092.5          | 4.9                 | 24.0              | 28.2        | -           | -           |
| MT-1S              | 1.0                 | 5/25/89       | 1620          | 30 : 13.2        | 88 : 2.2         | 12762.9          | 47081.4          | 13.4                | 26.0              | 27.7        | -           | -           |
| MT-1B              | 12.4                | 5/25/89       | 1620          | 30 : 13.2        | 88 : 2.2         | 12762.9          | 47081.1          | 13.4                | 32.0              | 24.7        | -           | -           |

## MOBILE BAY CRUISE MB-01

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -  | -            | 0.74        | 9.59        | 0.56        | 0.33        | 81.87      | -           | -           | -           | -          | -          | -          |
| MR-1B              | 5.1                 | -  | -            | 0.80        | 9.82        | 0.32        | 0.58        | 81.57      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -  | -            | 1.24        | 8.28        | 0.55        | 0.63        | 82.32      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | -  | -            | 1.50        | 12.65       | 0.80        | 2.20        | 77.79      | -           | -           | -           | -          | -          | -          |
| DR-2S              | 1.0                 | -  | -            | 0.88        | 13.24       | 0.74        | 2.68        | 86.98      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -  | -            | 0.98        | 13.30       | 0.80        | 2.53        | 85.70      | -           | -           | -           | -          | -          | -          |
| DR-3B              | 11.1                | -  | -            | 0.95        | 7.79        | 0.58        | 11.94       | 61.80      | -           | -           | -           | -          | -          | -          |
| DR-4S              | 1.0                 | -  | -            | 1.12        | 11.73       | 0.52        | 0.54        | 77.56      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -  | -            | 1.00        | 10.78       | 0.40        | 0.42        | 79.44      | -           | -           | -           | -          | -          | -          |
| DR-6S              | 1.0                 | -  | -            | 1.29        | 7.55        | 0.46        | 0.61        | 74.18      | -           | -           | -           | -          | -          | -          |
| DR-6B              | 2.7                 | -  | -            | 1.10        | 8.02        | 0.25        | 1.91        | 68.22      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -  | -            | 0.64        | 3.30        | 0.35        | 0.27        | 64.76      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | -  | -            | 0.67        | 7.88        | 0.65        | 1.29        | 72.39      | -           | -           | -           | -          | -          | -          |
| PC-3B              | 11.8                | -  | -            | 0.78        | 0.58        | 0.92        | 12.61       | 33.44      | -           | -           | -           | -          | -          | -          |
| FR-1S              | 1.0                 | -  | -            | 0.19        | 0.00        | 0.12        | 0.11        | 45.82      | -           | -           | -           | -          | -          | -          |
| FR-2S              | 1.0                 | -  | -            | 0.90        | 0.00        | 0.54        | 0.54        | 52.04      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -  | -            | 0.64        | 0.85        | 0.51        | 0.47        | 56.75      | -           | -           | -           | -          | -          | -          |
| FR-3B              | 12.7                | -  | -            | 0.60        | 0.60        | 0.15        | 6.55        | 22.54      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | -  | -            | 0.90        | 0.00        | 0.49        | 0.59        | 63.16      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.7                 | -  | -            | 0.58        | 1.36        | 0.15        | -           | -          | -           | -           | -           | -          | -          | -          |
| WB-3S              | 1.0                 | -  | -            | 0.24        | 0.00        | 0.14        | 0.18        | 52.32      | -           | -           | -           | -          | -          | -          |
| WB-3B              | 8.1                 | -  | -            | 0.20        | 0.65        | 0.18        | -           | -          | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | -  | -            | 0.21        | 0.00        | 0.09        | 0.09        | 51.08      | -           | -           | -           | -          | -          | -          |
| CP-3B              | 8.1                 | -  | -            | 0.15        | 0.22        | 0.06        | 0.33        | 15.80      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.19        | 0.00        | 0.06        | 0.09        | 35.53      | -           | -           | -           | -          | -          | -          |
| FM-1B              | 4.5                 | -  | -            | 0.15        | 0.22        | 0.06        | 0.17        | 6.88       | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | -  | -            | 0.19        | 0.00        | 0.06        | 0.09        | 36.59      | -           | -           | -           | -          | -          | -          |
| FM-3B              | 11.2                | -  | -            | 0.15        | 0.06        | 0.08        | 0.66        | 6.33       | -           | -           | -           | -          | -          | -          |



## MOBILE BAY CRUISE MB-01

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-5S              | 1.0                 | -  | -            | 0.19        | 0.00        | 0.04        | 0.09        | 31.23      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.9                 | -  | -            | 0.05        | 0.03        | 0.04        | 0.14        | 8.04       | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | -            | 0.17        | 0.00        | 0.06        | 0.17        | 20.63      | -           | -           | -           | -          | -          | -          |
| FM-7B              | 3.9                 | -  | -            | 0.02        | 0.00        | 0.02        | 0.11        | 19.17      | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | -  | -            | 0.19        | 0.00        | 0.04        | 0.01        | 14.82      | -           | -           | -           | -          | -          | -          |
| MT-1B              | 12.4                | -  | -            | 0.15        | 0.00        | 0.14        | 1.05        | 7.58       | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-01

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | SECTON CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|------------------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 27.58                  | 17.10                  | -              | 45             | -                | -                 |
| MR-1B              | 5.1                 | -                      | -                      | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 39.29                  | -                      | -              | 30             | -                | -                 |
| DR-1S              | 1.0                 | 54.64                  | 5.30                   | -              | 25             | -                | -                 |
| DR-2S              | 1.0                 | 39.89                  | 10.70                  | -              | 30             | -                | -                 |
| DR-3S              | 1.0                 | 32.77                  | 10.70                  | -              | 25             | -                | -                 |
| DR-3B              | 11.1                | -                      | -                      | -              | -              | -                | -                 |
| DR-4S              | 1.0                 | 69.16                  | 10.70                  | -              | 25             | -                | -                 |
| DR-5S              | 1.0                 | 44.92                  | 13.40                  | -              | 25             | -                | -                 |
| DR-6S              | 1.0                 | 63.52                  | 14.20                  | -              | 25             | -                | -                 |
| DR-6B              | 2.7                 | -                      | -                      | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 56.27                  | 24.00                  | -              | 30             | -                | -                 |
| PC-3S              | 1.0                 | 25.55                  | 16.00                  | -              | 35             | -                | -                 |
| PC-3B              | 11.8                | -                      | -                      | -              | -              | -                | -                 |
| FR-1S              | 1.0                 | 50.37                  | 26.70                  | -              | 30             | -                | -                 |
| FR-2S              | 1.0                 | 48.17                  | 24.00                  | -              | 30             | -                | -                 |
| FR-3S              | 1.0                 | 43.63                  | 24.00                  | -              | 25             | -                | -                 |
| FR-3B              | 12.7                | -                      | -                      | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 62.63                  | 32.00                  | -              | 20             | -                | -                 |
| FR-5B              | 2.7                 | -                      | -                      | -              | -              | -                | -                 |
| WB-3S              | 1.0                 | 25.68                  | 18.70                  | -              | 40             | -                | -                 |
| WB-3B              | 8.1                 | -                      | -                      | -              | -              | -                | -                 |
| CP-3S              | 1.0                 | 7.16                   | 5.30                   | -              | -              | -                | -                 |
| CP-3B              | 8.1                 | -                      | -                      | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 5.76                   | 5.30                   | -              | -              | -                | -                 |
| FM-1B              | 4.5                 | -                      | -                      | -              | -              | -                | -                 |
| FM-3S              | 1.0                 | 5.07                   | 4.70                   | -              | -              | -                | -                 |
| FM-3B              | 11.2                | -                      | -                      | -              | -              | -                | -                 |

MOBILE BAY CRUISE MB-01

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| FM-5S              | 1.0                 | 4.73                   | 3.30            | -              | -              | -                | -                 |
| FM-5B              | 3.9                 | -                      | -               | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 8.49                   | 2.10            | -              | -              | -                | -                 |
| FM-7B              | 3.9                 | -                      | -               | -              | -              | -                | -                 |
| MT-1S              | 1.0                 | -                      | 3.30            | -              | -              | -                | -                 |
| MT-1B              | 12.4                | -                      | -               | -              | -              | -                | -                 |

## **Mobile Bay Cruise Report**

**MB-02**

22 June 1989

**Vessel:** *R/V Deborah B.*

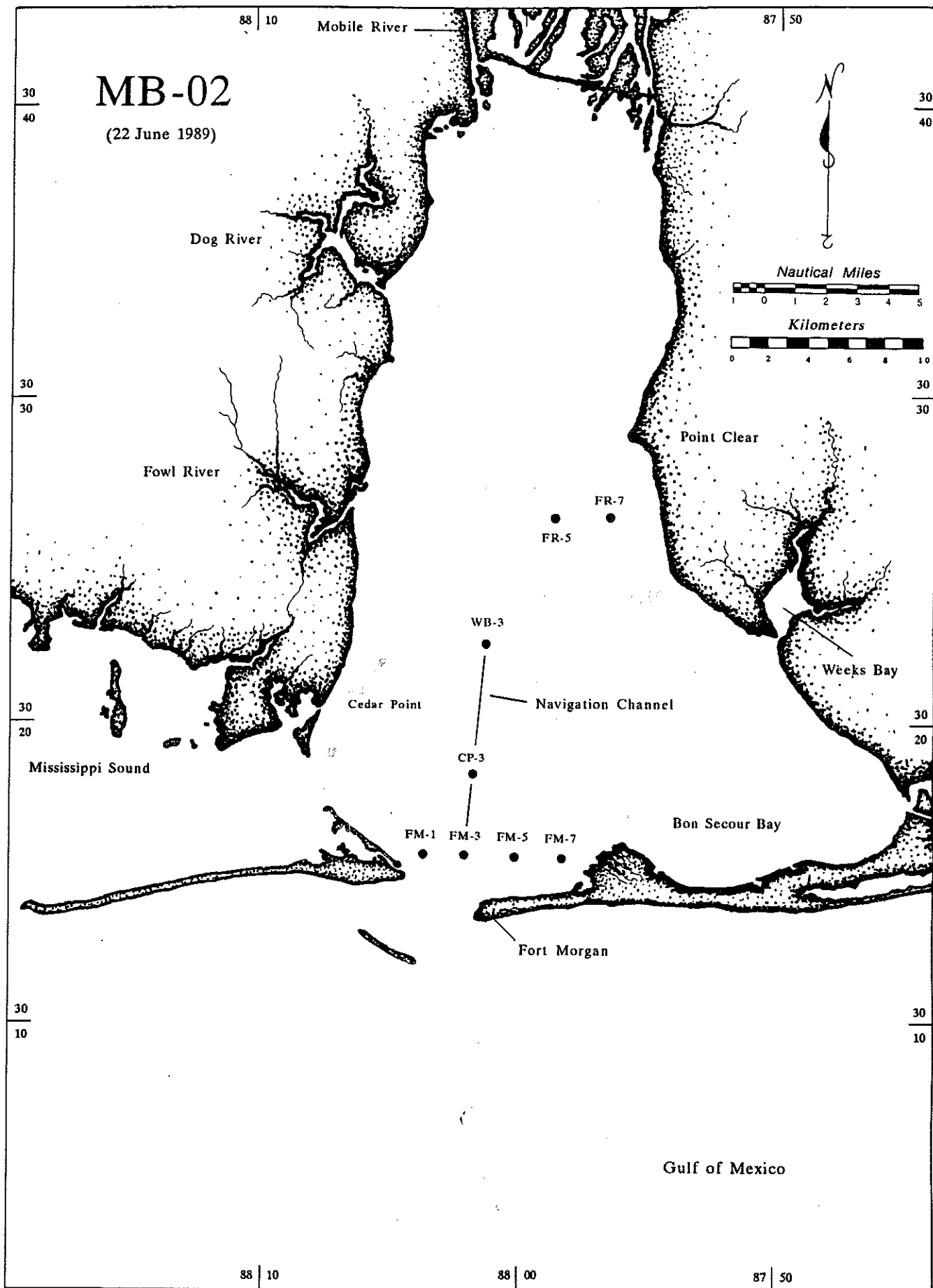
**Operation Area:** Mobile Bay: from Fort Morgan to Fowl River transect

**Scientific Party:** Jon Pennock (Chief Scientist)  
Steven Morgan  
Bob Brooks  
Felix Fernandez

**Supporting Agency:** Marine Environmental Sciences Consortium

**Research Objectives:** Niskin bottle hydrocast samples were made for nutrients, chlorophyll and suspended sediments at 8 surface stations (4 of those including bottom water casts). Surface and bottom salinity, temperature, dissolved oxygen and pH were obtained using a Hydrolab II at all stations. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles were obtained with an Inter-Ocean S4-P current meter at all stations.

**Cruise Summary:** Departed DISL 0730. Deadheaded to station FM-3. Began sampling 0805. Zooplankton net was deployed at FM-3 for repetitive tows at 2-3 depths each time. Stations were continued going upbay through station FR-7. Cruise was terminated following sampling at station FR-7 due to severe thunderstorm activity. Returned to DISL 1330.



## MOBILE BAY CRUISE MB-02

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LON<br>DEG | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FR-5S              | 1.0                 | 6/22/89       | -             | 30 :       | 25.9       | 87 :       | 58.0             | 12813.6          | -                   | -                 | -           | -           | -           |
| FR-7S              | 1.0                 | 6/22/89       | 1236          | 30 :       | 26.2       | 87 :       | 56.9             | 12825.6          | 3.1                 | 0.0               | 28.0        | 7.7         | 98          |
| WB-3S              | 1.0                 | 6/22/89       | 1207          | 30 :       | 22.5       | 88 :       | 1.3              | 12777.0          | 14.6                | 3.8               | 28.1        | 7.7         | 101         |
| WB-3B              | 13.6                | 6/22/89       | 1207          | 30 :       | 22.5       | 88 :       | 1.3              | 12777.0          | 14.6                | -                 | 26.2        | 3.9         | 59          |
| CP-3S              | 1.0                 | 6/22/89       | 1135          | 30 :       | 18.2       | 88 :       | 1.9              | 12768.4          | 13.4                | 8.9               | 28.2        | 7.8         | 101         |
| CP-3B              | 12.4                | 6/22/89       | 1135          | 30 :       | 18.2       | 88 :       | 1.9              | 12768.4          | 13.4                | -                 | 26.7        | 4.8         | 71          |
| FM-1S              | 1.0                 | 6/22/89       | 811           | 30 :       | 15.1       | 88 :       | 3.6              | 12748.7          | 4.3                 | 11.2              | 27.4        | 7.6         | 102         |
| FM-3S              | 1.0                 | 6/22/89       | 805           | 30 :       | 16.0       | 88 :       | 2.5              | 12761.6          | 12.2                | 11.5              | 27.4        | 7.2         | 97          |
| FM-3B              | 11.2                | 6/22/89       | 805           | 30 :       | 16.0       | 88 :       | 2.5              | 12761.6          | 12.2                | -                 | 25.8        | 4.0         | 61          |
| FM-5S              | 1.0                 | 6/22/89       | 1038          | 30 :       | 16.1       | 88 :       | 1.6              | 12778.5          | 4.3                 | 22.1              | 27.7        | 5.4         | 78          |
| FM-5B              | 3.3                 | 6/22/89       | 1038          | 30 :       | 16.1       | 88 :       | 1.6              | 12778.5          | 4.3                 | -                 | 26.2        | 4.3         | 65          |
| FM-7S              | 1.0                 | 6/22/89       | 1101          | 30 :       | 15.4       | 87 :       | 58.8             | 12798.7          | 4.3                 | 25.6              | 27.0        | 6.6         | 96          |

## MOBILE BAY CRUISE MB-02

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FR-5S              | 1.0                 | -   | -            | 1.30        | 24.63       | 0.40        | 0.73        | 102.45     | -           | -           | -           | -          | -          | -          |
| FR-7S              | 1.0                 | 7.4 | -            | 1.30        | 19.78       | 0.38        | 0.89        | 96.74      | -           | -           | -           | -          | -          | -          |
| WB-3S              | 1.0                 | 7.5 | -            | 0.59        | 14.26       | 0.42        | 1.70        | 77.61      | -           | -           | -           | -          | -          | -          |
| WB-3B              | 13.6                | 7.4 | -            | 0.47        | 1.38        | 0.48        | 4.51        | 16.89      | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | 7.5 | -            | 0.20        | 5.66        | 0.16        | 0.12        | 61.16      | -           | -           | -           | -          | -          | -          |
| CP-3B              | 12.4                | 7.5 | -            | 0.15        | 1.39        | 0.25        | 2.63        | 20.69      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 7.5 | -            | 0.15        | 1.13        | 0.07        | 0.14        | 46.62      | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | 7.4 | -            | 0.22        | 3.89        | 0.25        | 0.14        | 49.11      | -           | -           | -           | -          | -          | -          |
| FM-3B              | 11.2                | 7.5 | -            | 0.25        | 0.83        | 0.34        | 3.28        | 11.50      | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 7.6 | -            | 0.10        | 0.47        | 0.11        | 0.12        | 40.23      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.3                 | 7.5 | -            | 0.15        | 0.53        | 0.32        | 2.77        | 13.81      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 7.4 | -            | 0.00        | 0.94        | 0.18        | 0.25        | 33.16      | -           | -           | -           | -          | -          | -          |

MOBILE BAY CRUISE MB-02

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC//d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|-----------------|-------------------|
| FR-5S              | 1.0                 | 53.88                  | 18.69           | 4.57           | 25             | -               | -                 |
| FR-7S              | 1.0                 | 43.28                  | 18.69           | 4.57           | 25             | -               | -                 |
| WB-3S              | 1.0                 | 17.99                  | 12.46           | 2.21           | 60             | -               | -                 |
| WB-3B              | 13.6                | -                      | -               | -              | -              | -               | -                 |
| CP-3S              | 1.0                 | 10.03                  | 17.80           | 1.64           | 80             | -               | -                 |
| CP-3B              | 12.4                | -                      | -               | -              | -              | -               | -                 |
| FM-1S              | 1.0                 | 11.47                  | 14.69           | 2.24           | 100            | -               | -                 |
| FM-3S              | 1.0                 | 11.87                  | 17.09           | 1.06           | 100            | -               | -                 |
| FM-3B              | 11.2                | -                      | 4.01            | -              | -              | -               | -                 |
| FM-5S              | 1.0                 | 14.61                  | 23.14           | 1.11           | 80             | -               | -                 |
| FM-5B              | 3.3                 | -                      | 7.12            | -              | -              | -               | -                 |
| FM-7S              | 1.0                 | 14.35                  | 21.36           | 1.32           | 110            | -               | -                 |





## ***Mobile Bay Cruise Report***

***MB-03***

20 July 1989

***Vessel:*** *R/V Deborah B.*

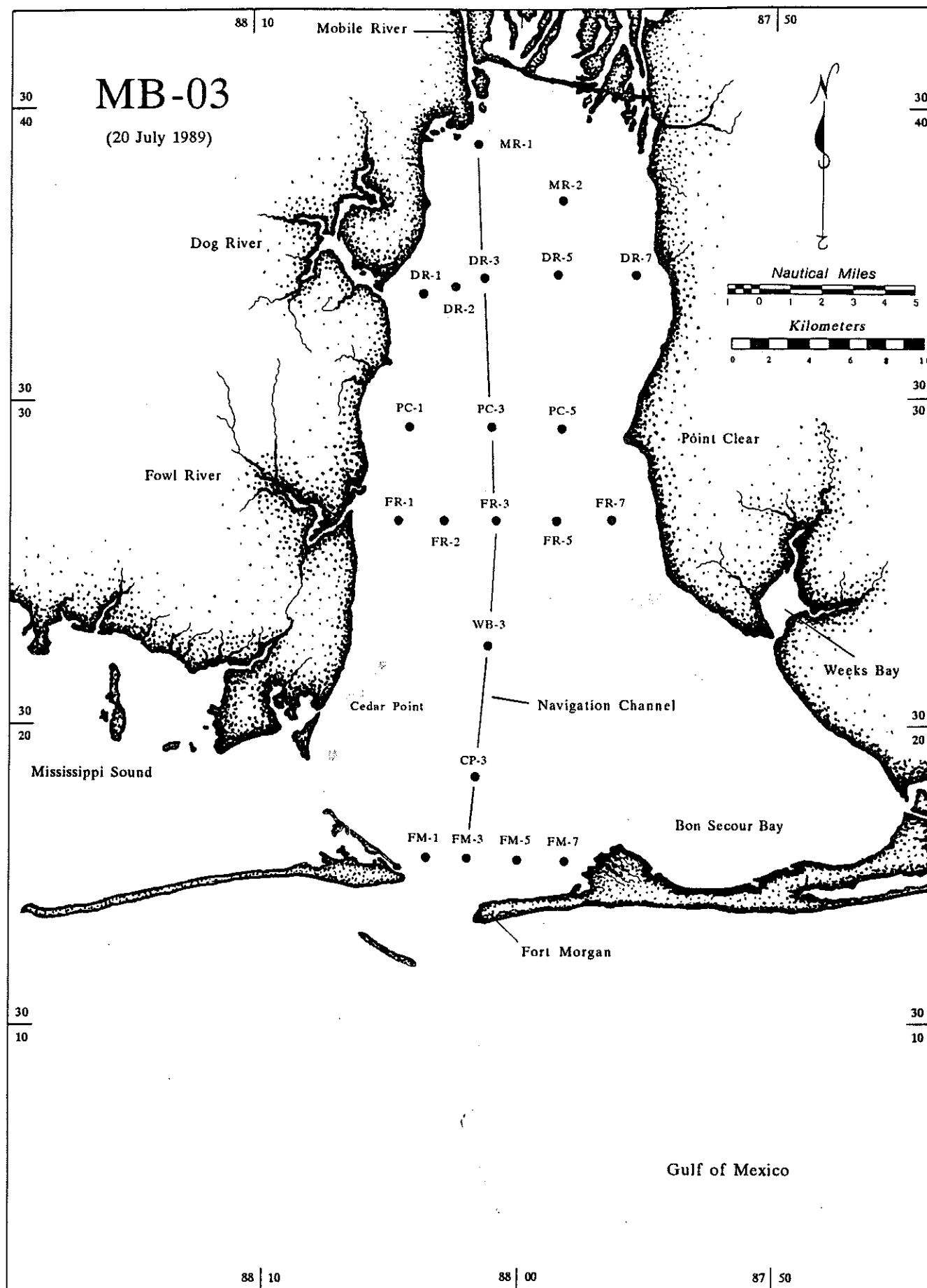
***Operation Area:*** Mobile Bay: from Fort Morgan to Mobile River

***Scientific Party:*** Jon Pennock (Chief Scientist)  
Bob Brooks  
Mario Tamburri  
Tim Burgess

***Supporting Agency:*** Marine Environmental Sciences Consortium

***Research Objectives:*** Niskin bottle hydrocast samples were made for nutrients, chlorophyll and suspended sediments at 21 surface stations (10 of those including bottom water casts). Surface and bottom salinity, temperature, dissolved oxygen and pH were obtained using a Hydrolab II at all stations. Secchi disk and Licor light attenuation measurements were made at each station. No Inter-Ocean SP-4 profiles were obtained on the cruise.

***Cruise Summary:*** Departed DISL 0710. Deadheaded to station FM-1. Began sampling 0740. Stations were continued going upbay through station MR-1. Returned to DISL 1700.



## MOBILE BAY CRUISE MB-03

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0   7/20/89       | 1512          | 30 : 38.5     | 88 :       | 2.0        | 12780.5     | 47181.6     | 12.8             | 0.0              | 27.9                | 5.6               | 71          |             |             |
| MR-1B              | 11.8   7/20/89      | 1512          | 30 : 38.5     | 88 :       | 2.0        | 12780.5     | 47181.6     | 12.8             | 28.8             | 26.4                | 2.0               | 29          |             |             |
| MR-2S              | 1.0   7/20/89       | 1440          | 30 : 36.2     | 87 :       | 58.6       | 12815.0     | 47175.0     | 3.0              | 0.0              | 28.3                | 6.6               | 85          |             |             |
| DR-1S              | 1.0   7/20/89       | 1311          | 30 : 34.1     | 88 :       | 3.4        | 12762.3     | 47165.0     | 1.8              | 1.7              | 28.4                | 7.0               | 91          |             |             |
| DR-2S              | 1.0   7/20/89       | 1319          | 30 : 34.1     | 88 :       | 2.5        | 12771.9     | 47165.3     | 1.5              | 1.3              | 28.3                | 7.0               | 90          |             |             |
| DR-3S              | 1.0   7/20/89       | 1331          | 30 : 33.9     | 88 :       | 1.7        | 12780.4     | 47165.1     | 13.1             | 1.2              | 28.0                | 6.4               | 82          |             |             |
| DR-3B              | 12.1   7/20/89      | 1331          | 30 : 33.9     | 88 :       | 1.7        | 12780.4     | 47165.1     | 13.1             | 29.5             | 26.5                | 2.7               | 40          |             |             |
| DR-5S              | 1.0   7/20/89       | 1357          | 30 : 33.9     | 87 :       | 58.5       | 12814.0     | 47166.0     | 3.7              | 0.0              | 6.8                 | 6.7               | 55          |             |             |
| DR-7S              | 1.0   7/20/89       | 1414          | 30 : 34.0     | 87 :       | 56.1       | 12839.9     | 47167.6     | 3.1              | 0.0              | 28.4                | 7.3               | 94          |             |             |
| PC-1S              | 1.0   7/20/89       | 1241          | 30 : 28.9     | 88 :       | 4.1        | 12752.0     | 47145.1     | 2.7              | 2.5              | 28.0                | 7.2               | 93          |             |             |
| PC-3S              | 1.0   7/20/89       | 1217          | 30 : 28.6     | 88 :       | 1.1        | 12783.3     | 47144.9     | 12.2             | 0.0              | 28.3                | 6.8               | 87          |             |             |
| PC-3B              | 11.2   7/20/89      | 1217          | 30 : 28.6     | 88 :       | 1.1        | 12783.3     | 47144.9     | 12.2             | 30.8             | 26.3                | 2.7               | 40          |             |             |
| PC-5S              | 1.0   7/20/89       | 1157          | 30 : 28.3     | 87 :       | 58.1       | 12814.8     | 47145.0     | 3.1              | 0.0              | 28.5                | 7.4               | 95          |             |             |
| PC-5B              | 2.1   7/20/89       | 1157          | 30 : 28.3     | 87 :       | 58.1       | 12814.8     | 47145.0     | 3.1              | 0.0              | 27.6                | 7.0               | 89          |             |             |
| FR-1S              | 1.0   7/20/89       | 1023          | 30 : 26.2     | 88 :       | 4.7        | 12743.5     | 47134.6     | 2.7              | 2.5              | 28.4                | 7.2               | 94          |             |             |
| FR-2S              | 1.0   7/20/89       | 1043          | 30 : 26.7     | 88 :       | 2.7        | 12765.0     | 47137.2     | 3.1              | 1.8              | 27.8                | 7.2               | 93          |             |             |
| FR-2B              | 2.1   7/20/89       | 1043          | 30 : 26.7     | 88 :       | 2.7        | 12765.0     | 47137.2     | 3.1              | 1.8              | 27.6                | 7.3               | 93          |             |             |
| FR-3S              | 1.0   7/20/89       | 1058          | 30 : 26.6     | 88 :       | 0.9        | 12784.0     | 47137.1     | 12.8             | 2.2              | 28.0                | 7.0               | 90          |             |             |
| FR-3B              | 11.8   7/20/89      | 1058          | 30 : 26.6     | 88 :       | 0.9        | 12784.0     | 47137.1     | 12.8             | 31.0             | 26.2                | 2.9               | 42          |             |             |
| FR-5S              | 1.0   7/20/89       | 1120          | 30 : 26.3     | 87 :       | 58.1       | 12813.0     | 47137.0     | 3.7              | 0.7              | 28.1                | 7.1               | 92          |             |             |
| FR-7S              | 1.0   7/20/89       | 1136          | 30 : 26.3     | 87 :       | 56.3       | 12832.0     | 47137.4     | 2.7              | 0.2              | 29.1                | 7.2               | 94          |             |             |
| WB-3S              | 1.0   7/20/89       | 940           | 30 : 21.9     | 88 :       | 1.4        | 12775.5     | 47118.2     | 12.8             | 5.4              | 28.0                | 6.9               | 91          |             |             |
| WB-3B              | 11.8   7/20/89      | 940           | 30 : 21.9     | 88 :       | 1.4        | 12775.5     | 47118.2     | 12.8             | 31.9             | 25.4                | 2.6               | 38          |             |             |
| CP-3S              | 1.0   7/20/89       | 905           | 30 : 18.2     | 88 :       | 1.9        | 12768.5     | 47103.0     | 12.2             | 11.0             | 28.6                | 8.3               | 114         |             |             |
| CP-3B              | 11.2   7/20/89      | 905           | 30 : 18.2     | 88 :       | 1.9        | 12768.5     | 47103.0     | 12.2             | 25.0             | 26.4                | 8.1               | 116         |             |             |
| FM-1S              | 1.0   7/20/89       | 741           | 30 : 15.7     | 88 :       | 3.7        | 12748.1     | 47092.1     | 4.9              | 12.4             | 27.9                | 6.5               | 89          |             |             |
| FM-3S              | 1.0   7/20/89       | 801           | 30 : 15.6     | 88 :       | 2.4        | 12761.2     | 47092.0     | 5.8              | 13.9             | 27.7                | 6.4               | 88          |             |             |
| FM-3B              | 4.8   7/20/89       | 801           | 30 : 15.6     | 88 :       | 2.4        | 12761.2     | 47092.0     | 5.8              | 29.3             | 26.8                | 5.3               | 78          |             |             |

MOBILE BAY CRUISE MB-03

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : | LAT<br>MIN | LON<br>DEG : | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|--------------|------------|--------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-5S              | 1.0                 | 7/20/89       | 820           | 30 :         | 15.6       | 88 :         | 0.6        | 12780.1          | 47092.0          | 4.6                 | 16.3              | 27.7        | 6.6         | 92          |
| FM-5B              | 3.6                 | 7/20/89       | 820           | 30 :         | 15.6       | 88 :         | 0.6        | 12780.1          | 47092.0          | 4.6                 | 26.2              | 27.4        | 6.2         | 90          |
| FM-7S              | 1.0                 | 7/20/89       | 833           | 30 :         | 15.5       | 87 :         | 58.9       | 12798.0          | 47092.1          | 3.7                 | 5.1               | 27.9        | 7.4         | 97          |

## MOBILE BAY CRUISE MB-03

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -   | -            | 1.13        | 12.36       | 0.28        | -           | 136.83     | -           | -           | -           | -          | -          | -          |
| MR-1B              | 11.8                | 6.4 | -            | 1.33        | 4.98        | 6.23        | 9.61        | 35.31      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -   | -            | 1.00        | 10.67       | 0.30        | -           | 132.24     | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 6.6 | -            | 0.80        | 4.52        | 0.44        | -           | 127.48     | -           | -           | -           | -          | -          | -          |
| DR-2S              | 1.0                 | 6.5 | -            | 0.90        | 7.62        | 0.48        | -           | 128.35     | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -   | -            | 0.90        | 5.65        | 0.39        | -           | 134.17     | -           | -           | -           | -          | -          | -          |
| DR-3B              | 12.1                | 6.6 | -            | 1.14        | 4.12        | 5.74        | 5.78        | 33.47      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 6.8 | -            | 1.60        | 8.82        | 0.40        | -           | 125.46     | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -   | -            | 1.08        | 8.84        | 0.24        | -           | 129.40     | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 6.4 | -            | 0.75        | 12.28       | 0.67        | -           | 112.25     | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 6.4 | -            | 1.15        | 16.10       | 0.51        | -           | 130.55     | -           | -           | -           | -          | -          | -          |
| PC-3B              | 11.2                | 6.5 | -            | 1.10        | 3.80        | 5.21        | 6.25        | 31.72      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 6.9 | -            | 1.43        | 12.73       | 0.27        | -           | 121.38     | -           | -           | -           | -          | -          | -          |
| PC-5B              | 2.1                 | 6.6 | -            | 1.38        | 14.42       | 0.44        | 0.64        | 122.48     | -           | -           | -           | -          | -          | -          |
| FR-1S              | 1.0                 | 7.1 | -            | 0.15        | 2.22        | 0.24        | -           | 104.91     | -           | -           | -           | -          | -          | -          |
| FR-2S              | 1.0                 | 7.0 | -            | 1.00        | 15.86       | 0.65        | -           | 123.26     | -           | -           | -           | -          | -          | -          |
| FR-2B              | 2.1                 | 7.0 | -            | 1.07        | 12.37       | 0.61        | 0.70        | 116.55     | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 2.3 | -            | 0.80        | 14.73       | 0.59        | -           | 141.01     | -           | -           | -           | -          | -          | -          |
| FR-3B              | 11.8                | 6.8 | -            | 1.14        | 3.90        | 5.00        | 3.55        | 32.37      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 6.9 | -            | 1.13        | 16.95       | 0.44        | -           | 124.86     | -           | -           | -           | -          | -          | -          |
| FR-7S              | 1.0                 | 7.2 | -            | 0.95        | 0.00        | 0.22        | -           | 50.28      | -           | -           | -           | -          | -          | -          |
| WB-3S              | 1.0                 | -   | -            | 0.20        | 4.67        | 0.70        | -           | 82.66      | -           | -           | -           | -          | -          | -          |
| WB-3B              | 11.8                | -   | -            | 0.95        | 4.24        | 5.63        | 4.40        | 28.87      | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | -   | -            | 0.20        | 7.05        | 0.79        | -           | 98.39      | -           | -           | -           | -          | -          | -          |
| CP-3B              | 11.2                | -   | -            | 0.90        | 3.83        | 4.58        | 3.70        | 30.53      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 7.3 | -            | 0.35        | 2.01        | 0.78        | -           | 62.61      | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | -   | -            | 0.20        | 7.08        | 0.72        | -           | 67.61      | -           | -           | -           | -          | -          | -          |
| FM-3B              | 4.8                 | -   | -            | 0.24        | 0.50        | 1.74        | 1.11        | 26.85      | -           | -           | -           | -          | -          | -          |

MOBILE BAY CRUISE MB-03

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-5S              | 1.0                 | -  | -            | 0.30        | 6.94        | 1.08        | -           | 65.46      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.6                 | -  | -            | 0.24        | 0.86        | 1.24        | 0.67        | 29.70      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | -            | 0.35        | 0.00        | 1.15        | -           | 78.26      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-03

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 13.48                  | 4.42           | 60             | -                | -                 |
| MR-1B              | 11.8                | -                      | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 40.35                  | 5.19           | 25             | -                | -                 |
| DR-1S              | 1.0                 | 40.00                  | 3.33           | 35             | -                | -                 |
| DR-2S              | 1.0                 | 64.28                  | 3.72           | 30             | -                | -                 |
| DR-3S              | 1.0                 | 21.20                  | 2.87           | 50             | -                | -                 |
| DR-3B              | 12.1                | -                      | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 47.95                  | 5.27           | 20             | -                | -                 |
| DR-7S              | 1.0                 | 25.92                  | 3.35           | 35             | -                | -                 |
| PC-1S              | 1.0                 | 32.10                  | 6.29           | 35             | -                | -                 |
| PC-3S              | 1.0                 | 40.60                  | 7.12           | 25             | -                | -                 |
| PC-3B              | 11.2                | -                      | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 68.30                  | 21.36          | 15             | -                | -                 |
| PC-5B              | 2.1                 | -                      | -              | -              | -                | -                 |
| FR-1S              | 1.0                 | 39.04                  | 40.05          | -              | -                | -                 |
| FR-2S              | 1.0                 | 33.40                  | 8.90           | 35             | -                | -                 |
| FR-2B              | 2.1                 | -                      | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 30.88                  | 10.68          | 35             | -                | -                 |
| FR-3B              | 11.8                | -                      | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 41.76                  | 13.35          | 30             | -                | -                 |
| FR-7S              | 1.0                 | 102.80                 | 37.38          | 20             | -                | -                 |
| WB-3S              | 1.0                 | 26.47                  | 26.70          | 45             | -                | -                 |
| WB-3B              | 11.8                | -                      | -              | -              | -                | -                 |
| CP-3S              | 1.0                 | 21.47                  | 24.92          | 40             | -                | -                 |
| CP-3B              | 11.2                | -                      | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 25.11                  | 17.23          | 75             | -                | -                 |
| FM-3S              | 1.0                 | 20.64                  | 10.68          | 70             | -                | -                 |
| FM-3B              | 4.8                 | -                      | -              | -              | -                | -                 |



MOBILE BAY CRUISE MB-03

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|---------------|----------------|------------------|-------------------|
| FM-5S              | 1.0                 | 23.40                  | 13.88           | 3.36          | 80             | -                | -                 |
| FM-5B              | 3.6                 | -                      | -               | -             | -              | -                | -                 |
| FM-7S              | 1.0                 | 26.06                  | 7.48            | 2.95          | 85             | -                | -                 |

## ***Mobile Bay Cruise Report***

***MB-04***

28 August 1989

***Vessel:*** *R/V Deborah B.*

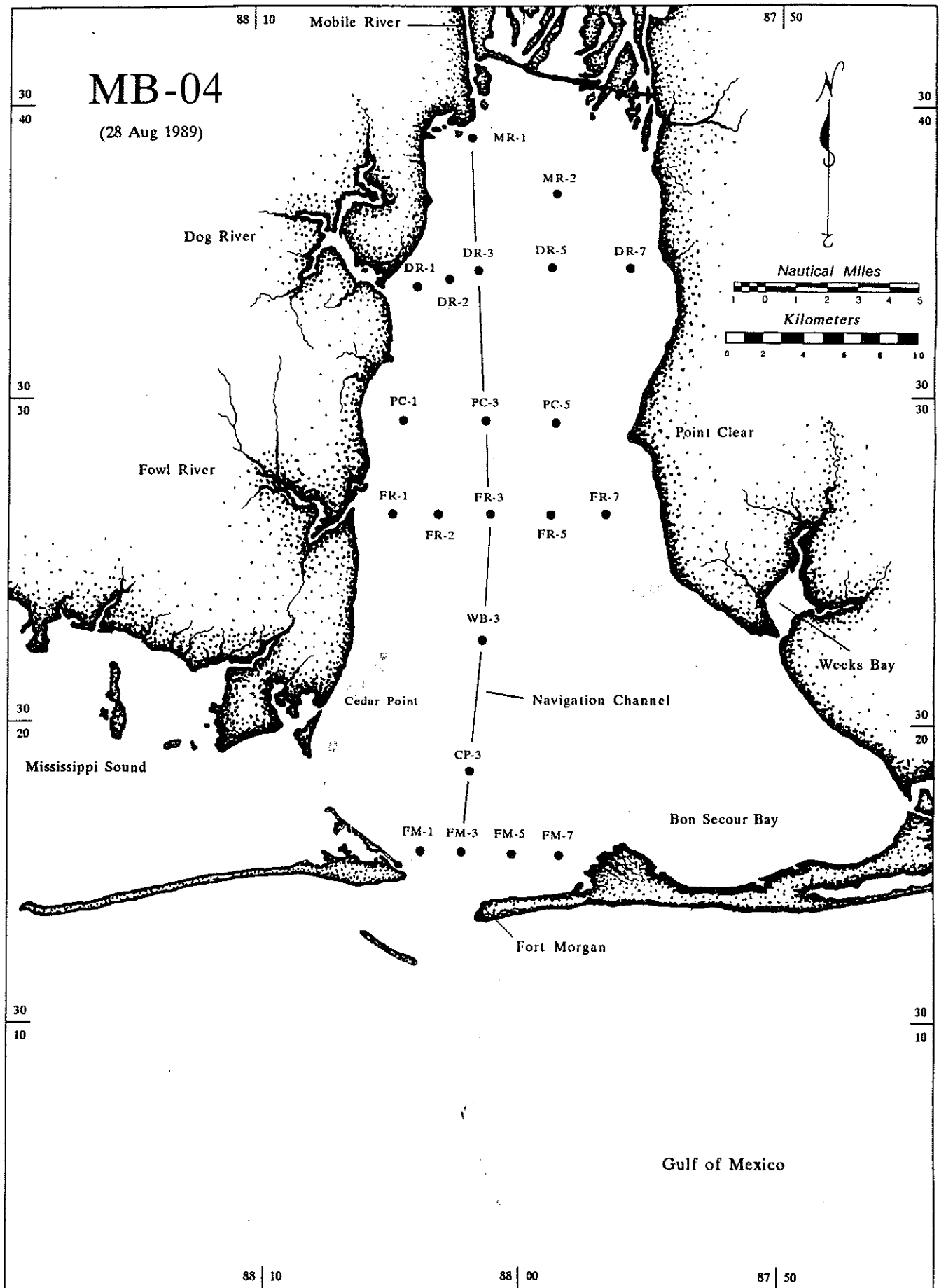
***Operation Area:*** Mobile Bay: from Fort Morgan to Mobile River

***Scientific Party:*** Jon Pennock (Chief Scientist)  
Tom Hopkins  
Bob Brooks  
Felix Fernandez

***Supporting Agency:*** Marine Environmental Sciences Consortium

***Research Objectives:*** Niskin bottle hydrocast samples were made for nutrients, chlorophyll and suspended sediments at 21 surface stations (13 of those including bottom water casts). Surface and bottom salinity, temperature, dissolved oxygen and pH were obtained using a Hydrolab II at all stations. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles were obtained with an Inter-Ocean S4-P current meter at all stations.

***Cruise Summary:*** Departed DISL 0710. Deadheaded to station FM-1. Began sampling 0730. Stations were continued going upbay through station MR-1. Returned to DISL 1630.



## MOBILE BAY CRUISE MB-04

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LON<br>DEG | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 8/28/89       | 1503          | 30         | 37.5       | 88         | 2.0        | 12779.9          | 47178.2          | 15.2                | 4.2               | 31.0        | 8.1         | 111         |
| MR-1B              | 14.2                | 8/28/89       | 1503          | 30         | 37.5       | 88         | 2.0        | 12779.9          | 47178.2          | 15.2                | 15.0              | 29.7        | 3.8         | 54          |
| MR-2S              | 1.0                 | 8/28/89       | 1435          | 30         | 35.9       | 87         | 58.3       | 12817.7          | 47173.8          | 3.4                 | 6.1               | 31.1        | 8.1         | 113         |
| MR-2B              | 2.4                 | 8/28/89       | 1435          | 30         | 35.9       | 87         | 58.3       | 12817.7          | 47173.8          | 3.4                 | 10.4              | 30.6        | 1.3         | 19          |
| DR-1S              | 1.0                 | 8/28/89       | 1302          | 30         | 32.6       | 88         | 4.0        | 12755.0          | 47159.1          | 3.0                 | 8.0               | 31.2        | 8.3         | 118         |
| DR-2S              | 1.0                 | 8/28/89       | 1314          | 30         | 32.8       | 88         | 2.8        | 12768.4          | 47160.3          | 2.7                 | 7.9               | 31.3        | 8.4         | 119         |
| DR-3S              | 1.0                 | 8/28/89       | 1335          | 30         | 34.0       | 88         | 1.7        | 12780.9          | 47165.4          | 12.8                | 7.2               | 31.3        | 8.2         | 115         |
| DR-3B              | 11.8                | 8/28/89       | 1335          | 30         | 34.0       | 88         | 1.7        | 12780.9          | 47165.4          | 12.8                | 28.0              | 29.7        | 4.4         | 68          |
| DR-5S              | 1.0                 | 8/28/89       | 1358          | 30         | 34.9       | 87         | 58.5       | 12814.8          | 47170.2          | 2.7                 | 5.8               | 31.1        | 8.2         | 114         |
| DR-5B              | 2.7                 | 8/28/89       | 1358          | 30         | 34.9       | 87         | 58.5       | 12814.8          | 47170.2          | 2.7                 | 10.9              | 30.6        | 1.5         | 21          |
| DR-7S              | 1.0                 | 8/28/89       | 1417          | 30         | 34.8       | 87         | 56.1       | 12840.0          | 47170.6          | 3.0                 | 4.9               | 31.0        | 8.0         | 111         |
| DR-7B              | -2.0                | 8/28/89       | 1417          | 30         | 34.8       | 87         | 56.1       | 12840.0          | 47170.6          | 3.0                 | 8.7               | 30.1        | 1.3         | 18          |
| PC-1S              | 1.0                 | 8/28/89       | 1240          | 30         | 28.9       | 88         | 4.9        | 12743.5          | 47145.0          | 3.7                 | 10.5              | 31.1        | 8.3         | 119         |
| PC-3S              | 1.0                 | 8/28/89       | 1215          | 30         | 28.7       | 88         | 1.0        | 12783.8          | 47145.2          | 13.7                | 10.0              | 30.5        | 7.7         | 109         |
| PC-3B              | 12.7                | 8/28/89       | 1215          | 30         | 28.7       | 88         | 1.0        | 12783.8          | 47145.2          | 13.7                | 28.2              | 29.8        | 4.8         | 74          |
| PC-5S              | 1.0                 | 8/28/89       | 1154          | 30         | 23.3       | 87         | 57.7       | 12815.3          | 47125.1          | 3.4                 | 10.9              | 30.4        | 7.1         | 101         |
| PC-5B              | 2.4                 | 8/28/89       | 1154          | 30         | 23.3       | 87         | 57.7       | 12815.3          | 47125.1          | 3.4                 | 15.9              | 30.0        | 1.8         | 26          |
| FR-1S              | 1.0                 | 8/28/89       | 1010          | 30         | 26.9       | 88         | 4.8        | 12743.2          | 47137.3          | 3.0                 | 11.7              | 30.5        | 8.1         | 115         |
| FR-2S              | 1.0                 | 8/28/89       | 1031          | 30         | 26.8       | 88         | 2.7        | 12765.6          | 47137.6          | 3.7                 | 10.9              | 30.0        | 7.8         | 109         |
| FR-2B              | 2.7                 | 8/28/89       | 1031          | 30         | 26.8       | 88         | 2.7        | 12765.6          | 47137.6          | 3.7                 | 17.7              | 30.5        | 3.6         | 53          |
| FR-3S              | 1.0                 | 8/28/89       | 1055          | 30         | 26.6       | 88         | 0.8        | 12784.8          | 47137.2          | 13.7                | 11.5              | 30.4        | 7.3         | 103         |
| FR-3B              | 12.7                | 8/28/89       | 1055          | 30         | 26.6       | 88         | 0.8        | 12784.8          | 47137.2          | 13.7                | 28.6              | 29.8        | 4.6         | 71          |
| FR-5S              | 1.0                 | 8/28/89       | 1127          | 30         | 26.4       | 87         | 58.1       | 12813.5          | 47137.5          | 4.0                 | 12.1              | 30.4        | 7.4         | 106         |
| FR-7S              | 1.0                 | 8/28/89       | 1135          | 30         | 26.2       | 87         | 56.3       | 12832.6          | 47137.2          | 3.4                 | 14.1              | 30.3        | 7.1         | 103         |
| WB-3S              | 1.0                 | 8/28/89       | 933           | 30         | 22.7       | 88         | 1.3        | 12777.1          | 47121.3          | 12.2                | 16.0              | 30.3        | 7.2         | 105         |
| WB-3B              | 11.2                | 8/28/89       | 933           | 30         | 22.7       | 88         | 1.3        | 12777.1          | 47121.3          | 12.2                | 30.1              | 29.7        | 5.9         | 91          |
| CP-3S              | 1.0                 | 8/28/89       | 903           | 30         | 18.3       | 88         | 1.9        | 12768.6          | 47103.5          | 14.6                | 21.8              | 30.4        | 6.4         | 96          |
| CP-3B              | 13.6                | 8/28/89       | 903           | 30         | 18.3       | 88         | 1.9        | 12768.6          | 47103.5          | 14.6                | 31.0              | 29.5        | 5.9         | 91          |

## MOBILE BAY CRUISE MB-04

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LON<br>DEG | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-1S              | 1.0                 | 8/28/89       | 729           | 30         | 15.7       | 88         | 3.7        | 12748.5          | 47092.1          | 4.6                 | 24.7              | 30.0        | 6.0         | 91          |
| FM-3S              | 1.0                 | 8/28/89       | 750           | 30         | 15.6       | 88         | 2.3        | 12762.2          | 47091.8          | 13.7                | 25.4              | 30.2        | 6.4         | 97          |
| FM-3B              | 12.7                | 8/28/89       | 750           | 30         | 15.6       | 88         | 2.3        | 12762.2          | 47091.8          | 13.7                | 30.7              | 29.5        | 6.0         | 94          |
| FM-5S              | 1.0                 | 8/28/89       | 812           | 30         | 15.6       | 88         | 0.6        | 12780.5          | 47092.4          | 4.6                 | 28.5              | 29.8        | 6.2         | 96          |
| FM-5B              | 3.6                 | 8/28/89       | 812           | 30         | 15.6       | 88         | 0.6        | 12780.5          | 47092.4          | 4.6                 | 29.4              | 29.8        | 6.3         | 97          |
| FM-7S              | 1.0                 | 8/28/89       | 831           | 30         | 15.5       | 87         | 58.8       | 12798.6          | 47092.2          | 4.3                 | 26.9              | 29.5        | 6.5         | 98          |

## MOBILE BAY CRUISE MB-04

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 7.3 | -            | 0.17        | 0.00        | 0.31        | 0.28        | 53.33      | -           | -           | -           | -          | -          | -          |
| MR-1B              | 14.2                | -   | -            | 1.37        | 0.35        | 0.41        | 4.33        | 36.44      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 7.5 | -            | 0.04        | 0.00        | 0.03        | 0.07        | 81.09      | -           | -           | -           | -          | -          | -          |
| MR-2B              | 2.4                 | 6.8 | -            | 0.41        | 0.30        | 0.25        | 4.33        | 88.17      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 7.3 | -            | 0.17        | 0.01        | 0.03        | 0.07        | 59.18      | -           | -           | -           | -          | -          | -          |
| DR-2S              | 1.0                 | 7.8 | -            | 0.17        | -           | -           | 0.22        | 59.38      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 7.8 | -            | 0.24        | 0.00        | 0.08        | 0.13        | 59.64      | -           | -           | -           | -          | -          | -          |
| DR-3B              | 11.8                | -   | -            | 0.88        | 0.41        | 0.13        | 2.87        | 29.13      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 7.7 | -            | 0.09        | 0.01        | 0.03        | 0.10        | 76.53      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.7                 | 7.0 | -            | 0.78        | 0.92        | 0.52        | 6.50        | 89.50      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 7.5 | -            | 0.17        | 0.05        | 0.08        | 0.40        | 71.34      | -           | -           | -           | -          | -          | -          |
| DR-7B              | 2.0                 | 6.9 | -            | 0.08        | 0.08        | 0.09        | 0.37        | 76.72      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 7.8 | -            | 0.22        | 0.02        | 0.01        | 0.07        | 64.88      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | -   | -            | 0.17        | 0.01        | 0.03        | 0.04        | 70.88      | -           | -           | -           | -          | -          | -          |
| PC-3B              | 12.7                | -   | -            | 0.47        | 0.15        | 0.22        | 2.60        | 32.21      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | -   | -            | 0.22        | 0.01        | 0.03        | 0.10        | 56.61      | -           | -           | -           | -          | -          | -          |
| PC-5B              | 2.4                 | -   | -            | 0.26        | 0.00        | 0.07        | 0.17        | 76.77      | -           | -           | -           | -          | -          | -          |
| FR-1S              | 1.0                 | -   | -            | 0.22        | 0.00        | 0.08        | 0.37        | 62.05      | -           | -           | -           | -          | -          | -          |
| FR-2S              | 1.0                 | -   | -            | 0.17        | 0.00        | 0.06        | 0.25        | 71.04      | -           | -           | -           | -          | -          | -          |
| FR-2B              | 2.7                 | -   | -            | 0.41        | 0.09        | 0.07        | 0.23        | 81.27      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -   | -            | 0.22        | 0.00        | 0.06        | 0.10        | 71.04      | -           | -           | -           | -          | -          | -          |
| FR-3B              | 12.7                | -   | -            | 0.75        | 0.05        | 0.24        | 2.37        | 28.67      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | -   | -            | 0.19        | 0.00        | 0.05        | 0.04        | 67.13      | -           | -           | -           | -          | -          | -          |
| FR-7S              | 1.0                 | -   | -            | 0.42        | 0.01        | 0.03        | 0.04        | 63.75      | -           | -           | -           | -          | -          | -          |
| WB-3S              | 1.0                 | -   | -            | 0.22        | 0.00        | 0.06        | 0.07        | 53.22      | -           | -           | -           | -          | -          | -          |
| WB-3B              | 11.2                | -   | -            | 0.57        | 0.12        | 0.20        | 1.57        | 34.93      | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | -   | -            | 0.42        | 0.03        | 0.02        | 0.10        | 35.47      | -           | -           | -           | -          | -          | -          |
| CP-3B              | 13.6                | -   | -            | 0.21        | 0.15        | 0.22        | 0.63        | 11.43      | -           | -           | -           | -          | -          | -          |

MOBILE BAY CRUISE MB-04

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-1S              | 1.0                 | 7.6 | -            | 0.42        | 0.04        | 0.06        | 0.22        | 25.15      | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | 7.5 | -            | 0.27        | 0.03        | 0.03        | 0.07        | 21.51      | -           | -           | -           | -          | -          | -          |
| FM-3B              | 12.7                | -   | -            | 0.34        | 0.00        | 0.19        | 0.70        | 11.98      | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -   | -            | 0.17        | 0.00        | 0.10        | 0.04        | 14.63      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.6                 | -   | -            | 0.23        | 0.00        | 0.07        | 0.17        | 18.79      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -   | -            | 0.17        | 0.02        | 0.01        | 0.07        | 21.09      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-04

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 14.50                  | 14.69           | 1.62           | 70             | -                | -                 |
| MR-1B              | 14.2                | -                      | -               | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 9.30                   | 12.02           | 1.34           | 110            | -                | -                 |
| MR-2B              | 2.4                 | -                      | -               | -              | -              | -                | -                 |
| DR-1S              | 1.0                 | 13.80                  | 12.02           | 1.35           | 90             | -                | -                 |
| DR-2S              | 1.0                 | 15.80                  | 13.35           | 1.27           | 100            | -                | -                 |
| DR-3S              | 1.0                 | 14.80                  | 13.35           | 1.22           | 100            | -                | -                 |
| DR-3B              | 11.8                | -                      | -               | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 15.30                  | 10.68           | 1.22           | 100            | -                | -                 |
| DR-5B              | 2.7                 | -                      | -               | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 10.50                  | 14.69           | 1.39           | 100            | -                | -                 |
| DR-7B              | 2.0                 | -                      | -               | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 9.00                   | 10.68           | 1.00           | 120            | -                | -                 |
| PC-3S              | 1.0                 | 7.00                   | 8.01            | 1.13           | 90             | -                | -                 |
| PC-3B              | 12.7                | -                      | -               | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 14.50                  | 10.68           | 1.22           | 85             | -                | -                 |
| PC-5B              | 2.4                 | -                      | -               | -              | -              | -                | -                 |
| FR-1S              | 1.0                 | 14.30                  | 10.68           | 1.07           | 125            | -                | -                 |
| FR-2S              | 1.0                 | 13.00                  | 10.68           | 1.12           | 125            | -                | -                 |
| FR-2B              | 2.7                 | -                      | -               | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 8.20                   | 8.01            | 1.29           | 100            | -                | -                 |
| FR-3B              | 12.7                | -                      | -               | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 15.30                  | 10.68           | 1.25           | 130            | -                | -                 |
| FR-7S              | 1.0                 | 22.50                  | 8.01            | 1.37           | 90             | -                | -                 |
| WB-3S              | 1.0                 | 19.50                  | 4.97            | 1.07           | -              | -                | -                 |
| WB-3B              | 11.2                | -                      | -               | -              | -              | -                | -                 |
| CP-3S              | 1.0                 | 14.40                  | 6.41            | 0.80           | 120            | -                | -                 |
| CP-3B              | 13.6                | -                      | -               | -              | -              | -                | -                 |



MOBILE BAY CRUISE MB-04

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| FM-1S              | 1.0                 | 12.80                  | 4.27            | -              | -              | -                | -                 |
| FM-3S              | 1.0                 | 5.00                   | 4.27            | 0.57           | 160            | -                | -                 |
| FM-3B              | 12.7                | -                      | -               | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 14.70                  | 1.34            | 0.58           | 290            | -                | -                 |
| FM-5B              | 3.6                 | -                      | -               | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 7.00                   | 5.34            | 0.62           | 225            | -                | -                 |

## ***Mobile Bay Cruise Report***

***MB-05***

22 September 1989

***Vessel:*** *R/V Deborah B.*

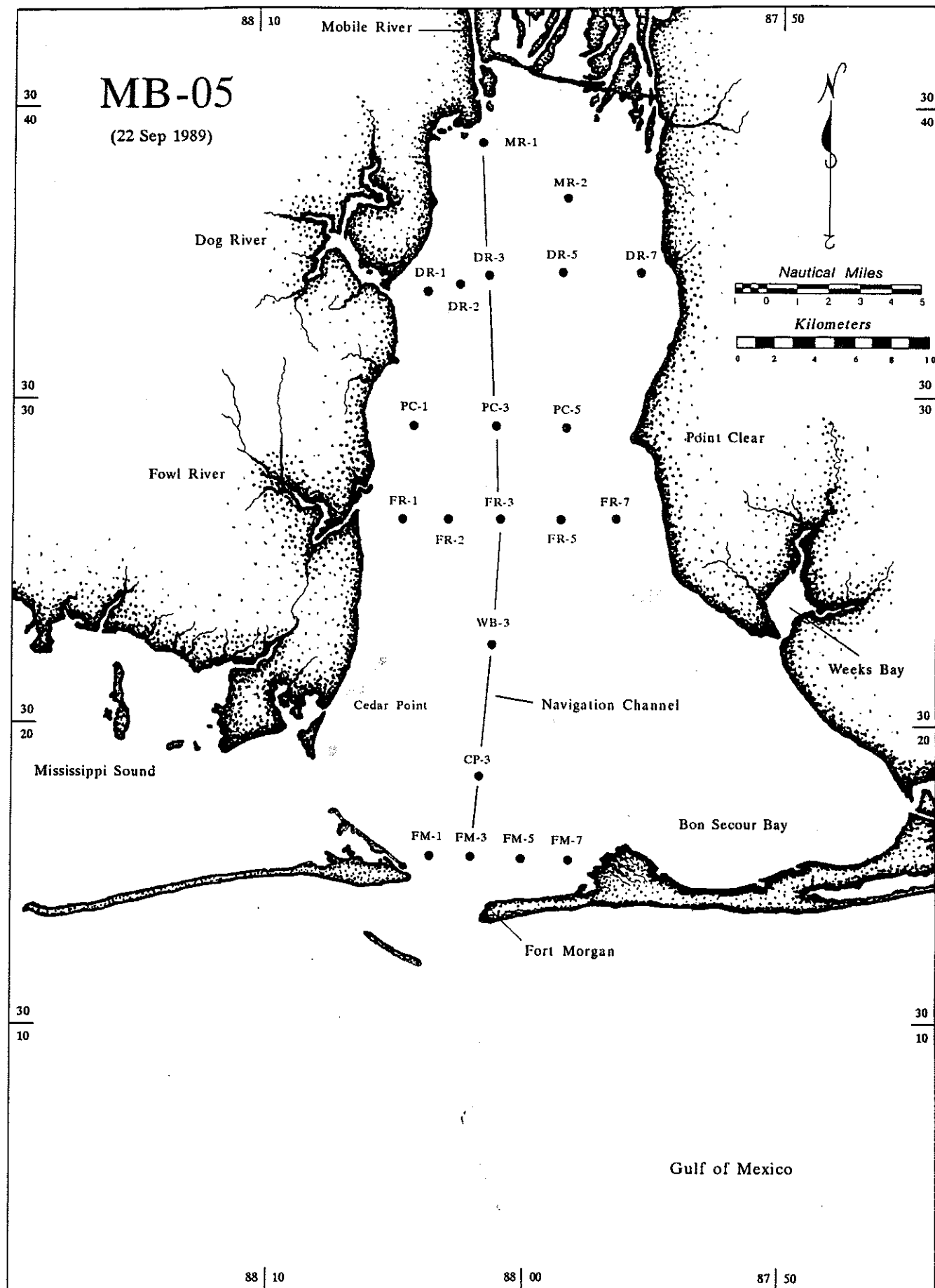
***Operation Area:*** Mobile Bay: from Fort Morgan to Mobile River

***Scientific Party:*** Jon Pennock (Chief Scientist)  
Tom Hopkins  
Felix Fernandez  
Victor Fernandez

***Supporting Agency:*** Marine Environmental Sciences Consortium

***Research Objectives:*** Niskin bottle hydrocast samples were made for nutrients, chlorophyll and suspended sediments at 21 surface stations (10 of those including bottom water casts). Profiles of salinity, temperature, dissolved oxygen and pH were obtained using a Hydrolab II at all stations. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles were obtained with an Inter-Ocean S4-P current meter at all stations.

***Cruise Summary:*** Departed DISL 0710. Deadheaded to station FM-1. Began sampling 0730. Stations were continued going upbay through station MR-1. Returned to DISL 1530.



## MOBILE BAY CRUISE MB-05

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 9/22/89       | 1424          | 30         | 38.1       | 88          | 2.0         | 12779.7          | 47180.2          | 12.2                | 10.6              | 28.7        | 6.0         | 83          |
| MR-1B              | 11.2                | 9/22/89       | 1424          | 30         | 38.1       | 88          | 2.0         | 12779.7          | 47180.2          | 12.2                | 27.0              | 27.8        | 4.2         | 63          |
| MR-2S              | 1.0                 | 9/22/89       | 1356          | 30         | 36.4       | 87          | 58.6        | 12815.2          | 47175.4          | 3.1                 | 7.8               | 28.2        | 6.7         | 89          |
| DR-1S              | 1.0                 | 9/22/89       | 1226          | 30         | 32.8       | 88          | 4.0         | 12754.9          | 47159.9          | 2.7                 | 9.2               | 26.5        | 8.3         | 108         |
| DR-2S              | 1.0                 | 9/22/89       | 1240          | 30         | 32.9       | 88          | 2.8         | 12767.7          | 47160.6          | 2.4                 | 9.9               | 26.7        | 7.9         | 104         |
| DR-3S              | 1.0                 | 9/22/89       | 1253          | 30         | 34.0       | 88          | 1.7         | 12780.4          | 47165.3          | 12.8                | 12.8              | 27.3        | 6.8         | 92          |
| DR-3B              | 11.8                | 9/22/89       | 1253          | 30         | 34.0       | 88          | 1.7         | 12780.4          | 47165.3          | 12.8                | 28.9              | 27.8        | 4.6         | 69          |
| DR-5S              | 1.0                 | 9/22/89       | 1319          | 30         | 34.9       | 87          | 58.5        | 12814.5          | 47170.1          | 3.4                 | 11.4              | 26.4        | 7.7         | 102         |
| DR-7S              | 1.0                 | 9/22/89       | 1337          | 30         | 35.3       | 87          | 56.1        | 12840.5          | 47172.4          | 2.7                 | 10.9              | 26.3        | 7.8         | 103         |
| PC-1S              | 1.0                 | 9/22/89       | 1202          | 30         | 29.1       | 88          | 4.1         | 12752.2          | 47146.0          | 2.7                 | 10.6              | 26.7        | 8.0         | 106         |
| PC-3S              | 1.0                 | 9/22/89       | 1137          | 30         | 28.6       | 88          | 1.0         | 12783.9          | 47145.0          | 14.6                | 12.6              | 26.6        | 7.9         | 106         |
| PC-3B              | 13.6                | 9/22/89       | 1137          | 30         | 28.6       | 88          | 1.0         | 12783.9          | 47145.0          | 14.6                | 29.3              | 27.8        | 4.7         | 70          |
| PC-5S              | 1.0                 | 9/22/89       | 1119          | 30         | 28.4       | 87          | 58.0        | 12815.2          | 47145.2          | 3.7                 | 13.7              | 26.6        | 7.9         | 106         |
| PC-5B              | 2.7                 | 9/22/89       | 1119          | 30         | 28.4       | 87          | 58.0        | 12815.2          | 47145.2          | 3.7                 | 15.1              | 26.1        | 6.9         | 92          |
| FR-1S              | 1.0                 | 9/22/89       | 951           | 30         | 26.9       | 88          | 4.8         | 12743.6          | 47137.0          | 3.4                 | 10.7              | 25.9        | 7.6         | 99          |
| FR-2S              | 1.0                 | 9/22/89       | 1003          | 30         | 26.7       | 88          | 2.7         | 12765.4          | 47137.2          | 3.7                 | 12.0              | 25.9        | 7.6         | 101         |
| FR-2B              | 2.7                 | 9/22/89       | 1003          | 30         | 26.7       | 88          | 2.7         | 12765.4          | 47137.2          | 3.7                 | 19.5              | 26.9        | 5.3         | 75          |
| FR-3S              | 1.0                 | 9/22/89       | 1017          | 30         | 26.4       | 88          | 0.8         | 12785.1          | 47136.5          | 15.2                | 13.4              | 26.3        | 7.6         | 102         |
| FR-3B              | 14.2                | 9/22/89       | 1017          | 30         | 26.4       | 88          | 0.8         | 12785.1          | 47136.5          | 15.2                | 29.7              | 27.8        | 4.6         | 70          |
| FR-5S              | 1.0                 | 9/22/89       | 1038          | 30         | 26.4       | 87          | 58.1        | 12813.6          | 47137.3          | 3.7                 | 14.9              | 26.4        | 7.5         | 101         |
| FR-7S              | 1.0                 | 9/22/89       | 1053          | 30         | 26.3       | 87          | 56.3        | 12832.6          | 47137.2          | 3.1                 | 16.0              | 26.4        | 7.3         | 99          |
| WB-3S              | 1.0                 | 9/22/89       | 917           | 30         | 22.6       | 88          | 1.3         | 12777.1          | 47121.1          | 12.8                | 14.9              | 25.8        | 7.5         | 100         |
| WB-3B              | 11.8                | 9/22/89       | 917           | 30         | 22.6       | 88          | 1.3         | 12777.1          | 47121.1          | 12.8                | 29.5              | 27.6        | 6.0         | 89          |
| CP-3S              | 1.0                 | 9/22/89       | 848           | 30         | 18.3       | 88          | 1.9         | 12768.3          | 47013.4          | 15.2                | 20.9              | 26.0        | 8.0         | 111         |
| CP-3B              | 14.2                | 9/22/89       | 848           | 30         | 18.3       | 88          | 1.9         | 12768.3          | 47013.4          | 15.2                | 30.8              | 27.9        | 5.8         | 88          |
| FM-1S              | 1.0                 | 9/22/89       | 730           | 30         | 15.7       | 88          | 3.7         | 12748.3          | 47092.1          | 4.9                 | 19.4              | 26.3        | 6.5         | 90          |
| FM-3S              | 1.0                 | 9/22/89       | 746           | 30         | 15.6       | 88          | 2.3         | 12762.8          | 47092.1          | 12.8                | 20.5              | 26.3        | 6.8         | 95          |
| FM-3B              | 11.8                | 9/22/89       | 746           | 30         | 15.6       | 88          | 2.3         | 12762.8          | 47092.1          | 12.8                | 31.4              | 27.8        | 6.0         | 92          |

MOBILE BAY CRUISE MB-05

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : | LON<br>DEG : | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|--------------|--------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-5S              | 1.0                 | 9/22/89       | 808           | 30 :         | 15.6         | 88 :       | 0.6              | 47092.4          | 4.6                 | 23.0              | 26.2        | 6.9         | 97          |
| FM-5B              | 3.6                 | 9/22/89       | 808           | 30 :         | 15.6         | 88 :       | 0.6              | 47092.4          | 4.6                 | 31.1              | 27.5        | 6.2         | 94          |
| FM-7S              | 1.0                 | 9/22/89       | 823           | 30 :         | 15.7         | 87 :       | 58.8             | 47092.8          | 4.0                 | 26.9              | 27.8        | 6.4         | 95          |

## MOBILE BAY CRUISE MB-05

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -   | -            | 0.65        | 2.93        | 1.27        | 2.00        | 41.35      | -           | -           | -           | -          | -          | -          |
| MR-1B              | 11.2                | -   | -            | 1.07        | 0.40        | 0.32        | 6.65        | 19.31      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -   | -            | 0.38        | 0.07        | 0.05        | 0.32        | 55.43      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | -   | -            | 0.38        | 0.01        | 0.05        | 0.32        | 51.99      | -           | -           | -           | -          | -          | -          |
| DR-2S              | 1.0                 | -   | -            | 0.33        | 0.00        | 0.05        | 0.30        | 50.39      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -   | -            | 0.27        | 0.00        | 0.05        | 0.32        | 49.12      | -           | -           | -           | -          | -          | -          |
| DR-3B              | 11.8                | -   | -            | 0.81        | 0.09        | 0.21        | 4.00        | 12.81      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -   | -            | 0.44        | 0.02        | 0.05        | 0.27        | 56.89      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -   | -            | 0.85        | 0.04        | 0.05        | 0.14        | 56.99      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | -   | -            | 0.44        | 0.02        | 0.03        | 0.27        | 50.82      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | -   | -            | 0.44        | 0.03        | 0.05        | 0.27        | 48.89      | -           | -           | -           | -          | -          | -          |
| PC-3B              | 13.6                | -   | -            | 0.61        | 0.06        | 0.21        | 2.85        | 12.34      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | -   | -            | 0.55        | 0.04        | 0.05        | 0.22        | 49.40      | -           | -           | -           | -          | -          | -          |
| PC-5B              | 2.7                 | -   | -            | 0.71        | 0.03        | 0.04        | 0.37        | 50.35      | -           | -           | -           | -          | -          | -          |
| FR-1S              | 1.0                 | -   | -            | 0.60        | 0.01        | 0.05        | 0.00        | 53.55      | -           | -           | -           | -          | -          | -          |
| FR-2S              | 1.0                 | -   | -            | 0.55        | 0.00        | 0.05        | 0.00        | 51.24      | -           | -           | -           | -          | -          | -          |
| FR-2B              | 2.7                 | -   | -            | 0.61        | 0.05        | 0.04        | 0.08        | 47.80      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -   | -            | 0.55        | 0.00        | 0.03        | 0.05        | 49.31      | -           | -           | -           | -          | -          | -          |
| FR-3B              | 14.2                | -   | -            | 0.56        | 0.13        | 0.15        | 2.42        | 11.40      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | -   | -            | 0.60        | 0.00        | 0.05        | 0.24        | 48.08      | -           | -           | -           | -          | -          | -          |
| FR-7S              | 1.0                 | -   | -            | 0.65        | 0.01        | 0.05        | 0.22        | 44.60      | -           | -           | -           | -          | -          | -          |
| WB-3S              | 1.0                 | 7.5 | -            | 0.60        | 0.01        | 0.05        | 0.00        | 45.64      | -           | -           | -           | -          | -          | -          |
| WB-3B              | 11.8                | -   | -            | 0.46        | 0.06        | 0.04        | 0.42        | 11.21      | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | 7.7 | -            | 0.63        | 0.03        | 0.03        | 0.00        | 33.91      | -           | -           | -           | -          | -          | -          |
| CP-3B              | 14.2                | 8.0 | -            | 0.25        | 0.10        | 0.06        | 0.20        | 6.22       | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 7.4 | -            | 0.71        | 0.26        | 0.07        | 0.32        | 30.28      | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | 7.6 | -            | 0.71        | 0.08        | 0.05        | 0.38        | 32.97      | -           | -           | -           | -          | -          | -          |
| FM-3B              | 11.8                | 8.0 | -            | 0.23        | 0.07        | 0.05        | 0.08        | 4.95       | -           | -           | -           | -          | -          | -          |

MOBILE BAY CRUISE MB-05

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-5S              | 1.0                 | 7.5 | -            | 0.60        | 0.02        | 0.03        | 0.00        | 27.50      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.6                 | 7.9 | -            | 0.36        | 0.01        | 0.04        | 0.48        | 10.60      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 7.6 | -            | 0.33        | 0.01        | 0.03        | 0.00        | 10.80      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-05

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 18.60                  | 12.82           | 1.49           | 110            | -                | -                 |
| MR-1B              | 11.2                | -                      | -               | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 15.20                  | 18.16           | 1.18           | 160            | -                | -                 |
| DR-1S              | 1.0                 | 17.00                  | 3.20            | 1.45           | 125            | -                | -                 |
| DR-2S              | 1.0                 | 14.40                  | 8.54            | 1.42           | 100            | -                | -                 |
| DR-3S              | 1.0                 | 18.00                  | 18.16           | 1.15           | 120            | -                | -                 |
| DR-3B              | 11.8                | -                      | -               | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 16.60                  | 8.54            | 1.52           | 125            | -                | -                 |
| DR-7S              | 1.0                 | 14.60                  | 8.54            | 0.87           | 150            | -                | -                 |
| PC-1S              | 1.0                 | 16.20                  | 4.27            | 1.00           | 130            | -                | -                 |
| PC-3S              | 1.0                 | 20.20                  | 10.68           | 1.02           | 120            | -                | -                 |
| PC-3B              | 13.6                | -                      | -               | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 21.20                  | 5.34            | 1.09           | 125            | -                | -                 |
| PC-5B              | 2.7                 | -                      | -               | -              | -              | -                | -                 |
| FR-1S              | 1.0                 | 19.20                  | 4.27            | 1.47           | 110            | -                | -                 |
| FR-2S              | 1.0                 | 16.00                  | 5.34            | 1.09           | 150            | -                | -                 |
| FR-2B              | 2.7                 | -                      | -               | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 16.60                  | 3.20            | 0.92           | 180            | -                | -                 |
| FR-3B              | 14.2                | -                      | -               | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 17.60                  | -               | 1.05           | 150            | -                | -                 |
| FR-7S              | 1.0                 | 22.60                  | 6.41            | 1.36           | 125            | -                | -                 |
| WB-3S              | 1.0                 | 16.20                  | 5.34            | 0.99           | 150            | -                | -                 |
| WB-3B              | 11.8                | -                      | -               | -              | -              | -                | -                 |
| CP-3S              | 1.0                 | 10.10                  | 3.34            | 0.62           | 180            | -                | -                 |
| CP-3B              | 14.2                | -                      | -               | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 11.00                  | 4.45            | 0.89           | 100            | -                | -                 |
| FM-3S              | 1.0                 | 10.10                  | 4.45            | 0.49           | 145            | -                | -                 |
| FM-3B              | 11.8                | -                      | -               | -              | -              | -                | -                 |



MOBILE BAY CRUISE MB-05

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| FM-5S              | 1.0                 | 9.95                   | 2.00            | 0.54           | 200            | -                | -                 |
| FM-5B              | 3.6                 | -                      | -               | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 10.00                  | 6.01            | 0.72           | 175            | -                | -                 |

## ***Mobile Bay Cruise Report***

***MB-06***

11 December 1989

***Vessel:*** *R/V Deborah B.*

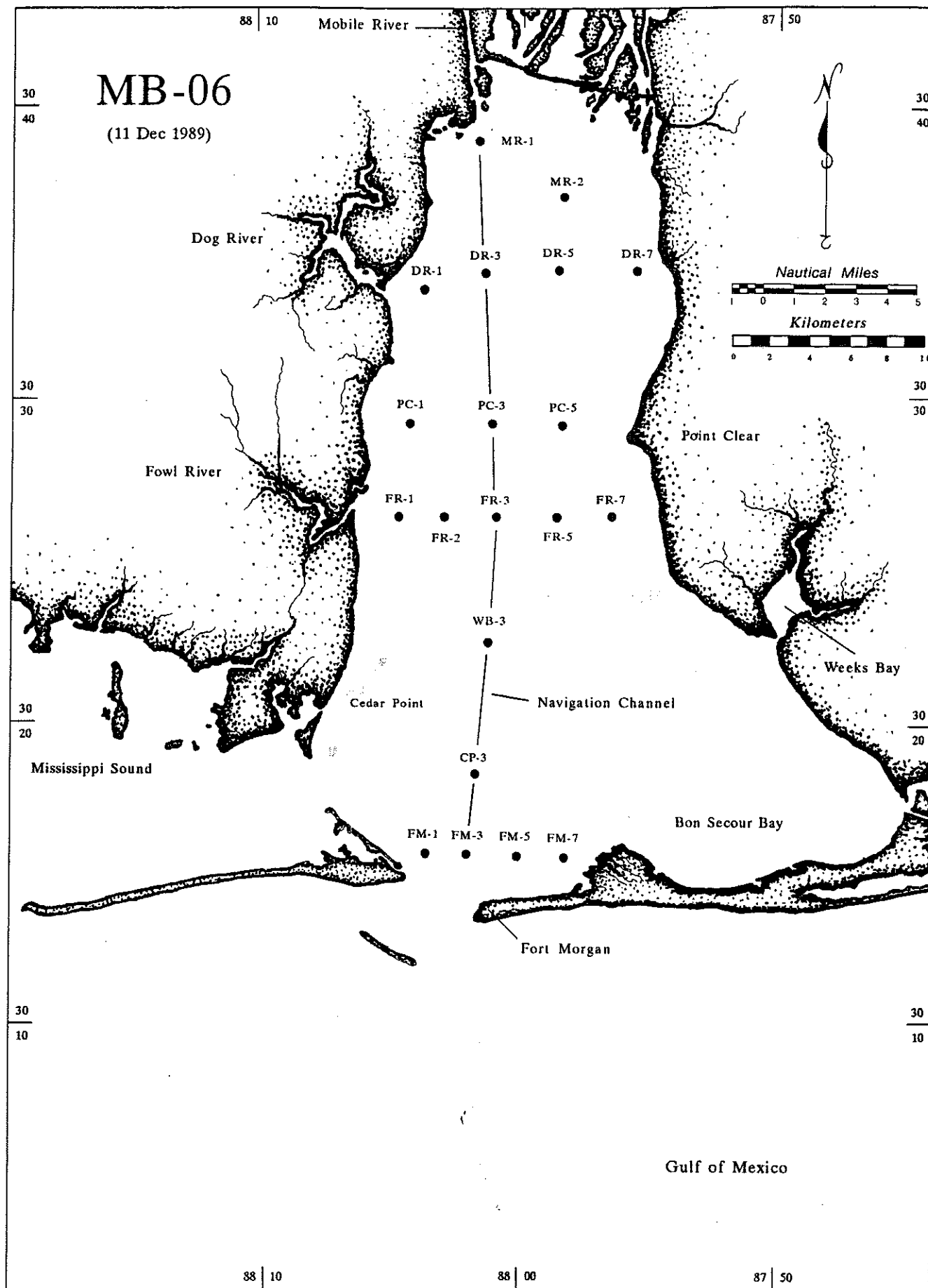
***Operation Area:*** Mobile Bay: from Fort Morgan to Mobile River

***Scientific Party:*** Jon Pennock (Chief Scientist)  
Tom Hopkins

***Supporting Agency:*** Marine Environmental Sciences Consortium

***Research Objectives:*** Niskin bottle hydrocast samples were made for nutrients, chlorophyll and suspended sediments at 20 surface stations (10 of those including bottom water casts). Surface and bottom salinity, temperature, dissolved oxygen and pH were obtained using a Hydrolab II at all stations. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles were obtained with an Inter-Ocean S4-P current meter at all stations.

***Cruise Summary:*** Departed DISL 0710. Deadheaded to station FM-1. Began sampling 0720. Stations were continued going upbay through station MR-1. Returned to DISL 1600.



## MOBILE BAY CRUISE MB-06

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 12/11/89      | 1412          | 30         | 38.2       | 88          | 1.9         | 12780.7          | 47180.7          | 11.6                | 0.0               | 12.7        | 10.6        | 100         |
| MR-1B              | 10.6                | 12/11/89      | 1412          | 30         | 38.2       | 88          | 1.9         | 12780.7          | 47180.7          | 11.6                | 29.1              | 17.2        | 6.4         | 79          |
| MR-2S              | 1.0                 | 12/11/89      | 1345          | 30         | 36.1       | 87          | 58.6        | 12814.6          | 46174.4          | 3.1                 | 0.0               | 12.6        | 10.5        | 98          |
| DR-1S              | 1.0                 | 12/11/89      | 1225          | 30         | 32.8       | 88          | 4.0         | 12754.9          | 47159.9          | 2.1                 | 3.8               | 12.6        | 10.9        | 105         |
| DR-3S              | 1.0                 | 12/11/89      | 1243          | 30         | 33.9       | 88          | 1.6         | 12780.9          | 47165.1          | 13.4                | 4.5               | 13.4        | 10.0        | 99          |
| DR-3B              | 12.4                | 12/11/89      | 1243          | 30         | 33.9       | 88          | 1.6         | 12780.9          | 47165.1          | 13.4                | 30.1              | 17.3        | 6.5         | 81          |
| DR-5S              | 1.0                 | 12/11/89      | 1312          | 30         | 34.3       | 87          | 58.5        | 12814.9          | 47167.7          | 3.1                 | 0.0               | 12.6        | 10.4        | 98          |
| DR-7S              | 1.0                 | 12/11/89      | 1328          | 30         | 34.6       | 87          | 56.1        | 12840.2          | 47169.9          | 2.4                 | 0.6               | 12.0        | 11.1        | 103         |
| PC-1S              | 1.0                 | 12/11/89      | 1205          | 30         | 28.9       | 88          | 4.1         | 12752.0          | 47145.0          | 2.4                 | 7.2               | 12.3        | 10.8        | 105         |
| PC-3S              | 1.0                 | 12/11/89      | 1137          | 30         | 28.7       | 88          | 1.0         | 12784.0          | 47145.4          | 9.8                 | 3.4               | 12.2        | 10.5        | 100         |
| PC-3B              | 8.8                 | 12/11/89      | 1137          | 30         | 28.7       | 88          | 1.0         | 12784.0          | 47145.4          | 9.8                 | 31.1              | 17.5        | 6.4         | 81          |
| PC-5S              | 1.0                 | 12/11/89      | 1118          | 30         | 28.4       | 87          | 58.0        | 12815.3          | 47145.1          | 3.1                 | 8.9               | 12.7        | 10.1        | 101         |
| PC-5B              | 2.1                 | 12/11/89      | 1118          | 30         | 28.4       | 87          | 58.0        | 12815.3          | 47145.1          | 3.1                 | 11.9              | 12.8        | 8.4         | 85          |
| FR-1S              | 1.0                 | 12/11/89      | 945           | 30         | 26.9       | 88          | 4.7         | 12744.1          | 47137.2          | 2.7                 | 6.0               | 11.7        | 11.7        | 12          |
| FR-2S              | 1.0                 | 12/11/89      | 1000          | 30         | 26.8       | 88          | 2.7         | 12765.7          | 47137.2          | 2.7                 | 5.2               | 11.7        | 11.5        | 109         |
| FR-2B              | 1.7                 | 12/11/89      | 1000          | 30         | 26.8       | 88          | 2.7         | 12765.7          | 47137.2          | 2.7                 | 7.8               | 12.2        | 9.7         | 95          |
| FR-3S              | 1.0                 | 12/11/89      | 1018          | 30         | 26.6       | 88          | 0.8         | 12784.8          | 47137.4          | 12.8                | 2.9               | 11.3        | 11.3        | 105         |
| FR-3B              | 11.8                | 12/11/89      | 1018          | 30         | 26.6       | 88          | 0.8         | 12784.8          | 47137.4          | 12.8                | 29.7              | 16.8        | 6.7         | 83          |
| FR-5S              | 1.0                 | 12/11/89      | 1045          | 30         | 26.4       | 87          | 58.1        | 12813.4          | 47137.3          | 3.1                 | 7.8               | 12.3        | 11.0        | 108         |
| FR-7S              | 1.0                 | 12/11/89      | 1100          | 30         | 26.3       | 87          | 56.2        | 12832.7          | 47137.4          | 2.4                 | 7.4               | 12.1        | 10.9        | 106         |
| WB-3S              | 1.0                 | 12/11/89      | 917           | 30         | 22.6       | 88          | 1.2         | 12778.2          | 47121.3          | 12.2                | 6.9               | 11.7        | 11.0        | 106         |
| WB-3B              | 11.2                | 12/11/89      | 917           | 30         | 22.6       | 88          | 1.2         | 12778.2          | 47121.3          | 12.2                | 30.5              | 17.0        | 6.9         | 85          |
| CP-3S              | 1.0                 | 12/11/89      | 850           | 30         | 18.4       | 88          | 1.9         | 12769.0          | 47103.6          | 10.7                | 8.8               | 11.8        | 10.9        | 106         |
| CP-3B              | 9.7                 | 12/11/89      | 850           | 30         | 18.4       | 88          | 1.9         | 12769.0          | 47103.6          | 10.7                | 30.5              | 16.9        | 7.2         | 89          |
| FM-1S              | 1.0                 | 12/11/89      | 720           | 30         | 15.7       | 88          | 3.7         | 12748.3          | 47092.2          | 4.3                 | 9.2               | 11.8        | 11.0        | 107         |
| FM-3S              | 1.0                 | 12/11/89      | 743           | 30         | 15.4       | 88          | 2.4         | 12762.1          | 47091.2          | 13.7                | 9.9               | 11.7        | 11.1        | 109         |
| FM-3B              | 12.7                | 12/11/89      | 743           | 30         | 15.4       | 88          | 2.4         | 12762.1          | 47091.2          | 13.7                | 29.2              | 16.3        | 7.7         | 93          |
| FM-5S              | 1.0                 | 12/11/89      | 809           | 30         | 15.6       | 88          | 0.6         | 12780.2          | 47092.3          | 3.7                 | 9.9               | 11.9        | 11.8        | 116         |

MOBILE BAY CRUISE MB-06

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : | LON<br>DEG : | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|--------------|--------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-5B              | 2.7                 | 12/11/89      | 809           | 30 :         | 15.6         | 88 :       | 0.6              | 12780.2          | 47092.3             | 3.7               | 22.3        | 14.3        | 8.8         |
| FM-7S              | 1.0                 | 12/11/89      | 825           | 30 :         | 15.5         | 87 :       | 58.8             | 12798.7          | 47092.3             | 3.4               | 13.7        | 11.5        | 11.8        |
|                    |                     |               |               |              |              |            |                  |                  |                     |                   |             |             | 98          |
|                    |                     |               |               |              |              |            |                  |                  |                     |                   |             |             | 117         |

## MOBILE BAY CRUISE MB-06

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 7.9 | -            | 1.50        | 15.52       | 0.14        | 3.54        | 2.88       | -           | -           | -           | -          | -          | -          |
| MR-1B              | 10.6                | 7.8 | -            | -           | 2.31        | 0.00        | -           | 22.52      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 7.9 | -            | 1.11        | 1.37        | 0.10        | 3.43        | 1.98       | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 7.8 | -            | 0.64        | 0.72        | 0.09        | 1.89        | 14.14      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 7.6 | -            | 0.75        | 1.17        | 0.11        | 3.52        | 15.08      | -           | -           | -           | -          | -          | -          |
| DR-3B              | 12.4                | 7.9 | -            | 0.56        | 0.93        | 0.00        | 3.43        | 19.59      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 7.8 | -            | 1.13        | 0.86        | 0.15        | 3.16        | 2.75       | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 7.7 | -            | 1.05        | 0.83        | 0.13        | 3.49        | 5.09       | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 8.0 | -            | 0.49        | 0.58        | 0.04        | 0.39        | 20.09      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 7.8 | -            | 0.75        | 0.97        | 0.11        | 3.49        | 10.34      | -           | -           | -           | -          | -          | -          |
| PC-3B              | 8.8                 | 7.9 | -            | 0.56        | 3.32        | 0.59        | 3.82        | 25.63      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 7.9 | -            | 0.69        | 0.94        | 0.04        | 1.89        | 26.00      | -           | -           | -           | -          | -          | -          |
| PC-5B              | 2.1                 | 7.8 | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| FR-1S              | 1.0                 | 8.2 | -            | 0.24        | 0.29        | 0.04        | 0.42        | 18.36      | -           | -           | -           | -          | -          | -          |
| FR-2S              | 1.0                 | 8.1 | -            | 0.62        | 0.81        | 0.04        | 1.92        | 18.27      | -           | -           | -           | -          | -          | -          |
| FR-2B              | 1.7                 | 7.8 | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 7.9 | -            | 0.85        | 0.28        | 0.11        | 2.68        | 11.33      | -           | -           | -           | -          | -          | -          |
| FR-3B              | 11.8                | 7.9 | -            | 0.44        | 1.83        | 0.59        | 3.43        | 16.76      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 7.9 | -            | 0.34        | 1.29        | 0.04        | 0.51        | 10.58      | -           | -           | -           | -          | -          | -          |
| FR-7S              | 1.0                 | 8.0 | -            | 0.57        | 0.76        | 0.04        | 0.33        | 21.22      | -           | -           | -           | -          | -          | -          |
| WB-3S              | 1.0                 | 7.9 | -            | 0.69        | 0.52        | 0.04        | 2.44        | 20.75      | -           | -           | -           | -          | -          | -          |
| WB-3B              | 11.2                | 7.9 | -            | 0.44        | 0.04        | 0.00        | 2.08        | 15.95      | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | 8.1 | -            | 0.85        | 0.18        | 0.02        | 0.24        | 26.33      | -           | -           | -           | -          | -          | -          |
| CP-3B              | 9.7                 | 7.9 | -            | 0.28        | 3.03        | 0.35        | 0.42        | 21.80      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 8.0 | -            | 0.19        | 11.81       | 0.49        | 0.63        | 94.48      | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | 7.9 | -            | 0.24        | 0.87        | 0.01        | 0.33        | 22.02      | -           | -           | -           | -          | -          | -          |
| FM-3B              | 12.7                | 7.9 | -            | 0.33        | 2.67        | 0.42        | 3.02        | 21.22      | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.1 | -            | 0.08        | 0.42        | 0.01        | 0.21        | 25.25      | -           | -           | -           | -          | -          | -          |

MOBILE BAY CRUISE MB-06

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-5B              | 2.7                 | 8.0 | -            | 0.28        | 6.82        | 0.40        | 0.73        | 55.77      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 8.1 | -            | 0.03        | 0.01        | 0.00        | 0.00        | 54.97      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-06

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | SESTON CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|------------------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 27.30                  | 7.12                   | 3.15           | 45             | -                | -                 |
| MR-1B              | 10.6                | -                      | -                      | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 106.00                 | 10.68                  | 4.56           | 20             | -                | -                 |
| DR-1S              | 1.0                 | 64.00                  | 17.80                  | 1.93           | -              | -                | -                 |
| DR-3S              | 1.0                 | 61.30                  | 12.46                  | 1.83           | 55             | -                | -                 |
| DR-3B              | 12.4                | -                      | -                      | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 43.30                  | 5.34                   | 2.12           | 50             | -                | -                 |
| DR-7S              | 1.0                 | 36.00                  | 8.50                   | 1.76           | 40             | -                | -                 |
| PC-1S              | 1.0                 | 30.80                  | -                      | 1.18           | 85             | -                | -                 |
| PC-3S              | 1.0                 | 30.50                  | -                      | 1.43           | 80             | -                | -                 |
| PC-3B              | 8.8                 | -                      | -                      | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 23.90                  | 10.68                  | 1.11           | 95             | -                | -                 |
| PC-5B              | 2.1                 | -                      | -                      | -              | -              | -                | -                 |
| FR-1S              | 1.0                 | 22.30                  | 19.22                  | 1.51           | 100            | -                | -                 |
| FR-2S              | 1.0                 | 42.10                  | -                      | 1.49           | 60             | -                | -                 |
| FR-2B              | 1.7                 | -                      | -                      | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | -                      | -                      | 1.35           | 40             | -                | -                 |
| FR-3B              | 11.8                | -                      | -                      | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 22.90                  | -                      | 1.17           | 110            | -                | -                 |
| FR-7S              | 1.0                 | 22.00                  | -                      | 1.00           | 95             | -                | -                 |
| WB-3S              | 1.0                 | 20.80                  | 14.95                  | 1.66           | 100            | -                | -                 |
| WB-3B              | 11.2                | -                      | -                      | -              | -              | -                | -                 |
| CP-3S              | 1.0                 | 12.70                  | -                      | 1.36           | 130            | -                | -                 |
| CP-3B              | 9.7                 | -                      | -                      | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 11.10                  | -                      | 1.67           | -              | -                | -                 |
| FM-3S              | 1.0                 | 11.90                  | 6.01                   | 0.90           | 120            | -                | -                 |
| FM-3B              | 12.7                | -                      | -                      | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 18.60                  | 20.47                  | 0.90           | 115            | -                | -                 |



MOBILE BAY CRUISE MB-06

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|----------------|----------------|------------------|-------------------|
| FM-5B              | 2.7                 | -                      | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 14.00                  | 1.62           | 100            | -                | -                 |

## ***Mobile Bay Cruise Report***

***MB-07***

6 February 1990

***Vessel:*** *R/V Deborah B.*

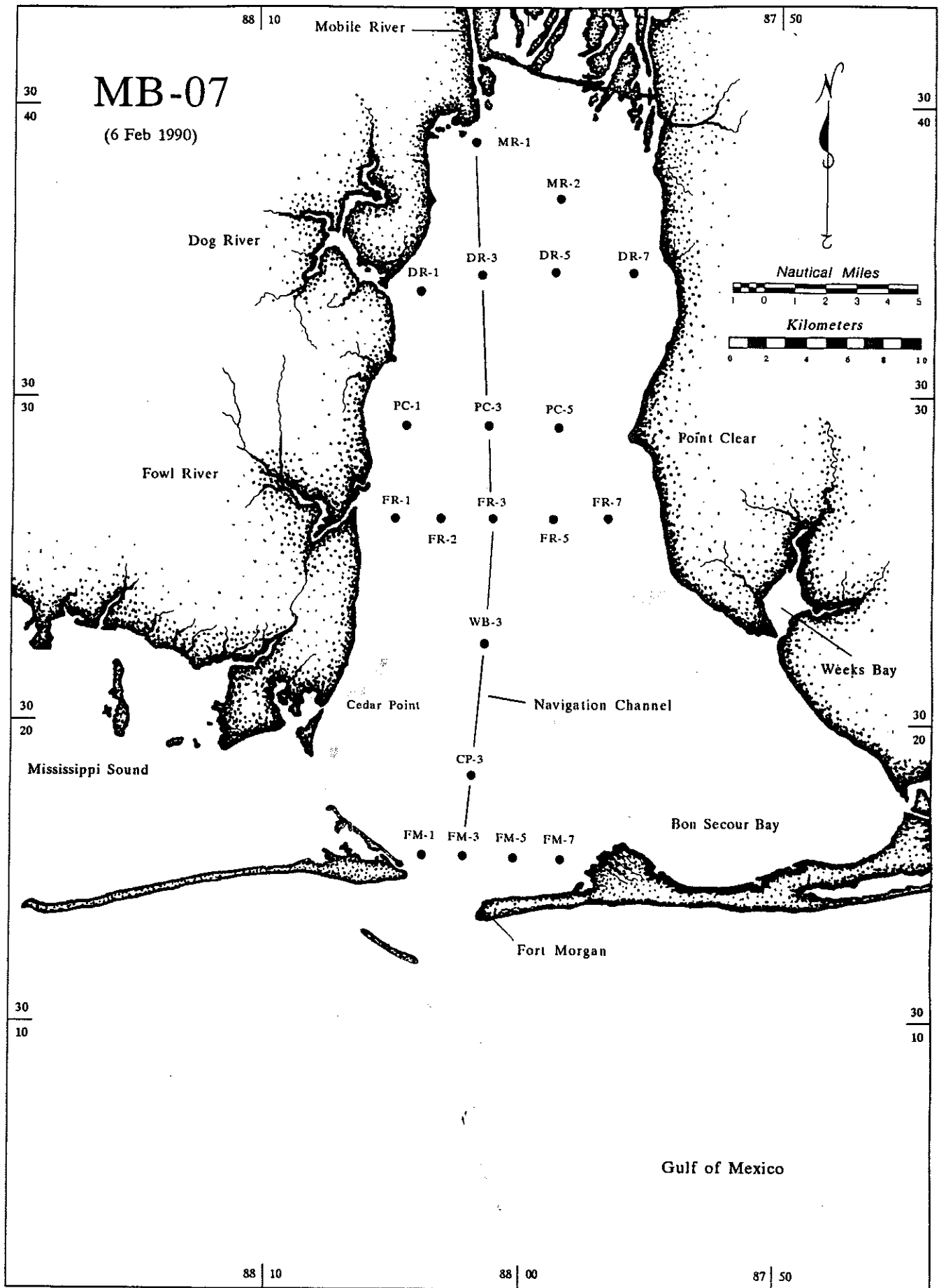
***Operation Area:*** Mobile Bay: from Fort Morgan to Mobile River

***Scientific Party:*** Jon Pennock (Chief Scientist)  
Ramona Schreiber  
Alan Gunter

***Supporting Agency:*** Marine Environmental Sciences Consortium

***Research Objectives:*** Niskin bottles hydrocast samples were made for nutrients, chlorophyll, suspended sediments at 20 surface stations (10 of those including bottom water casts), and for PC/PN at selected surface stations. Surface and bottom salinity, temperature, dissolved oxygen and pH were obtained using a Hydrolab II at all stations. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles were obtained with an Inter-Ocean S4-P current meter at all stations.

***Cruise Summary:*** Departed DISL 0710. Deadheaded to station FM-1. Began sampling 0730. Stations were continued going upbay through station MR-1. Returned to DISL 1630.



## MOBILE BAY CRUISE MB-07

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LONG<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|-------------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0   2/6/90        | 1444          | 30 : 38.3     | 88 : 1.9         | 12780.6           | 47181.1          | 14.6             | 0.0                 | 12.8              | 9.9         | 93          |             |
| MR-1B              | 13.6   2/6/90       | 1444          | 30 : 38.3     | 88 : 1.9         | 12780.6           | 47181.1          | 14.6             | 16.0                | 14.6              | 6.4         | 70          |             |
| MR-2S              | 1.0   2/6/90        | 1418          | 30 : 36.3     | 87 : 58.5        | 12816.1           | 47175.4          | 3.7              | 0.0                 | 13.1              | 11.7        | 112         |             |
| DR-1S              | 1.0   2/6/90        | 1302          | 30 : 35.4     | 88 : 4.1         | 12755.4           | 47169.6          | 2.7              | 0.0                 | 12.9              | 9.0         | 85          |             |
| DR-3S              | 1.0   2/6/90        | 1320          | 30 : 33.9     | 88 : 1.6         | 12781.1           | 47165.1          | 14.0             | 0.0                 | 12.9              | 9.0         | 85          |             |
| DR-3B              | 13.0   2/6/90       | 1320          | 30 : 33.9     | 88 : 1.6         | 12781.1           | 47165.1          | 14.0             | 23.5                | 15.4              | 5.8         | 66          |             |
| DR-5S              | 1.0   2/6/90        | 1347          | 30 : 33.7     | 87 : 58.4        | 12814.7           | 47165.6          | 3.7              | 0.0                 | 12.9              | 9.2         | 86          |             |
| DR-7S              | 1.0   2/6/90        | 1402          | 30 : 34.4     | 87 : 56.1        | 12840.3           | 47169.0          | 3.1              | 0.0                 | 12.9              | 10.5        | 99          |             |
| PC-1S              | 1.0   2/6/90        | 1243          | 30 : 29.0     | 88 : 3.9         | 12753.9           | 47145.4          | 3.1              | 0.1                 | 12.9              | 9.1         | 86          |             |
| PC-3S              | 1.0   2/6/90        | 1215          | 30 : 28.9     | 88 : 1.1         | 12783.8           | 46146.1          | 14.3             | 1.1                 | 13.6              | 12.1        | 117         |             |
| PC-3B              | 13.3   2/6/90       | 1215          | 30 : 28.9     | 88 : 1.1         | 12783.8           | 47146.1          | 14.3             | 30.7                | 16.2              | 4.6         | 57          |             |
| PC-5S              | 1.0   2/6/90        | 1150          | 30 : 28.3     | 87 : 58.0        | 12815.9           | 47144.9          | 3.4              | 0.0                 | 12.7              | 11.2        | 101         |             |
| PC-5B              | 2.4   2/6/90        | 1150          | 30 : 28.3     | 87 : 58.0        | 12815.9           | 47144.9          | 3.4              | 0.0                 | 12.7              | 9.8         | 92          |             |
| FR-1S              | 1.0   2/6/90        | 1016          | 30 : 27.0     | 88 : 4.7         | 12743.9           | 47137.4          | 3.1              | 1.2                 | 13.4              | 9.2         | 89          |             |
| FR-2S              | 1.0   2/6/90        | 1030          | 30 : 26.7     | 88 : 2.7         | 12765.1           | 47137.1          | 3.4              | 2.1                 | 13.3              | 10.0        | 96          |             |
| FR-3S              | 1.0   2/6/90        | 1048          | 30 : 26.6     | 88 : 0.8         | 12784.8           | 47137.2          | 14.0             | 0.4                 | 13.1              | 13.5        | 128         |             |
| FR-3B              | 13.0   2/6/90       | 1048          | 30 : 26.6     | 88 : 0.8         | 12784.8           | 47137.2          | 14.0             | 31.5                | 16.2              | 4.6         | 56          |             |
| FR-5S              | 1.0   2/6/90        | 1113          | 30 : 26.4     | 87 : 58.1        | 12813.4           | 47137.4          | 3.4              | 0.0                 | 12.7              | 11.1        | 104         |             |
| FR-7S              | 1.0   2/6/90        | 1128          | 30 : 26.3     | 87 : 56.3        | 12832.5           | 47137.5          | 3.1              | 0.0                 | 13.0              | 10.4        | 98          |             |
| WB-3S              | 1.0   2/6/90        | 941           | 30 : 22.5     | 88 : 1.2         | 12777.9           | 47120.7          | 12.2             | 0.6                 | 13.3              | 11.4        | 109         |             |
| WB-3B              | 11.2   2/6/90       | 941           | 30 : 22.5     | 88 : 1.2         | 12777.9           | 47120.7          | 12.2             | 31.2                | 16.3              | 4.7         | 58          |             |
| CP-3S              | 1.0   2/6/90        | 905           | 30 : 18.2     | 88 : 1.9         | 12768.5           | 47102.9          | 12.8             | 1.1                 | 13.1              | 10.2        | 98          |             |
| CP-3B              | 11.8   2/6/90       | 905           | 30 : 18.2     | 88 : 1.9         | 12768.5           | 47102.9          | 12.8             | 31.1                | 16.4              | 4.9         | 60          |             |
| FM-1S              | 1.0   2/6/90        | 732           | 30 : 15.7     | 88 : 3.7         | 12748.1           | 47092.1          | 4.6              | 1.0                 | 13.2              | 9.8         | 93          |             |
| FM-3S              | 1.0   2/6/90        | 754           | 30 : 15.6     | 88 : 2.3         | 12762.9           | 47091.7          | 14.6             | 0.1                 | 13.2              | 9.8         | 93          |             |
| FM-3B              | 13.6   2/6/90       | 754           | 30 : 15.6     | 88 : 2.3         | 12762.9           | 47091.7          | 14.6             | 18.8                | 15.2              | 6.0         | 66          |             |
| FM-5S              | 1.0   2/6/90        | 814           | 30 : 15.6     | 88 : 0.8         | 12778.7           | 47092.3          | 4.3              | 0.0                 | 13.6              | 10.0        | 96          |             |
| FM-5B              | 3.3   2/6/90        | 814           | 30 : 15.6     | 88 : 0.8         | 12778.7           | 47092.3          | 4.3              | 17.9                | 14.8              | 6.7         | 74          |             |
| FM-7S              | 1.0   2/6/90        | 840           | 30 : 15.5     | 87 : 58.9        | 12798.3           | 47092.0          | 3.7              | 0.8                 | 14.2              | 10.1        | 98          |             |

## MOBILE BAY CRUISE MB-07

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -  | -            | 0.78        | 11.44       | 0.38        | 2.35        | 104.98     | -           | -           | -           | -          | -          | -          |
| MR-1B              | 13.6                | -  | -            | 0.86        | 5.67        | 1.03        | 2.28        | 35.44      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -  | -            | 0.75        | 10.98       | 0.29        | 1.31        | 97.37      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | -  | -            | 1.30        | 10.57       | 0.31        | 3.75        | -          | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -  | -            | 1.05        | 10.41       | 0.45        | 2.17        | 50.83      | -           | -           | -           | -          | -          | -          |
| DR-3B              | 13.0                | -  | -            | 0.71        | 5.90        | 1.22        | 1.41        | 34.70      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -  | -            | 0.80        | 10.13       | 0.42        | 1.43        | 93.26      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -  | -            | 1.00        | 10.51       | 0.23        | 1.43        | 109.56     | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | -  | -            | 0.80        | 10.45       | 0.45        | 2.32        | 76.35      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | -  | -            | 0.78        | 9.96        | 0.46        | 1.93        | 115.09     | -           | -           | -           | -          | -          | -          |
| PC-3B              | 13.3                | -  | -            | 0.71        | 6.60        | 1.52        | 1.09        | 29.63      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | -  | -            | 1.45        | 11.37       | 0.30        | 1.51        | -          | -           | -           | -           | -          | -          | -          |
| PC-5B              | 2.4                 | -  | -            | 0.99        | 9.70        | 0.33        | 1.18        | 110.42     | -           | -           | -           | -          | -          | -          |
| FR-1S              | 1.0                 | -  | -            | 0.80        | 10.25       | 0.44        | 2.96        | 101.53     | -           | -           | -           | -          | -          | -          |
| FR-2S              | 1.0                 | -  | -            | 0.73        | 9.93        | 0.41        | 2.05        | 108.05     | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -  | -            | 0.90        | 10.38       | 0.26        | 1.46        | 99.59      | -           | -           | -           | -          | -          | -          |
| FR-3B              | 13.0                | -  | -            | 0.71        | 5.43        | 1.52        | 1.09        | 28.47      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | -  | -            | 0.98        | 10.66       | 0.35        | 1.36        | 89.15      | -           | -           | -           | -          | -          | -          |
| FR-7S              | 1.0                 | -  | -            | 1.25        | 9.25        | 0.26        | 1.65        | -          | -           | -           | -           | -          | -          | -          |
| WB-3S              | 1.0                 | -  | -            | 0.92        | 11.31       | 0.41        | 1.68        | 80.83      | -           | -           | -           | -          | -          | -          |
| WB-3B              | 11.2                | -  | -            | 0.66        | 5.42        | 1.50        | 0.90        | 27.72      | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | -  | -            | 0.88        | 9.17        | 0.44        | 1.88        | 108.28     | -           | -           | -           | -          | -          | -          |
| CP-3B              | 11.8                | -  | -            | 0.58        | 6.03        | 1.06        | 0.44        | 33.02      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.92        | 9.36        | 0.40        | 2.17        | 90.00      | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | -  | -            | 0.95        | 6.77        | 0.42        | 1.80        | 69.73      | -           | -           | -           | -          | -          | -          |
| FM-3B              | 13.6                | -  | -            | 0.58        | 4.11        | 1.07        | 0.84        | 31.58      | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -  | -            | 1.18        | 10.95       | 0.27        | 2.00        | -          | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.3                 | -  | -            | -           | 6.49        | 0.34        | 1.75        | 8.98       | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | -            | 1.25        | 9.80        | 0.43        | 2.02        | 90.99      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-07

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 49.6                   | 2.12            | 4.26           | 30             | -                | -                 |
| MR-1B              | 13.6                | -                      | 0.36            | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 39.5                   | 3.54            | 4.64           | 25             | -                | -                 |
| DR-1S              | 1.0                 | 44.0                   | 1.64            | 5.02           | 25             | -                | -                 |
| DR-3S              | 1.0                 | 48.0                   | 2.53            | 5.53           | 30             | -                | -                 |
| DR-3B              | 13.0                | -                      | 3.90            | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 40.4                   | 3.14            | 2.73           | 30             | -                | -                 |
| DR-7S              | 1.0                 | 16.0                   | 0.25            | 5.59           | 35             | -                | -                 |
| PC-1S              | 1.0                 | 54.0                   | 1.36            | 3.19           | 30             | -                | -                 |
| PC-3S              | 1.0                 | 49.6                   | 2.59            | 3.43           | 35             | -                | -                 |
| PC-3B              | 13.3                | -                      | 4.13            | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 38.0                   | 3.61            | 4.13           | 20             | -                | -                 |
| PC-5B              | 2.4                 | -                      | 3.36            | -              | -              | -                | -                 |
| FR-1S              | 1.0                 | 62.0                   | 1.55            | 3.97           | 15             | -                | -                 |
| FR-2S              | 1.0                 | 36.0                   | 1.50            | 3.22           | 30             | -                | -                 |
| FR-3S              | 1.0                 | 41.0                   | 2.39            | 3.81           | 40             | -                | -                 |
| FR-3B              | 13.0                | -                      | 6.20            | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 95.3                   | 1.14            | 5.43           | 25             | -                | -                 |
| FR-7S              | 1.0                 | 76.0                   | 3.00            | 5.65           | 20             | -                | -                 |
| WB-3S              | 1.0                 | 83.3                   | 1.91            | 5.43           | 20             | -                | -                 |
| WB-3B              | 11.2                | -                      | 7.75            | -              | -              | -                | -                 |
| CP-3S              | 1.0                 | 57.3                   | 1.81            | 4.16           | 20             | -                | -                 |
| CP-3B              | 11.8                | -                      | 2.13            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 57.5                   | 1.60            | 4.51           | 35             | -                | -                 |
| FM-3S              | 1.0                 | 80.7                   | 2.07            | 5.89           | 20             | -                | -                 |
| FM-3B              | 13.6                | -                      | 4.78            | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 123.0                  | 3.23            | 7.01           | 15             | -                | -                 |
| FM-5B              | 3.3                 | -                      | 2.22            | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 84.0                   | 8.80            | 6.62           | 10             | -                | -                 |



## ***Mobile Bay Cruise Report***

***MB-08***

1 March 1990

***Vessel:*** *R/V Deborah B.*

***Operation Area:*** Mobile Bay: from Fort Morgan to Mobile River

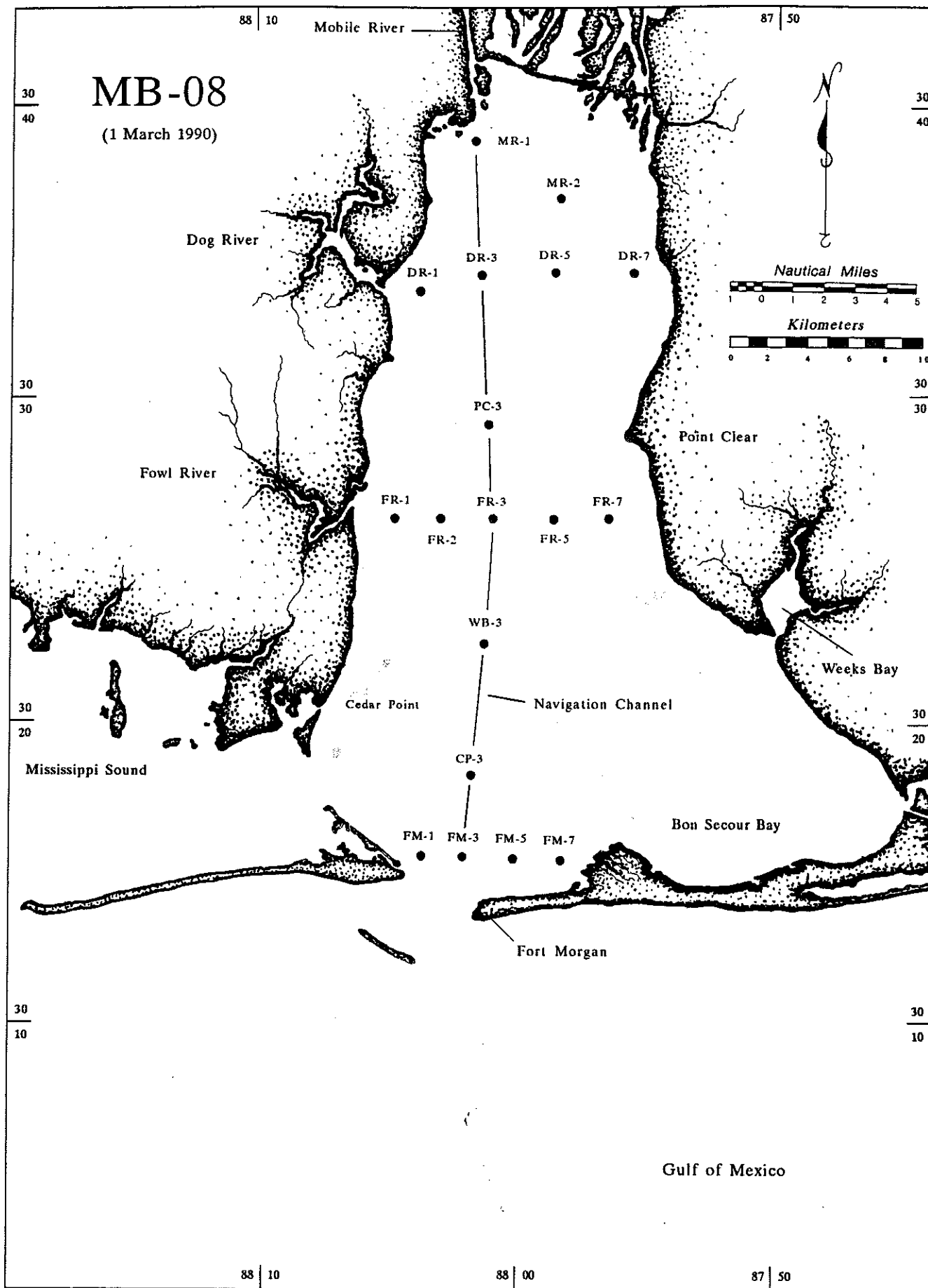
***Scientific Party:*** Jon Pennock (Chief Scientist)  
Loren Coen  
Ramona Schreiber  
Alan Gunter

***Supporting Agency:*** Marine Environmental Sciences Consortium

***Research Objectives:*** Niskin bottle hydrocast samples were made for nutrients, chlorophyll, suspended sediments at 18 surface stations (8 of those including bottom water casts), and for PC/PN at selected surface stations. Surface and bottom salinity, temperature, dissolved oxygen and pH were obtained using a Hydrolab II at all stations. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles were obtained with an Inter-Ocean S4-P current meter at all stations.

***Cruise Summary:*** Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0715. Following station FR-5, cruise was delayed 2 hours due to mechanical difficulties with the ship's engine. Sampling was resumed at station FR-7 and continued upbay through station MR-1, excluding stations PC-1 and PC-5. Returned to DISL 1630.





## MOBILE BAY CRUISE MB-08

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LONG<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O <sub>2</sub><br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|-------------------|------------------|------------------|---------------------|-------------------|-------------|-------------------------|-------------|
| MR-1S              | 1.0                 | 3/1/90        | 1458          | 30 : 38.3        | 88 : 1.9          | 12780.9          | 47180.9          | 14.9                | 0.0               | 14.8        | 8.3                     | 82          |
| MR-1B              | 13.9                | 3/1/90        | 1458          | 30 : 38.3        | 88 : 1.9          | 12780.9          | 47180.9          | 14.9                | 0.0               | 14.7        | 7.9                     | 78          |
| MR-2S              | 1.0                 | 3/1/90        | 1432          | 30 : 36.2        | 87 : 58.6         | 12815.0          | 47174.8          | 4.0                 | 0.0               | 15.2        | 9.0                     | 90          |
| DR-1S              | 1.0                 | 3/1/90        | 1324          | 30 : 32.8        | 88 : 4.0          | 12755.3          | 47160.1          | 3.1                 | 0.0               | 15.4        | 8.1                     | 80          |
| DR-3S              | 1.0                 | 3/1/90        | 1340          | 30 : 33.9        | 88 : 1.7          | 12780.6          | 47165.1          | 14.9                | 0.1               | 14.6        | 8.1                     | 80          |
| DR-3B              | 13.9                | 3/1/90        | 1340          | 30 : 33.9        | 88 : 1.7          | 12780.6          | 47165.1          | 14.9                | 28.0              | 15.9        | 5.8                     | 69          |
| DR-5S              | 1.0                 | 3/1/90        | 1400          | 30 : 33.7        | 87 : 58.4         | 12814.7          | 47165.6          | 3.7                 | 0.0               | 15.2        | 8.3                     | 82          |
| DR-7S              | 1.0                 | 3/1/90        | 1420          | 30 : 34.4        | 87 : 56.0         | 12840.4          | 47169.2          | 3.7                 | 0.0               | 15.0        | 8.9                     | 88          |
| PC-3S              | 1.0                 | 3/1/90        | 1255          | 30 : 28.5        | 88 : 1.0          | 12783.8          | 47144.8          | 3.7                 | 0.0               | 15.7        | 8.4                     | 85          |
| PC-3B              | 2.7                 | 3/1/90        | 1255          | 30 : 28.5        | 88 : 1.0          | 12783.8          | 47144.8          | 3.7                 | 28.6              | 16.2        | 6.9                     | 84          |
| FR-1S              | 1.0                 | 3/1/90        | 951           | 30 : 26.8        | 88 : 4.8          | 12743.4          | 47136.9          | 3.7                 | 0.0               | 15.2        | 8.1                     | 81          |
| FR-2S              | 1.0                 | 3/1/90        | 1010          | 30 : 26.8        | 88 : 2.7          | 12765.0          | 47137.3          | 4.0                 | 0.3               | 14.8        | 8.4                     | 83          |
| FR-3S              | 1.0                 | 3/1/90        | 1028          | 30 : 26.5        | 88 : 0.8          | 12784.6          | 47137.0          | 14.9                | 0.0               | 15.3        | 8.1                     | 80          |
| FR-3B              | 13.9                | 3/1/90        | 1028          | 30 : 26.5        | 88 : 0.8          | 12784.6          | 47137.0          | 14.9                | 29.0              | 16.2        | 6.5                     | 79          |
| FR-5S              | 1.0                 | 3/1/90        | 1056          | 30 : 26.3        | 87 : 58.1         | 12813.2          | 47136.9          | 4.0                 | 0.0               | 15.1        | 8.8                     | 88          |
| FR-7S              | 1.0                 | 3/1/90        | 1218          | 30 : 26.2        | 87 : 56.3         | 12832.1          | 47137.1          | 3.4                 | 0.0               | 14.8        | 8.9                     | 88          |
| WB-3S              | 1.0                 | 3/1/90        | 921           | 30 : 22.6        | 88 : 1.2          | 12777.9          | 47121.1          | 14.9                | 0.0               | 14.9        | 8.4                     | 83          |
| WB-3B              | 13.9                | 3/1/90        | 921           | 30 : 22.6        | 88 : 1.2          | 12777.9          | 47121.1          | 14.9                | 29.0              | 16.1        | 7.1                     | 85          |
| CP-3S              | 1.0                 | 3/1/90        | 852           | 30 : 18.3        | 88 : 1.9          | 12768.6          | 47103.1          | 15.5                | 0.0               | 14.8        | 8.5                     | 84          |
| CP-3B              | 14.5                | 3/1/90        | 852           | 30 : 18.3        | 88 : 1.9          | 12768.6          | 47103.1          | 15.5                | 29.0              | 16.2        | 7.9                     | 95          |
| FM-1S              | 1.0                 | 3/1/90        | 717           | 30 : 15.7        | 88 : 3.7          | 12747.8          | 47091.9          | 5.2                 | 0.0               | 15.1        | 8.4                     | 83          |
| FM-3S              | 1.0                 | 3/1/90        | 737           | 30 : 15.6        | 88 : 3.3          | 12762.9          | 47091.9          | 15.5                | 0.0               | 14.8        | 9.0                     | 89          |
| FM-3B              | 14.5                | 3/1/90        | 737           | 30 : 15.6        | 88 : 3.3          | 12762.9          | 47091.9          | 15.5                | 29.1              | 16.2        | 7.8                     | 95          |
| FM-5S              | 1.0                 | 3/1/90        | 804           | 30 : 15.6        | 88 : 0.8          | 12779.9          | 47092.3          | 4.6                 | 0.0               | 15.2        | 9.0                     | 90          |
| FM-5B              | 3.6                 | 3/1/90        | 804           | 30 : 15.6        | 88 : 0.8          | 12779.9          | 47092.3          | 4.6                 | 26.8              | 16.0        | 7.8                     | 93          |
| FM-7S              | 1.0                 | 3/1/90        | 819           | 30 : 15.5        | 87 : 58.9         | 12797.8          | 47092.0          | 4.3                 | 0.0               | 14.9        | 10.1                    | 100         |

## MOBILE BAY CRUISE MB-08

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 7.3 | -            | 1.28        | 8.09        | 0.73        | 3.76        | -          | -           | -           | -           | -          | -          | -          |
| MR-1B              | 13.9                | 7.1 | -            | 1.25        | 8.91        | 0.78        | 3.46        | -          | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 7.4 | -            | 1.35        | 7.69        | 1.03        | 3.64        | -          | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 7.7 | -            | 1.30        | 7.25        | 0.88        | 4.30        | -          | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 7.4 | -            | 1.48        | 7.43        | 1.09        | 4.30        | -          | -           | -           | -           | -          | -          | -          |
| DR-3B              | 13.9                | 7.5 | -            | 0.70        | 3.48        | 0.36        | 3.28        | -          | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 7.6 | -            | 1.33        | 8.76        | 0.88        | 3.58        | -          | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 7.4 | -            | 1.35        | 9.48        | 0.83        | 3.46        | -          | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 7.5 | -            | 1.40        | 8.89        | 0.65        | 7.98        | -          | -           | -           | -           | -          | -          | -          |
| PC-3B              | 2.7                 | 7.7 | -            | 0.63        | 2.01        | 0.72        | 4.78        | -          | -           | -           | -           | -          | -          | -          |
| FR-1S              | 1.0                 | 7.5 | -            | 1.75        | 8.56        | 1.05        | 6.53        | -          | -           | -           | -           | -          | -          | -          |
| FR-2S              | 1.0                 | 7.0 | -            | 1.40        | 8.31        | 1.07        | 4.72        | -          | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 7.2 | -            | 1.20        | 8.52        | 0.80        | 3.52        | -          | -           | -           | -           | -          | -          | -          |
| FR-3B              | 13.9                | 7.6 | -            | 0.70        | 2.13        | 0.55        | 1.65        | -          | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 7.6 | -            | 1.23        | 9.64        | 0.78        | 3.34        | -          | -           | -           | -           | -          | -          | -          |
| FR-7S              | 1.0                 | 7.4 | -            | 1.40        | 8.29        | 1.21        | 6.11        | -          | -           | -           | -           | -          | -          | -          |
| WB-3S              | 1.0                 | 7.6 | -            | 1.10        | 7.86        | 0.70        | 2.73        | -          | -           | -           | -           | -          | -          | -          |
| WB-3B              | 13.9                | 7.7 | -            | 0.65        | -           | 0.54        | 1.17        | -          | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | 7.4 | -            | 0.90        | 1.34        | 0.92        | 2.85        | -          | -           | -           | -           | -          | -          | -          |
| CP-3B              | 14.5                | 7.8 | -            | 0.48        | 9.15        | 0.28        | 0.08        | -          | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 7.1 | -            | 1.15        | 0.09        | 1.07        | 4.06        | -          | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | 7.4 | -            | 1.63        | 0.37        | 0.96        | 3.28        | -          | -           | -           | -           | -          | -          | -          |
| FM-3B              | 14.5                | -   | -            | 0.33        | 9.76        | 0.25        | 0.00        | -          | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 7.7 | -            | 1.48        | 10.11       | 0.89        | 2.85        | -          | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.6                 | 7.8 | -            | 0.40        | 4.42        | 0.28        | 0.44        | -          | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 7.9 | -            | 1.25        | 9.62        | 0.95        | 2.73        | -          | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-08

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 78.7                   | 1.55            | 4.87           | 10             | -                | -                 |
| MR-1B              | 13.9                | 98.0                   | 1.94            | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 50.0                   | 2.01            | 5.97           | 20             | -                | -                 |
| DR-1S              | 1.0                 | 93.3                   | 1.60            | 7.73           | 15             | -                | -                 |
| DR-3S              | 1.0                 | 74.0                   | 1.24            | 5.92           | 15             | -                | -                 |
| DR-3B              | 13.9                | 120.7                  | 2.56            | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 65.3                   | 2.14            | 7.73           | 15             | -                | -                 |
| DR-7S              | 1.0                 | 43.3                   | 2.01            | 5.67           | 20             | -                | -                 |
| PC-3S              | 1.0                 | 85.3                   | 1.81            | 6.88           | 15             | -                | -                 |
| PC-3B              | 2.7                 | 199.3                  | 1.37            | -              | -              | -                | -                 |
| FR-1S              | 1.0                 | 86.7                   | 1.76            | 5.54           | 15             | -                | -                 |
| FR-2S              | 1.0                 | 68.7                   | 1.08            | 6.96           | 20             | -                | -                 |
| FR-3S              | 1.0                 | 74.0                   | 1.94            | 5.88           | 15             | -                | -                 |
| FR-3B              | 13.9                | 390.7                  | 5.99            | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 74.0                   | 2.58            | 6.76           | 15             | -                | -                 |
| FR-7S              | 1.0                 | 40.0                   | 2.32            | 5.25           | 10             | -                | -                 |
| WB-3S              | 1.0                 | 77.3                   | 1.78            | 6.00           | 15             | -                | -                 |
| WB-3B              | 13.9                | 251.3                  | 7.75            | -              | -              | -                | -                 |
| CP-3S              | 1.0                 | 69.3                   | 1.70            | 7.17           | 10             | -                | -                 |
| CP-3B              | 14.5                | -                      | 5.55            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 67.3                   | 1.78            | 5.50           | 10             | -                | -                 |
| FM-3S              | 1.0                 | 70.0                   | 2.35            | 6.47           | 10             | -                | -                 |
| FM-3B              | 14.5                | 126.4                  | 3.61            | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 76.0                   | 5.16            | 5.60           | 20             | -                | -                 |
| FM-5B              | 3.6                 | -                      | 1.69            | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 53.3                   | 14.72           | 5.11           | 10             | -                | -                 |



## **Mobile Bay Cruise Report**

**MB-09**

4, 5, 10 April 1990

**Vessels:**

*Robalo* (4 April); *R/V Deborah B.* (5, 10 April)

**Operation Area:**

- \* 4 April: Mobile Bay mouth following ship channel and skirting tide line from Fort Morgan to west of Sand Island.
- \* 5 April: Mobile Bay plume from offshore Gulf Shores to west of Sand Island.
- \* 10 April: Mobile Bay from Fort Morgan to Mobile River.

**Scientific Party:**

Jon Pennock (Chief Scientist, all cruises)  
Ramona Schreiber (all cruises)  
Guy Gelfenbaum (4, 5 April)  
Dean Ullock (5 April)  
Tom Hopkins (10 April)  
Patric Harper (10 April)

**Supporting Agency:**

Marine Environmental Sciences Consortium

**Research Objectives:**

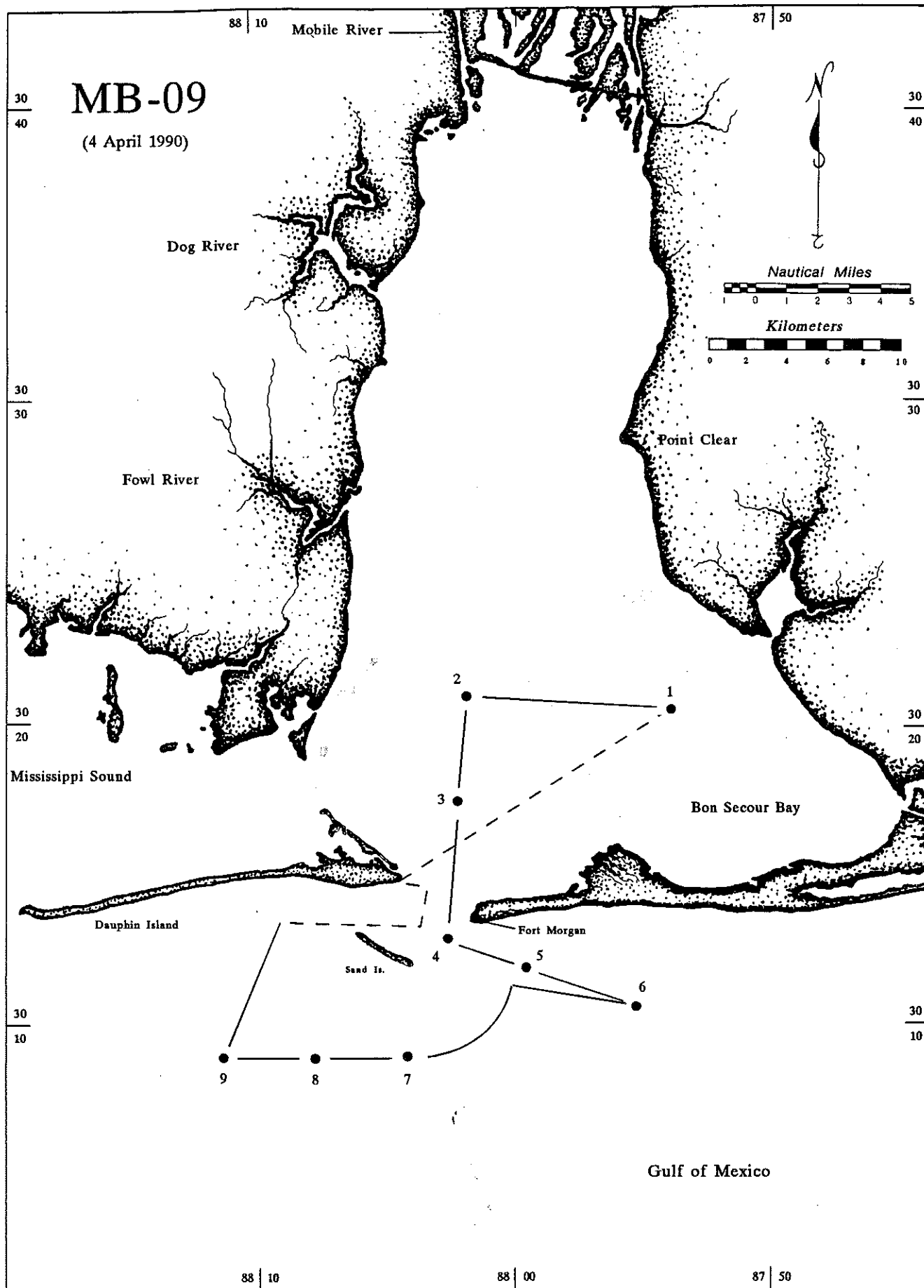
Niskin bottle hydrocast samples were made for nutrients, chlorophyll, suspended sediments and PC/PN at 9 surface stations on April 4; 23 surface stations (+ 6 bottoms) on April 5; and 20 surface stations (+ 10 bottoms) on April 10. Surface and bottom salinity, temperature, dissolved oxygen and pH were obtained using a Hydrolab II at designated stations on April 4 and 5. Surface & bottom salinity, temperature and dissolved oxygen were obtained using a VWR meter on April 10. Secchi disk and Licor light attenuation measurements were made as possible on all cruises. CTD profiles were obtained with an Inter-Ocean S4-P current meter on April 5 and 10.

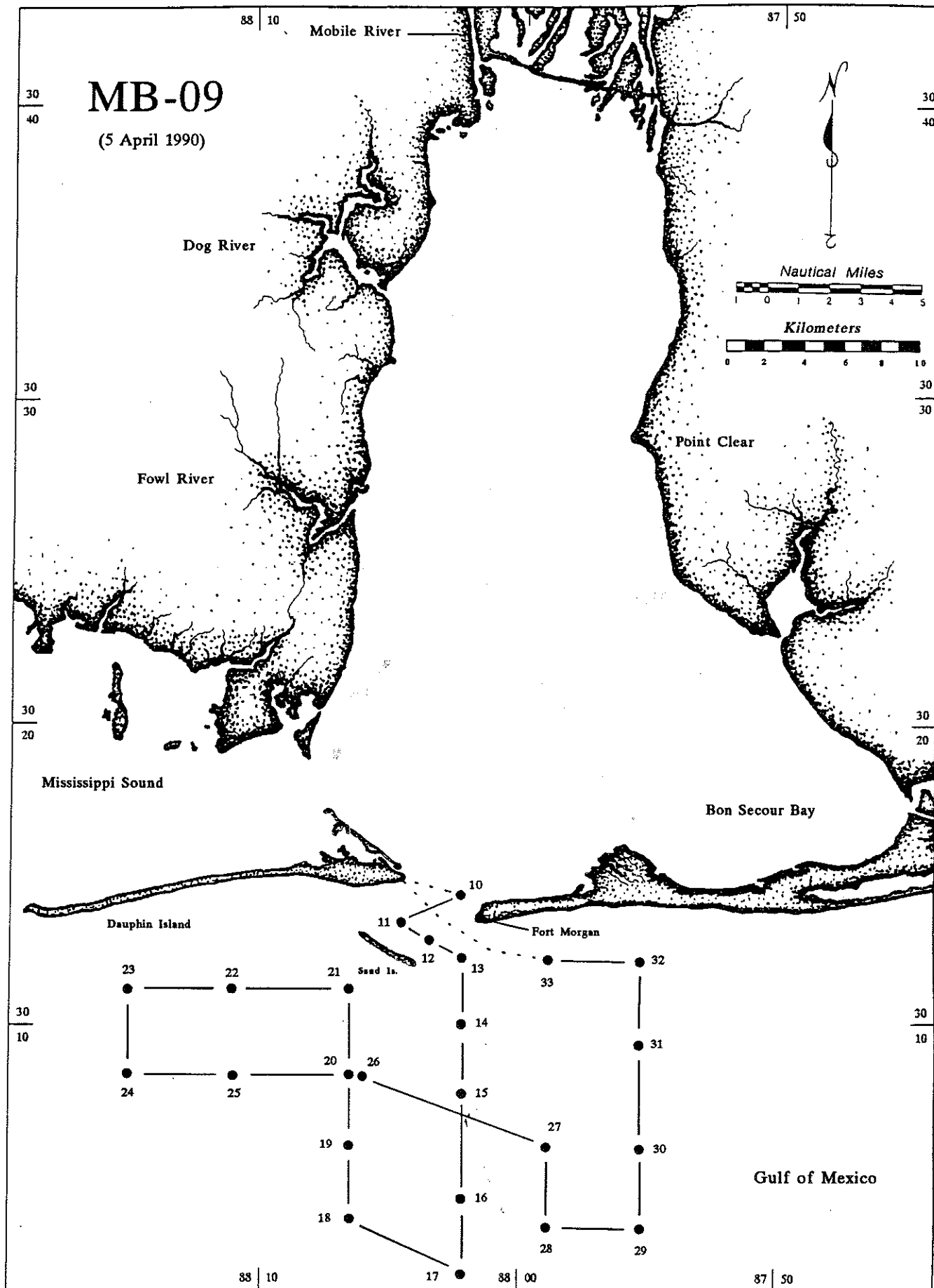
**Cruise Summary:**

4 April: Departed DISL 1215. Started sampling at station 1 at 1245. Sampling continued through station 9. Returned to DISL 1630.

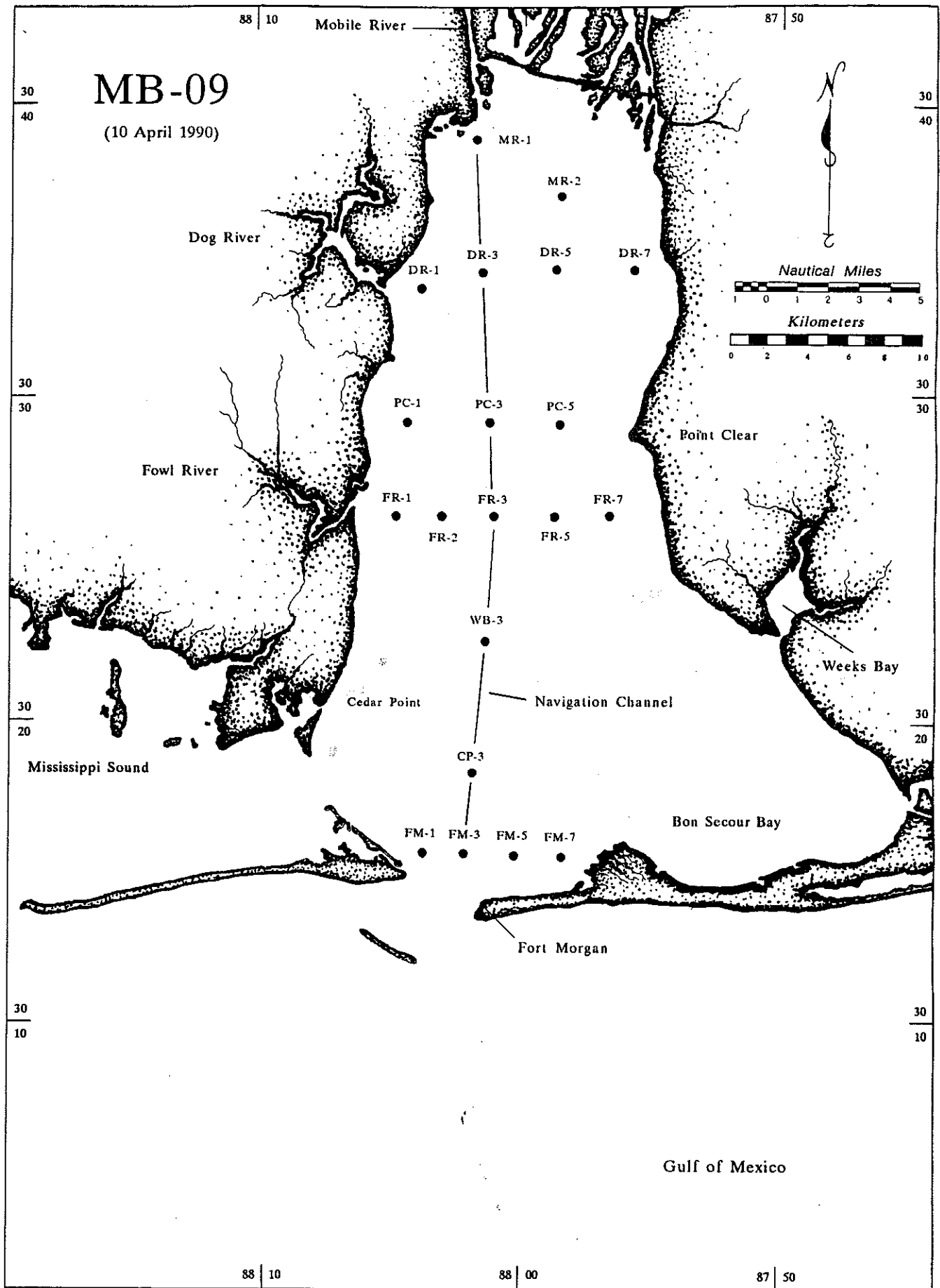
5 April: Departed DISL 0730. Deadheaded to station 10. Began sampling 0750. Sampling continued through 33. Returned to DISL 1530.

10 April: Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0730. Stations were continued going upbay through station MR-1. Returned to DISL 1400.









## MOBILE BAY CRUISE MB-09

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LONG<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|-------------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| 1                  | 1.0                 | 4/4/90        | 1243          | 30 : 19.7        | 87 : 56.1         | 12830.2          | 47110.4          | -                   | 0.0               | 17.4        | 9.5         | 99          |
| 2                  | 1.0                 | 4/4/90        | 1315          | 30 : 19.9        | 88 : 1.6          | 12772.2          | 47109.9          | -                   | 1.5               | 17.7        | 9.2         | 97          |
| 3                  | 1.0                 | 4/4/90        | 1336          | 30 : 16.3        | 88 : 2.3          | 12763.6          | 47094.8          | -                   | 1.6               | 17.8        | 9.3         | 99          |
| 4                  | 1.0                 | 4/4/90        | 1353          | 30 : 13.7        | 88 : 2.7          | 12757.9          | 47083.6          | -                   | 2.0               | 18.1        | 9.5         | 102         |
| 5                  | 1.0                 | 4/4/90        | 1406          | 30 : 12.3        | 88 : 1.1          | 12773.6          | 47077.8          | -                   | 17.5              | 19.1        | 8.0         | 99          |
| 6                  | 1.0                 | 4/4/90        | 1425          | 30 : 10.5        | 87 : 58.9         | 12794.6          | 47070.2          | -                   | 24.9              | 19.4        | 8.3         | 104         |
| 7                  | 1.0                 | 4/4/90        | 1454          | 30 : 9.9         | 88 : 2.1          | 12761.1          | 47067.5          | -                   | 20.1              | 19.2        | 8.8         | 107         |
| 8                  | 1.0                 | 4/4/90        | 1514          | 30 : 9.7         | 88 : 4.6          | 12735.4          | 47066.5          | -                   | 14.8              | 19.3        | 8.8         | 104         |
| 9                  | 1.0                 | 4/4/90        | 1541          | 30 : 9.5         | 88 : 9.2          | 12688.8          | 47064.9          | -                   | 18.5              | 19.0        | 9.4         | 114         |
| 10-S               | 1.0                 | 4/5/90        | 754           | 30 : 14.2        | 88 : 2.4          | 12761.2          | 47086.1          | 15.5                | -                 | 18.1        | 9.3         | 99          |
| 10-B               | 14.5                | 4/5/90        | 754           | 30 : 14.2        | 88 : 2.4          | 12761.2          | 47086.1          | 15.5                | -                 | 18.7        | 6.5         | 83          |
| 12-S               | 1.0                 | 4/5/90        | 833           | 30 : 12.9        | 88 : 2.4          | 12746.0          | 47080.1          | 2.4                 | -                 | -           | -           | -           |
| 13-S               | 1.0                 | 4/5/90        | 843           | 30 : 12.1        | 88 : 2.5          | 12758.6          | 47077.0          | 14.9                | -                 | -           | -           | -           |
| 13-B               | 13.9                | 4/5/90        | 843           | 30 : 12.1        | 88 : 2.5          | 12758.6          | 47077.0          | 14.9                | -                 | -           | -           | -           |
| 14-S               | 1.0                 | 4/5/90        | 854           | 30 : 9.8         | 88 : 3.2          | 12750.7          | 47067.0          | 15.2                | -                 | 17.8        | 9.5         | 103         |
| 15-S               | 1.0                 | 4/5/90        | 914           | 30 : 7.6         | 88 : 4.1          | 12740.3          | 47057.2          | 16.8                | -                 | -           | -           | -           |
| 16-S               | 1.0                 | 4/5/90        | 925           | 30 : 5.3         | 88 : 4.0          | 12740.1          | 47047.0          | 21.3                | -                 | -           | -           | -           |
| 16-B               | 20.3                | 4/5/90        | 925           | 30 : 5.3         | 88 : 4.0          | 12740.1          | 47047.0          | 21.3                | -                 | -           | -           | -           |
| 17-S               | 1.0                 | 4/5/90        | 943           | 30 : 3.0         | 88 : 3.8          | 12740.9          | 47037.0          | 22.0                | -                 | -           | -           | -           |
| 18-S               | 1.0                 | 4/5/90        | 1001          | 30 : 5.4         | 88 : 6.9          | 12709.9          | 47047.6          | 20.7                | -                 | -           | -           | -           |
| 19-S               | 1.0                 | 4/5/90        | 1013          | 30 : 7.6         | 88 : 6.5          | 12714.9          | 47056.9          | 15.9                | -                 | 18.3        | 8.7         | 104         |
| 19-B               | 14.9                | 4/5/90        | 1013          | 30 : 7.6         | 88 : 6.5          | 12714.9          | 47056.9          | 15.9                | -                 | -           | -           | -           |
| 20-S               | 1.0                 | 4/5/90        | 1033          | 30 : 9.9         | 88 : 6.1          | 12720.0          | 47067.0          | 11.6                | -                 | -           | -           | -           |
| 21-S               | 1.0                 | 4/5/90        | 1045          | 30 : 12.3        | 88 : 6.7          | 12715.1          | 47077.1          | 8.2                 | -                 | -           | -           | -           |
| 22-S               | 1.0                 | 4/5/90        | 1105          | 30 : 12.4        | 88 : 10.8         | 12672.8          | 47077.1          | 12.2                | -                 | -           | -           | -           |
| 23-S               | 1.0                 | 4/5/90        | 1119          | 30 : 12.5        | 88 : 14.2         | 12638.2          | 47077.2          | 11.3                | -                 | 18.8        | 6.8         | 88          |
| 24-S               | 1.0                 | 4/5/90        | 1138          | 30 : 10.1        | 88 : 14.1         | 12638.5          | 47067.0          | 15.2                | -                 | -           | -           | -           |
| 25-S               | 1.0                 | 4/5/90        | 1153          | 30 : 10.0        | 88 : 10.2         | 12678.1          | 47067.1          | 12.8                | -                 | -           | -           | -           |

## MOBILE BAY CRUISE MB-09

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LON<br>DEG | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| 26-S               | 1.0   4/5/90        | 1209          | 30            | 9.9        | 88         | 6.2        | 12719.9    | 47067.1          | 12.2             | -                   | -                 | -           | -           | -           |
| 27-S               | 1.0   4/5/90        | 1236          | 30            | 7.5        | 87         | 59.2       | 12790.3    | 47057.0          | 16.2             | -                   | -                 | 18.5        | 8.3         | 97          |
| 27-B               | 15.2   4/5/90       | 1236          | 30            | 7.5        | 87         | 59.2       | 12790.3    | 47057.0          | 16.2             | -                   | -                 | -           | -           | -           |
| 28-S               | 1.0   4/5/90        | 1253          | 30            | 5.3        | 87         | 59.0       | 12790.6    | 47047.1          | 18.9             | -                   | -                 | -           | -           | -           |
| 29-S               | 1.0   4/5/90        | 1309          | 30            | 5.2        | 87         | 55.1       | 12830.0    | 47047.0          | 15.9             | -                   | -                 | 19.0        | 8.6         | 106         |
| 29-B               | 14.9   4/5/90       | 1309          | 30            | 5.2        | 87         | 55.1       | 12830.0    | 47047.0          | 15.9             | -                   | -                 | -           | -           | -           |
| 30-S               | 1.0   4/5/90        | 1325          | 30            | 7.4        | 87         | 55.2       | 12830.2    | 47057.0          | 15.2             | -                   | -                 | -           | -           | -           |
| 31-S               | 1.0   4/5/90        | 1346          | 30            | 9.7        | 87         | 55.4       | 12830.1    | 47067.1          | 11.0             | -                   | -                 | -           | -           | -           |
| 32-S               | 1.0   4/5/90        | 1405          | 30            | 11.9       | 87         | 55.6       | 12829.7    | 47077.0          | 13.1             | -                   | -                 | 19.8        | 6.8         | 88          |
| 33-S               | 1.0   4/5/90        | 1430          | 30            | 12.1       | 87         | 59.4       | 12790.3    | 47077.2          | 9.1              | -                   | -                 | 18.5        | 6.1         | 79          |
| MR-1S              | 1.0   4/10/90       | 1237          | 30            | 38.2       | 88         | 1.9        | 12780.7    | 47180.8          | 14.0             | 0.7                 | -                 | 18.3        | -           | -           |
| MR-1B              | 13.0   4/10/90      | 1237          | 30            | 38.2       | 88         | 1.9        | 12780.7    | 47180.8          | 14.0             | 30.8                | -                 | 18.1        | -           | -           |
| MR-2S              | -1.0   4/10/90      | 1217          | 30            | 36.4       | 87         | 58.5       | 12815.7    | 47175.5          | 3.4              | 0.0                 | -                 | 18.1        | -           | -           |
| DR-1S              | 1.0   4/10/90       | 1116          | 30            | 32.9       | 88         | 4.0        | 12755.1    | 47160.2          | 3.0              | 2.6                 | -                 | 19.5        | -           | -           |
| DR-3S              | 1.0   4/10/90       | 1133          | 30            | 34.0       | 88         | 1.7        | 12780.6    | 47165.2          | 14.3             | 1.0                 | -                 | 19.1        | -           | -           |
| DR-3B              | 13.3   4/10/90      | 1133          | 30            | 34.0       | 88         | 1.68       | 12780.6    | 47165.2          | 14.3             | 30.8                | -                 | 18.2        | -           | -           |
| DR-5S              | 1.0   4/10/90       | 1150          | 30            | 34.2       | 87         | 58.5       | 12814.4    | 47167.5          | 4.3              | 0.1                 | -                 | 18.6        | -           | -           |
| DR-5B              | 3.3   4/10/90       | 1150          | 30            | 34.2       | 87         | 58.5       | 12814.4    | 47167.5          | 4.3              | 0.1                 | -                 | 18.2        | -           | -           |
| DR-7S              | 1.0   4/10/90       | 1203          | 30            | 34.4       | 87         | 56.1       | 12839.6    | 47169.2          | 3.4              | 0.2                 | -                 | 18.0        | -           | -           |
| PC-2S              | 1.0   4/10/90       | 1059          | 30            | 29.0       | 88         | 4.1        | 12752.2    | 47145.3          | 2.1              | 2.6                 | -                 | 17.9        | -           | -           |
| PC-3S              | 1.0   4/10/90       | 1045          | 30            | 28.7       | 88         | 1.1        | 12783.5    | 47145.5          | 13.4             | 0.5                 | -                 | 18.2        | -           | -           |
| PC-3B              | 13.4   4/10/90      | 1045          | 30            | 28.7       | 88         | 1.1        | 12783.5    | 47145.5          | 13.4             | 30.8                | -                 | 18.2        | -           | -           |
| PC-5S              | 1.0   4/10/90       | 1025          | 30            | 28.4       | 87         | 58.0       | 12815.4    | 47145.2          | 4.0              | 0.4                 | -                 | 19.0        | -           | -           |
| PC-5B              | 3.0   4/10/90       | 1025          | 30            | 28.4       | 87         | 58.0       | 12815.4    | 47145.2          | 4.0              | 0.6                 | -                 | 18.3        | -           | -           |
| FR-1S              | 1.0   4/10/90       | 924           | 30            | 26.9       | 88         | 4.8        | 12743.6    | 47137.2          | 3.4              | 3.0                 | -                 | 18.0        | -           | -           |
| FR-2S              | 1.0   4/10/90       | 936           | 30            | 26.8       | 88         | 2.7        | 12765.6    | 47137.5          | 4.0              | 2.5                 | -                 | 17.7        | -           | -           |
| FR-3S              | 1.0   4/10/90       | 947           | 30            | 26.6       | 88         | 0.8        | 12784.9    | 47137.1          | 14.0             | 1.1                 | -                 | 17.9        | -           | -           |
| FR-3B              | 13.0   4/10/90      | 947           | 30            | 26.6       | 88         | 0.8        | 12784.9    | 47137.1          | 14.0             | 30.8                | -                 | 18.3        | -           | -           |

## MOBILE BAY CRUISE MB-09

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LON<br>DEG | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FR-5S              | 1.0                 | 4/10/90       | 1002          | 30         | 26.4       | 87         | 58.1       | 12813.7          | 47137.2          | 4.0                 | 0.2               | 18.0        | -           | -           |
| FR-7S              | 1.0                 | 4/10/90       | 1011          | 30         | 26.4       | 87         | 56.3       | 12832.4          | 47137.8          | 3.7                 | 0.5               | 18.7        | -           | -           |
| WB-3S              | 1.0                 | 4/10/90       | 857           | 30         | 22.6       | 88         | 1.2        | 12778.1          | 47121.2          | 14.3                | 2.2               | 17.2        | -           | -           |
| WB-3B              | 13.3                | 4/10/90       | 857           | 30         | 22.6       | 88         | 1.2        | 12778.1          | 47121.2          | 14.3                | 30.2              | 18.2        | -           | -           |
| CP-3S              | 1.0                 | 4/10/90       | 829           | 30         | 18.3       | 88         | 1.9        | 12768.6          | 47103.3          | 15.2                | 2.2               | 17.1        | -           | -           |
| CP-3B              | 14.2                | 4/10/90       | 829           | 30         | 18.3       | 88         | 1.9        | 12768.6          | 47103.3          | 15.2                | 29.6              | 18.2        | -           | -           |
| FM-1S              | 1.0                 | 4/10/90       | 729           | 30         | 15.8       | 88         | 3.7        | 12748.6          | 47092.4          | 5.2                 | 2.3               | 17.5        | -           | -           |
| FM-3S              | 1.0                 | 4/10/90       | 743           | 30         | 15.6       | 88         | 2.3        | 12762.4          | 47092.0          | 14.9                | 2.1               | 17.5        | -           | -           |
| FM-3B              | 13.9                | 4/10/90       | 743           | 30         | 15.6       | 88         | 2.3        | 12762.4          | 47092.0          | 14.9                | 29.9              | 18.3        | -           | -           |
| FM-5S              | 1.0                 | 4/10/90       | 757           | 30         | 15.6       | 88         | 0.6        | 12780.5          | 47092.0          | 4.6                 | 2.5               | 17.5        | -           | -           |
| FM-5B              | 3.6                 | 4/10/90       | 757           | 30         | 15.6       | 88         | 0.6        | 12780.5          | 47092.0          | 4.6                 | 23.8              | 18.5        | -           | -           |
| FM-7S              | 1.0                 | 4/10/90       | 809           | 30         | 15.6       | 87         | 58.9       | 12798.5          | 47092.6          | 4.3                 | 5.3               | 17.7        | -           | -           |

## MOBILE BAY CRUISE MB-09

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| 1                  | 1.0                 | 7.8 | -            | 0.40        | 12.32       | 0.40        | 2.55        | 87.82      | -           | -           | -           | -          | -          | -          |
| 2                  | 1.0                 | 7.6 | -            | 0.34        | 10.25       | 0.42        | 2.55        | 82.11      | -           | -           | -           | -          | -          | -          |
| 3                  | 1.0                 | 7.6 | -            | 0.36        | 11.16       | 0.33        | 2.15        | 81.28      | -           | -           | -           | -          | -          | -          |
| 4                  | 1.0                 | -   | -            | 0.33        | 9.90        | 0.37        | 1.56        | 82.84      | -           | -           | -           | -          | -          | -          |
| 5                  | 1.0                 | -   | -            | 0.38        | 8.27        | 0.37        | 1.96        | 71.11      | -           | -           | -           | -          | -          | -          |
| 6                  | 1.0                 | -   | -            | 0.21        | 1.47        | 0.24        | 1.56        | 18.47      | -           | -           | -           | -          | -          | -          |
| 7                  | 1.0                 | -   | -            | 0.24        | 4.23        | 0.33        | 2.35        | 38.90      | -           | -           | -           | -          | -          | -          |
| 8                  | 1.0                 | 8.1 | -            | 0.33        | 8.33        | 0.31        | 0.77        | 65.70      | -           | -           | -           | -          | -          | -          |
| 9                  | 1.0                 | 8.1 | -            | 0.21        | 5.91        | 0.28        | 1.56        | 49.16      | -           | -           | -           | -          | -          | -          |
| 10-S               | 1.0                 | -   | -            | 0.22        | 9.39        | 0.47        | 1.76        | 85.22      | -           | -           | -           | 148.72     | 14.86      | -          |
| 10-B               | 14.5                | -   | -            | 0.50        | 0.08        | 0.40        | 4.53        | 18.30      | -           | -           | -           | 201.27     | 16.75      | -          |
| 12-S               | 1.0                 | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 13-S               | 1.0                 | -   | -            | 0.39        | 11.80       | 0.10        | 2.15        | 11.67      | -           | -           | -           | 106.22     | 9.94       | -          |
| 13-B               | 13.9                | -   | -            | 0.53        | 0.76        | 0.54        | 4.33        | 13.41      | -           | -           | -           | 27.77      | 2.69       | -          |
| 14-S               | 1.0                 | 7.8 | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 15-S               | 1.0                 | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 16-S               | 1.0                 | -   | -            | 0.15        | 3.03        | 0.31        | 1.56        | 32.11      | -           | -           | -           | 42.06      | 4.71       | -          |
| 16-B               | 20.3                | -   | -            | 0.43        | 0.40        | 0.49        | 3.14        | 9.21       | -           | -           | -           | 21.90      | 1.95       | -          |
| 17-S               | 1.0                 | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 18-S               | 1.0                 | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 19-S               | 1.0                 | 8.0 | -            | 0.10        | 3.41        | 0.33        | 1.36        | 35.70      | -           | -           | -           | 36.37      | 3.79       | -          |
| 19-B               | 14.9                | -   | -            | 0.36        | 0.34        | 0.35        | 2.35        | 10.33      | -           | -           | -           | 23.83      | 1.86       | -          |
| 20-S               | 1.0                 | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 21-S               | 1.0                 | -   | -            | 0.36        | 1.60        | 0.51        | 2.55        | 14.70      | -           | -           | -           | 60.74      | 8.78       | -          |
| 22-S               | 1.0                 | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 23-S               | 1.0                 | -   | -            | 0.17        | 2.97        | 0.37        | 1.56        | 30.81      | -           | -           | -           | 34.07      | 3.85       | -          |
| 24-S               | 1.0                 | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 25-S               | 1.0                 | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-09

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| 26-S               | 1.0                 | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 27-S               | 1.0                 | 8.0 | -            | 1.03        | 9.35        | 0.10        | 3.54        | 59.42      | -           | -           | -           | 72.81      | 7.03       | -          |
| 27-B               | 15.2                | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 28-S               | 1.0                 | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 29-S               | 1.0                 | 8.0 | -            | 0.43        | 7.68        | 0.14        | 2.55        | 51.28      | -           | -           | -           | -          | -          | -          |
| 29-B               | 14.9                | -   | -            | 0.64        | 0.99        | 0.10        | 3.54        | 4.40       | -           | -           | -           | -          | -          | -          |
| 30-S               | 1.0                 | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 31-S               | 1.0                 | -   | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| 32-S               | 1.0                 | -   | -            | 0.47        | 0.06        | 0.42        | 4.33        | 20.03      | -           | -           | -           | -          | -          | -          |
| 33-S               | 1.0                 | -   | -            | 0.23        | 9.05        | 0.40        | 1.96        | 65.53      | -           | -           | -           | -          | -          | -          |
| MR-1S              | 1.0                 | -   | -            | 0.44        | 11.59       | 0.51        | 2.55        | 84.83      | -           | -           | -           | -          | -          | -          |
| MR-1B              | 13.0                | -   | -            | 0.97        | 1.51        | 0.40        | 6.90        | 15.74      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -   | -            | 0.48        | 12.32       | 0.19        | 2.35        | 18.51      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | -   | -            | 0.48        | 10.69       | 0.19        | 1.36        | 22.89      | 320         | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -   | -            | 0.40        | 11.95       | 0.56        | 1.96        | 90.72      | -           | -           | -           | 40.69      | 4.38       | -          |
| DR-3B              | 13.3                | -   | -            | 0.68        | 0.97        | 0.74        | 4.53        | 14.57      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -   | -            | 0.47        | 12.50       | 0.21        | 1.76        | 16.35      | -           | -           | -           | 76.57      | 8.04       | -          |
| DR-5B              | 3.3                 | -   | -            | 0.47        | 17.13       | 0.47        | 2.35        | 67.60      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -   | -            | 0.38        | 11.16       | 0.33        | 0.57        | 63.36      | -           | -           | -           | -          | -          | -          |
| PC-2S              | 1.0                 | -   | -            | 0.31        | 11.34       | 0.56        | 1.56        | 95.14      | 310         | -           | -           | 67.54      | 8.57       | -          |
| PC-3S              | 1.0                 | -   | -            | 0.24        | 11.81       | 0.49        | 1.36        | 67.47      | 325         | -           | -           | 41.69      | 4.35       | -          |
| PC-3B              | 13.4                | -   | -            | 0.66        | 0.94        | 0.56        | 3.73        | 11.98      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | -   | -            | 0.36        | 9.92        | 0.35        | 1.16        | 74.49      | 334         | -           | -           | 58.99      | 5.93       | -          |
| PC-5B              | 3.0                 | -   | -            | 0.51        | 8.80        | 0.24        | 1.56        | 27.99      | -           | -           | -           | -          | -          | -          |
| FR-1S              | 1.0                 | -   | -            | 0.14        | 8.40        | 0.24        | 1.56        | 87.60      | 322         | -           | -           | 60.29      | 8.06       | -          |
| FR-2S              | 1.0                 | -   | -            | 0.43        | 12.13       | 0.17        | 1.96        | 28.60      | 319         | -           | -           | 90.13      | 11.25      | -          |
| FR-3S              | 1.0                 | -   | -            | 0.38        | 12.70       | 0.42        | 1.36        | 90.85      | 310         | -           | -           | 59.14      | 7.24       | -          |
| FR-3B              | 13.0                | -   | -            | 0.45        | 0.42        | 0.47        | 3.93        | 10.55      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-09

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FR-5S              | 1.0                 | -  | -            | 0.19        | 11.63       | 0.47        | 0.77        | 74.92      | 334         | -           | -           | 58.37      | 6.56       | -          |
| FR-7S              | 1.0                 | -  | -            | 0.59        | 8.94        | 0.10        | 1.16        | 25.96      | -           | -           | -           | -          | -          | -          |
| WB-3S              | 1.0                 | -  | -            | 0.39        | 14.69       | 0.47        | 1.76        | 93.10      | 325         | -           | -           | 69.54      | 7.94       | -          |
| WB-3B              | 13.3                | -  | -            | 0.32        | -           | 0.35        | 2.94        | 8.69       | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | -  | -            | 0.50        | 13.43       | 0.10        | 1.56        | 40.68      | 291         | -           | -           | 77.89      | 10.61      | -          |
| CP-3B              | 14.2                | -  | -            | 0.30        | -           | 0.33        | 2.35        | 9.08       | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.55        | 5.04        | 0.33        | 1.76        | 87.86      | 333         | -           | -           | 75.82      | 7.68       | -          |
| FM-3S              | 1.0                 | -  | -            | 0.44        | 4.69        | 0.28        | 1.56        | 91.63      | 320         | -           | -           | 74.85      | 7.35       | -          |
| FM-3B              | 13.9                | -  | -            | 0.38        | 0.00        | 0.37        | 2.75        | 8.47       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -  | -            | 0.53        | 11.83       | 0.47        | 1.96        | 84.27      | 320         | -           | -           | 124.38     | 15.58      | -          |
| FM-5B              | 3.6                 | -  | -            | 0.15        | 2.85        | 0.28        | 1.76        | 20.38      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | -            | 0.40        | 7.81        | 0.42        | 1.76        | 73.19      | -           | -           | -           | 75.68      | 8.01       | -          |

## MOBILE BAY CRUISE MB-09

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|----------------|----------------|------------------|-------------------|
| 1                  | 1.0                 | 93.30                  | 6.10           | 7.77           | 20               | -                 |
| 2                  | 1.0                 | 45.00                  | 4.20           | 3.52           | 25               | -                 |
| 3                  | 1.0                 | 83.20                  | 4.40           | 5.55           | 18               | -                 |
| 4                  | 1.0                 | 32.00                  | 5.20           | 3.47           | 30               | -                 |
| 5                  | 1.0                 | 21.20                  | 4.60           | -              | 35               | -                 |
| 6                  | 1.0                 | -                      | 3.40           | 0.60           | 190              | -                 |
| 7                  | 1.0                 | -                      | 2.40           | 0.77           | 155              | -                 |
| 8                  | 1.0                 | -                      | 2.70           | 0.75           | 60               | -                 |
| 9                  | 1.0                 | -                      | 2.70           | 0.61           | 110              | -                 |
| 10-S               | 1.0                 | -                      | 14.20          | -              | 30               | -                 |
| 10-B               | 14.5                | -                      | 4.00           | -              | -                | -                 |
| 12-S               | 1.0                 | -                      | -              | -              | 25               | -                 |
| 13-S               | 1.0                 | -                      | 42.40          | -              | 25               | -                 |
| 13-B               | 13.9                | -                      | 3.90           | -              | -                | -                 |
| 14-S               | 1.0                 | -                      | -              | 2.34           | 30               | -                 |
| 15-S               | 1.0                 | -                      | -              | -              | 50               | -                 |
| 16-S               | 1.0                 | -                      | 5.30           | -              | 65               | -                 |
| 16-B               | 20.3                | -                      | 1.10           | -              | -                | -                 |
| 17-S               | 1.0                 | -                      | -              | -              | 300              | -                 |
| 18-S               | 1.0                 | -                      | -              | -              | 250              | -                 |
| 19-S               | 1.0                 | -                      | 2.40           | 0.87           | 75               | -                 |
| 19-B               | 14.9                | -                      | 2.60           | -              | -                | -                 |
| 20-S               | 1.0                 | -                      | -              | -              | 60               | -                 |
| 21-S               | 1.0                 | -                      | 0.40           | -              | 250              | -                 |
| 22-S               | 1.0                 | -                      | -              | -              | 200              | -                 |
| 23-S               | 1.0                 | -                      | 0.10           | 0.56           | 200              | -                 |
| 24-S               | 1.0                 | -                      | -              | -              | 200              | -                 |
| 25-S               | 1.0                 | -                      | -              | -              | 250              | -                 |



## MOBILE BAY CRUISE MB-09

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTE<br>(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m <sup>2</sup> /d |
|--------------------|---------------------|------------------------|--------------|----------------|------------------|--------------------------------|
| 26-S               | 1.0                 | -                      | -            | 125            | -                | -                              |
| 27-S               | 1.0                 | -                      | 4.80         | 0.97           | 50               | -                              |
| 27-B               | 15.2                | -                      | -            | -              | -                | -                              |
| 28-S               | 1.0                 | -                      | -            | 125            | -                | -                              |
| 29-S               | 1.0                 | -                      | 4.80         | 0.71           | 125              | -                              |
| 29-B               | 14.9                | -                      | 2.30         | -              | 60               | -                              |
| 30-S               | 1.0                 | -                      | -            | 60             | -                | -                              |
| 31-S               | 1.0                 | -                      | -            | 125            | -                | -                              |
| 32-S               | 1.0                 | -                      | 1.60         | 0.41           | 210              | -                              |
| 33-S               | 1.0                 | -                      | 8.50         | 0.85           | 35               | -                              |
| MR-1S              | 1.0                 | 16.40                  | 6.70         | 2.69           | 40               | -                              |
| MR-1B              | 13.0                | 107.50                 | 2.00         | -              | -                | -                              |
| MR-2S              | 1.0                 | 18.00                  | 6.90         | 2.39           | 35               | -                              |
| DR-1S              | 1.0                 | 27.50                  | 14.10        | 2.69           | 50               | -                              |
| DR-3S              | 1.0                 | 22.40                  | 6.50         | 1.96           | 50               | -                              |
| DR-3B              | 13.3                | 86.00                  | 1.80         | -              | -                | -                              |
| DR-5S              | 1.0                 | 31.50                  | 7.20         | 2.72           | 50               | -                              |
| DR-5B              | 3.3                 | 30.00                  | 5.20         | -              | -                | -                              |
| DR-7S              | 1.0                 | 28.40                  | 9.20         | 3.13           | 45               | -                              |
| PC-2S              | 1.0                 | 18.00                  | 9.00         | 1.94           | 55               | -                              |
| PC-3S              | 1.0                 | 18.40                  | 15.10        | 1.89           | 55               | -                              |
| PC-3B              | 13.4                | 123.50                 | 2.60         | -              | -                | -                              |
| PC-5S              | 1.0                 | 34.40                  | 14.20        | 3.19           | 25               | -                              |
| PC-5B              | 3.0                 | 32.50                  | 13.20        | -              | -                | -                              |
| FR-1S              | 1.0                 | 22.80                  | 19.00        | 2.07           | 55               | -                              |
| FR-2S              | 1.0                 | 22.00                  | 13.00        | 1.95           | 40               | -                              |
| FR-3S              | 1.0                 | 25.20                  | 11.50        | 2.46           | 40               | -                              |
| FR-3B              | 13.0                | 76.40                  | 2.80         | -              | -                | -                              |

MOBILE BAY CRUISE MB-09

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| FR-5S              | 1.0                 | 14.00                  | 16.90           | 2.34           | 50             | -                | -                 |
| FR-7S              | 1.0                 | 40.00                  | 10.00           | 3.78           | 25             | -                | -                 |
| WB-3S              | 1.0                 | 42.80                  | 6.60            | 2.68           | 35             | -                | -                 |
| WB-3B              | 13.3                | 60.40                  | 3.10            | -              | -              | -                | -                 |
| CP-3S              | 1.0                 | 28.40                  | 6.30            | 2.56           | 45             | -                | -                 |
| CP-3B              | 14.2                | 93.20                  | 3.50            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 35.60                  | 4.60            | 2.89           | 30             | -                | -                 |
| FM-3S              | 1.0                 | 53.20                  | 5.30            | 3.00           | 40             | -                | -                 |
| FM-3B              | 13.9                | 90.40                  | 3.70            | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 57.20                  | 7.00            | 2.23           | 30             | -                | -                 |
| FM-5B              | 3.6                 | 15.60                  | 3.10            | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 44.00                  | 5.80            | 1.36           | 50             | -                | -                 |



## ***Mobile Bay Cruise Report***

***MB-10***

14 June 1990

***Vessel:*** *R/V Deborah B.*

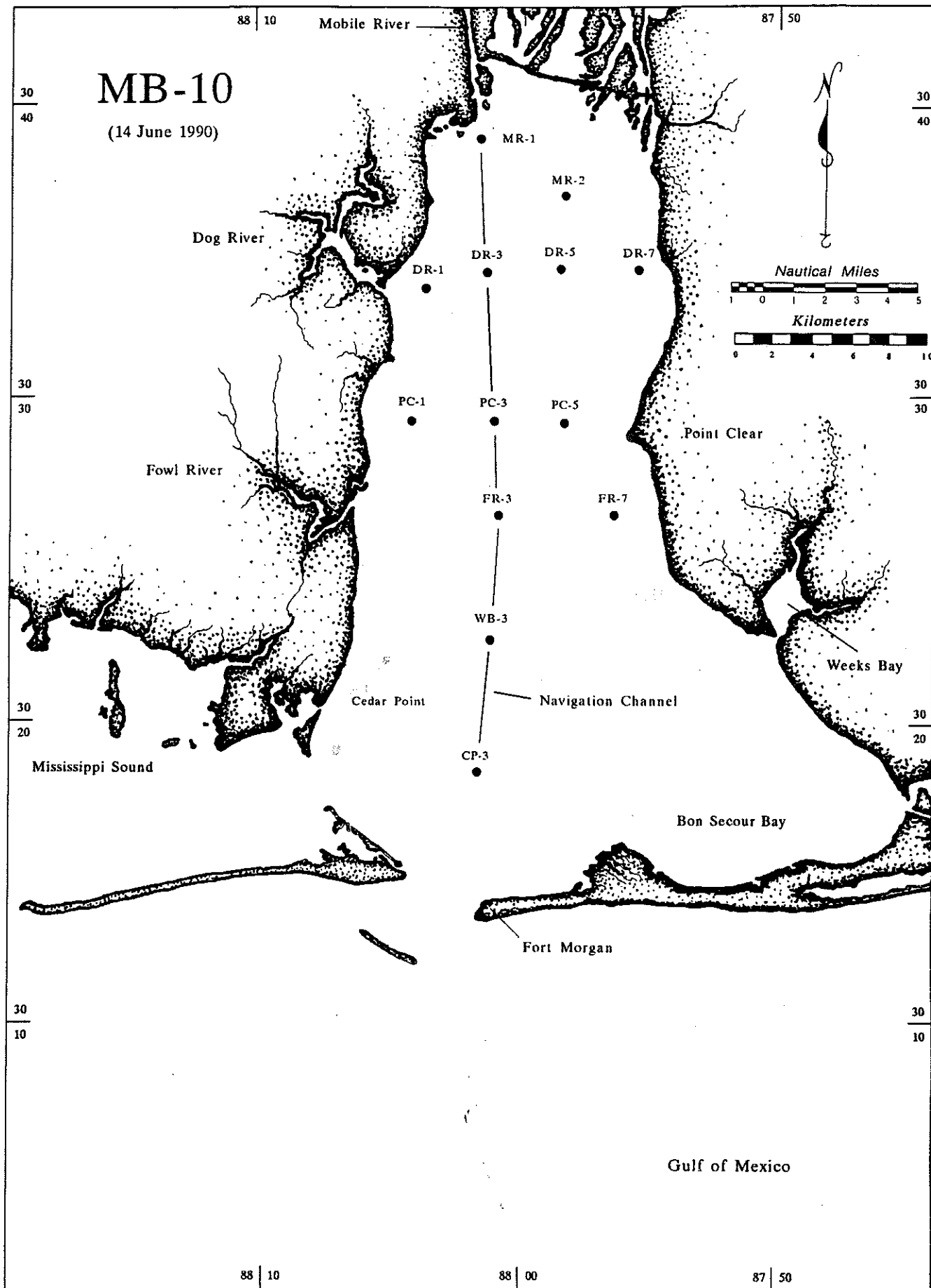
***Operation Area:*** Mobile Bay: from Mobile River to Cedar Point transect

***Scientific Party:*** Jon Pennock (Chief Scientist)  
Ramona Schreiber  
Alan Gunter  
Ocean Science Class (5 students)

***Supporting Agency:*** Marine Environmental Sciences Consortium

***Research Objectives:*** Niskin bottle hydrocast samples were made for nutrients, chlorophyll, suspended sediments at 13 surface stations (all 13 included bottom water casts), and for PC/PN at selected surface stations. Surface & bottom salinity, temperature and dissolved oxygen were obtained using a VWR meter, a Conductometer and an Orbisphere at all stations. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, sigma-t) were obtained with a Seabird SBE-25 at all stations.

***Cruise Summary:*** Departed DISL 0700. Deadheaded to station MR-1. Began sampling 0945. Stations were continued going downbay through station CP-3. Returned to DISL 1530.



## MOBILE BAY CRUISE MB-10

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 6/14/90       | 948           | 30         | 38.6       | 88          | 1.9         | 12780.4          | 47181.9          | 14.3                | 3.5               | 28.7        | 8.1         | 107         |
| MR-1B              | 13.3                | 6/14/90       | 948           | 30         | 38.6       | 88          | 1.9         | 12780.4          | 47181.9          | 14.3                | 25.4              | 27.2        | 3.8         | 56          |
| MR-2S              | 1.0                 | 6/14/90       | 1021          | 30         | 36.3       | 87          | 58.6        | 12814.9          | 47175.1          | 3.6                 | 2.0               | 29.3        | 8.7         | 115         |
| MR-2B              | 2.6                 | 6/14/90       | 1021          | 30         | 36.3       | 87          | 58.6        | 12814.9          | 47175.1          | 3.6                 | 2.6               | 28.8        | 8.1         | 106         |
| DR-1S              | 1.0                 | 6/14/90       | 1156          | 30         | 32.8       | 88          | 4.0         | 12755.5          | 47160.0          | 2.7                 | 3.0               | 29.7        | 8.4         | 112         |
| DR-1B              | 1.7                 | 6/14/90       | 1156          | 30         | 32.8       | 88          | 4.0         | 12755.5          | 47160.0          | 2.7                 | 3.5               | 29.2        | 8.4         | 112         |
| DR-3S              | 1.0                 | 6/14/90       | 1134          | 30         | 34.0       | 88          | 1.6         | 12780.9          | 47165.2          | 13.7                | 4.2               | 29.8        | 8.5         | 114         |
| DR-3B              | 12.7                | 6/14/90       | 1134          | 30         | 34.0       | 88          | 1.6         | 12780.9          | 47165.2          | 13.7                | 26.7              | 27.1        | 4.5         | 66          |
| DR-5S              | 1.0                 | 6/14/90       | 1112          | 30         | 34.1       | 87          | 58.5        | 12814.3          | 47167.0          | 2.7                 | 4.4               | 28.8        | 8.1         | 108         |
| DR-5B              | 1.7                 | 6/14/90       | 1112          | 30         | 34.1       | 87          | 58.5        | 12814.3          | 47167.0          | 2.7                 | 4.5               | 28.8        | 8.2         | 109         |
| DR-7S              | 1.0                 | 6/14/90       | 1056          | 30         | 34.4       | 87          | 56.1        | 12839.9          | 47169.2          | 3.1                 | 2.3               | 28.7        | 8.5         | 111         |
| DR-7B              | 2.1                 | 6/14/90       | 1056          | 30         | 34.4       | 87          | 56.1        | 12839.9          | 47169.2          | 3.1                 | 2.6               | 28.7        | 7.7         | 101         |
| PC-1S              | 1.0                 | 6/14/90       | 1219          | 30         | 28.9       | 88          | 4.1         | 12752.1          | 47145.2          | 3.4                 | 5.2               | 29.9        | 8.2         | 112         |
| PC-1B              | 2.4                 | 6/14/90       | 1219          | 30         | 28.9       | 88          | 4.1         | 12752.1          | 47145.2          | 3.4                 | 5.7               | 29.1        | 8.3         | 112         |
| PC-3S              | 1.0                 | 6/14/90       | 1238          | 30         | 28.5       | 88          | 1.1         | 12783.6          | 47144.8          | 14.6                | 6.2               | 29.3        | 8.7         | 118         |
| PC-3B              | 13.6                | 6/14/90       | 1238          | 30         | 28.5       | 88          | 1.1         | 12783.6          | 47144.8          | 14.6                | 28.0              | 26.8        | 3.9         | 57          |
| PC-5S              | 1.0                 | 6/14/90       | 1259          | 30         | 28.3       | 87          | 58.1        | 12815.1          | 47145.0          | 4.0                 | 4.8               | 29.6        | 10.8        | 146         |
| PC-5B              | 3.0                 | 6/14/90       | 1259          | 30         | 28.3       | 87          | 58.1        | 12815.1          | 47145.0          | 4.0                 | 6.8               | 28.5        | 6.2         | 83          |
| FR-3S              | 1.0                 | 6/14/90       | 1334          | 30         | 26.5       | 88          | 0.8         | 12781.7          | 47136.9          | 14.0                | 7.1               | 29.2        | 7.8         | 107         |
| FR-3B              | 13.0                | 6/14/90       | 1334          | 30         | 26.5       | 88          | 0.8         | 12781.7          | 47136.9          | 14.0                | 27.5              | 26.7        | 4.5         | 66          |
| FR-5S              | 1.0                 | 6/14/90       | 1316          | 30         | 26.4       | 87          | 58.1        | 12812.4          | 47137.2          | 4.0                 | 5.5               | 29.1        | 8.1         | 108         |
| FR-5B              | 3.0                 | 6/14/90       | 1316          | 30         | 26.4       | 87          | 58.1        | 12812.4          | 47137.2          | 4.0                 | 7.0               | 28.3        | 6.8         | 91          |
| WB-3S              | 1.0                 | 6/14/90       | 1408          | 30         | 22.6       | 88          | 1.3         | 12777.5          | 47121.1          | 14.3                | 11.4              | 29.9        | 7.5         | 106         |
| WB-3B              | 13.3                | 6/14/90       | 1408          | 30         | 22.6       | 88          | 1.3         | 12777.5          | 47121.1          | 14.3                | 28.0              | 26.8        | 4.5         | 67          |
| CP-3S              | 1.0                 | 6/14/90       | 1438          | 30         | 18.2       | 88          | 1.9         | 12767.8          | 47102.9          | 15.2                | 17.2              | 29.8        | 7.4         | 107         |
| CP-3B              | 14.2                | 6/14/90       | 1438          | 30         | 18.2       | 88          | 1.9         | 12767.8          | 47102.9          | 15.2                | 29.9              | 26.5        | 5.0         | 74          |

## MOBILE BAY CRUISE MB-10

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 7.2 | -            | 0.38        | 1.42        | 0.23        | 6.56        | 30.69      | -           | -           | -           | 109.58     | 17.03      | -          |
| MR-1B              | 13.3                | 7.5 | -            | 0.99        | 3.24        | 0.49        | -           | 15.80      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 7.9 | -            | 0.13        | 1.08        | 0.21        | 2.25        | 27.89      | -           | -           | -           | 98.21      | 14.33      | -          |
| MR-2B              | 2.6                 | 7.5 | -            | 0.25        | 2.15        | 0.25        | 4.08        | 29.77      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 7.9 | -            | 0.17        | 0.77        | 0.14        | 2.29        | 26.92      | -           | -           | -           | 72.55      | 19.39      | -          |
| DR-1B              | 1.7                 | 7.6 | -            | 0.13        | 0.41        | 0.12        | 1.90        | 29.17      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 7.9 | -            | -           | -           | -           | -           | -          | -           | -           | -           | 65.17      | 8.96       | -          |
| DR-3B              | 12.7                | 7.6 | -            | 0.84        | 1.61        | 0.29        | -           | 12.68      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 7.9 | -            | 0.22        | 0.68        | 0.07        | 2.95        | 5.83       | -           | -           | -           | 70.05      | 10.44      | -          |
| DR-5B              | 1.7                 | 7.8 | -            | 0.13        | 0.77        | 0.13        | 2.60        | 30.51      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 7.8 | -            | -           | -           | -           | -           | -          | -           | -           | -           | 80.43      | 13.08      | -          |
| DR-7B              | 2.1                 | 7.4 | -            | 0.13        | 0.13        | 0.08        | 1.43        | 2.66       | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 8.0 | -            | 0.37        | 0.37        | 0.07        | 2.67        | 26.37      | -           | -           | -           | 112.82     | 15.45      | -          |
| PC-1B              | 2.4                 | 7.8 | -            | 0.25        | 0.25        | 0.06        | 3.47        | 4.23       | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 8.1 | -            | 0.26        | 0.26        | 0.07        | 4.19        | 26.32      | -           | -           | -           | 132.42     | 16.47      | -          |
| PC-3B              | 13.6                | 7.5 | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 8.6 | -            | 0.34        | 0.36        | 0.08        | 1.86        | 26.92      | -           | -           | -           | -          | -          | -          |
| PC-5B              | 3.0                 | 7.8 | -            | 0.13        | 0.32        | 0.07        | 5.08        | 26.00      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 8.1 | -            | 0.14        | 0.42        | 0.08        | 6.68        | 22.37      | -           | -           | -           | 78.40      | 10.35      | -          |
| FR-3B              | 13.0                | 7.6 | -            | 0.96        | 1.76        | 0.41        | -           | 11.03      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 8.1 | -            | 0.14        | 0.33        | 0.07        | 4.63        | 24.07      | -           | -           | -           | 93.25      | 12.43      | -          |
| FR-5B              | 3.0                 | 7.3 | -            | 0.85        | 1.70        | 0.31        | 14.15       | 10.66      | -           | -           | -           | -          | -          | -          |
| WB-3S              | 1.0                 | 7.9 | -            | 0.16        | -           | -           | -           | -          | -           | -           | -           | 82.76      | 9.77       | -          |
| WB-3B              | 13.3                | 7.6 | -            | -           | 0.41        | 0.09        | 6.18        | 26.09      | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | 7.8 | -            | 0.21        | 0.51        | 0.09        | 14.10       | 16.95      | -           | -           | -           | 85.28      | 10.34      | -          |
| CP-3B              | 14.2                | 7.7 | -            | 0.71        | 1.63        | 0.30        | -           | 8.27       | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-10

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 10.00                  | 10.33           | 1.79           | 80             | -                | -                 |
| MR-1B              | 13.3                | 171.54                 | 2.84            | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 14.00                  | 12.26           | 1.60           | 85             | -                | -                 |
| MR-2B              | 2.6                 | 82.00                  | 9.38            | -              | -              | -                | -                 |
| DR-1S              | 1.0                 | 13.60                  | 4.92            | 0.92           | 110            | -                | -                 |
| DR-1B              | 1.7                 | 16.80                  | 9.55            | -              | -              | -                | -                 |
| DR-3S              | 1.0                 | 16.40                  | 3.36            | 1.37           | 100            | -                | -                 |
| DR-3B              | 12.7                | 83.60                  | 2.23            | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 16.40                  | 5.05            | 1.23           | 125            | -                | -                 |
| DR-5B              | 1.7                 | 14.80                  | 8.18            | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 20.00                  | 13.94           | 1.50           | 105            | -                | -                 |
| DR-7B              | 2.1                 | 14.00                  | 11.49           | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 14.40                  | 8.65            | 1.28           | 80             | -                | -                 |
| PC-1B              | 2.4                 | 22.00                  | 12.39           | -              | -              | -                | -                 |
| PC-3S              | 1.0                 | 6.00                   | 13.30           | 0.99           | 135            | -                | -                 |
| PC-3B              | 13.6                | 78.80                  | 2.58            | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | -                      | 34.97           | 1.35           | 105            | -                | -                 |
| PC-5B              | 3.0                 | 34.00                  | 8.00            | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 22.80                  | 4.36            | 0.97           | 150            | -                | -                 |
| FR-3B              | 13.0                | 91.60                  | 1.90            | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 26.40                  | 9.42            | 0.99           | 150            | -                | -                 |
| FR-5B              | 3.0                 | 33.60                  | 4.39            | -              | -              | -                | -                 |
| WB-3S              | 1.0                 | 35.60                  | 3.50            | 0.91           | 150            | -                | -                 |
| WB-3B              | 13.3                | 94.40                  | 2.19            | -              | -              | -                | -                 |
| CP-3S              | 1.0                 | 10.00                  | 5.16            | 0.84           | 125            | -                | -                 |
| CP-3B              | 14.2                | -                      | 4.52            | -              | -              | -                | -                 |





## ***Mobile Bay Cruise Report***

***MB-11***

17 July 1990

***Vessel:*** *R/V Deborah B.*

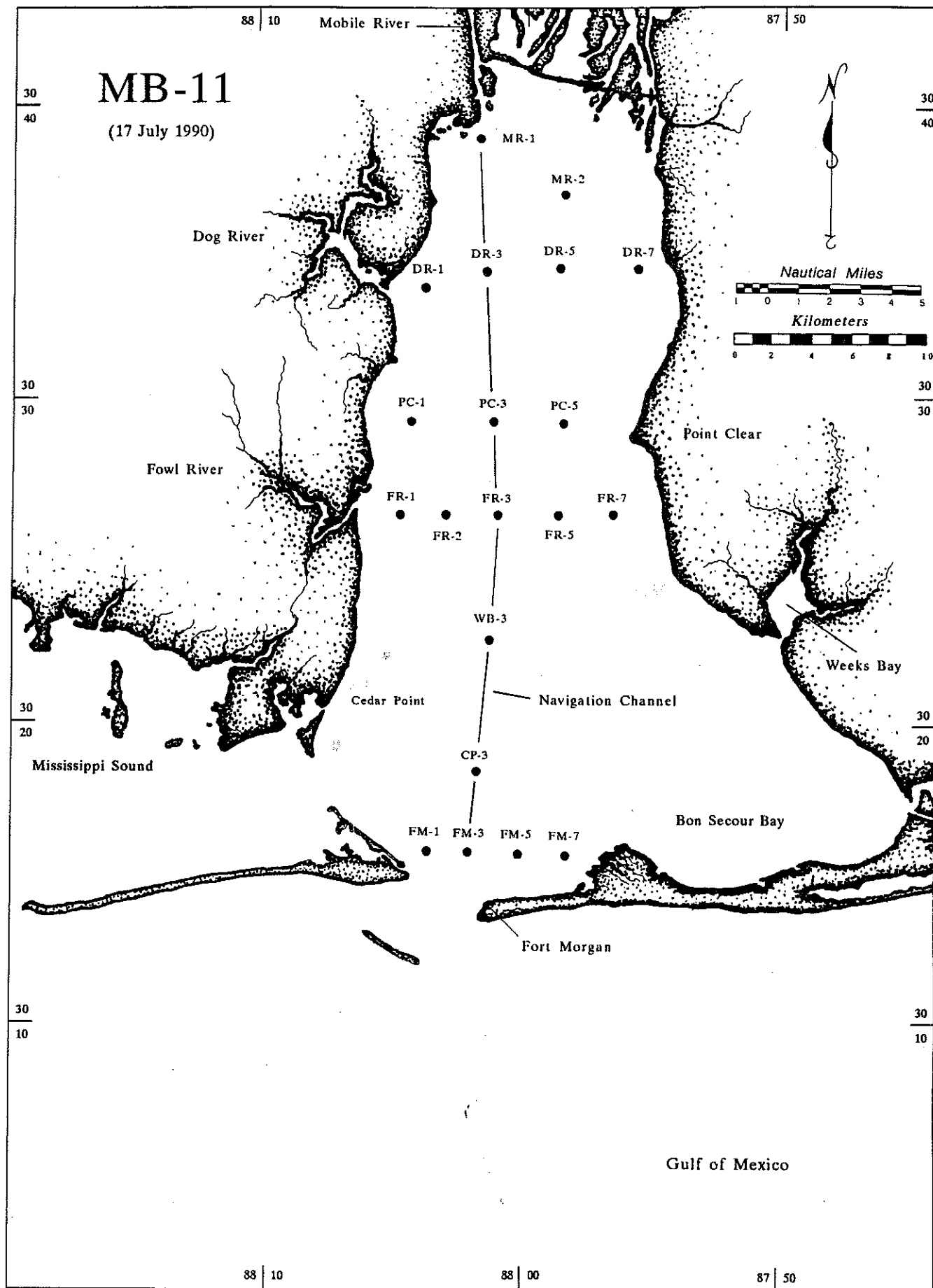
***Operation Area:*** Mobile Bay: from Fort Morgan to Mobile River

***Scientific Party:*** Jon Pennock (Chief Scientist)  
Ramona Schreiber

***Supporting Agency:*** Marine Environmental Sciences Consortium

***Research Objectives:*** Niskin bottle hydrocast samples were made for nutrients, chlorophyll, suspended sediments at 20 surface stations (13 of those including bottom water casts), and for PC/PN at selected surface stations. Surface & bottom salinity, temperature and dissolved oxygen were obtained using a VWR meter, a Conductometer and an Orbisphere at all stations. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, sigma-t) were obtained with a Seabird SBE-25 at all stations.

***Cruise Summary:*** Departed DISL 0730. Deadheaded to station FM-1. Began sampling 0740. Stations were continued going upbay through station MR-1. Returned to DISL 1530.



## MOBILE BAY CRUISE MB-11

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LON<br>DEG : MIN | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|------------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 7/17/90       | 1344          | 30 : 38.3        | 88 : 1.9         | 1.9        | 12780.6          | 47181.0          | 14.0                | 7.5               | 29.3        | 5.9         | 81          |
| MR-1B              | 13.0                | 7/17/90       | 1344          | 30 : 38.3        | 88 : 1.9         | 1.9        | 12780.6          | 47181.0          | 14.0                | 31.2              | 27.6        | 3.0         | 45          |
| MR-2S              | 1.0                 | 7/17/90       | 1322          | 30 : 36.2        | 87 : 58.6        | 58.6       | 12815.0          | 47174.8          | 3.4                 | 3.5               | 29.3        | 6.8         | 91          |
| DR-1S              | 1.0                 | 7/17/90       | 1215          | 30 : 32.8        | 88 : 4.0         | 4.0        | 12755.6          | 47160.1          | 2.7                 | 6.4               | 28.3        | 7.0         | 93          |
| DR-1B              | 1.7                 | 7/17/90       | 1215          | 30 : 32.8        | 88 : 4.0         | 4.0        | 12755.6          | 47160.1          | 2.7                 | -                 | -           | -           | -           |
| DR-3S              | 1.0                 | 7/17/90       | 1228          | 30 : 33.9        | 88 : 1.6         | 1.6        | 12781.0          | 47165.1          | 13.4                | 4.7               | 28.4        | 7.7         | 101         |
| DR-3B              | 12.4                | 7/17/90       | 1228          | 30 : 33.9        | 88 : 1.6         | 1.6        | 12781.0          | 47165.1          | 13.4                | 31.5              | 27.4        | 3.5         | 53          |
| DR-5S              | 1.0                 | 7/17/90       | 1248          | 30 : 34.0        | 87 : 58.5        | 58.5       | 12813.9          | 47166.7          | 3.4                 | 5.5               | 28.6        | 7.2         | 96          |
| DR-5B              | 2.4                 | 7/17/90       | 1248          | 30 : 34.0        | 87 : 58.5        | 58.5       | 12813.9          | 47166.7          | 3.4                 | 5.9               | 28.8        | 6.7         | 90          |
| DR-7S              | 1.0                 | 7/17/90       | 1303          | 30 : 34.0        | 87 : 56.1        | 56.1       | 12839.8          | 47167.6          | 3.1                 | 5.1               | 28.7        | 7.0         | 93          |
| DR-7B              | 2.1                 | 7/17/90       | 1303          | 30 : 34.0        | 87 : 56.1        | 56.1       | 12839.8          | 47167.6          | 3.1                 | 7.9               | 29.2        | 3.6         | 49          |
| PC-1S              | 1.0                 | 7/17/90       | 1151          | 30 : 28.9        | 88 : 4.1         | 4.1        | 12752.3          | 47145.0          | 3.1                 | 8.9               | 28.4        | 6.6         | 84          |
| PC-3S              | 1.0                 | 7/17/90       | 1131          | 30 : 28.6        | 88 : 1.1         | 1.1        | 12783.7          | 47145.0          | 14.0                | 9.4               | 28.3        | 7.1         | 96          |
| PC-3B              | 13.0                | 7/17/90       | 1131          | 30 : 28.6        | 88 : 1.1         | 1.1        | 12783.7          | 47145.0          | 14.0                | 31.9              | 27.2        | 3.7         | 56          |
| PC-5S              | 1.0                 | 7/17/90       | 1115          | 30 : 28.3        | 87 : 58.1        | 58.1       | 12814.5          | 47144.8          | 3.7                 | 10.4              | 28.0        | 6.9         | 93          |
| PC-5B              | 2.7                 | 7/17/90       | 1115          | 30 : 28.3        | 87 : 58.1        | 58.1       | 12814.5          | 47144.8          | 3.7                 | 14.0              | 29.0        | 3.3         | 47          |
| FR-1S              | 1.0                 | 7/17/90       | 959           | 30 : 26.8        | 88 : 4.8         | 4.8        | 12743.6          | 47136.8          | 3.4                 | 9.9               | 28.2        | 7.2         | 98          |
| FR-2S              | 1.0                 | 7/17/90       | 1013          | 30 : 26.7        | 88 : 2.7         | 2.7        | 12765.1          | 47137.1          | 3.4                 | 10.2              | 27.9        | 7.5         | 102         |
| FR-3S              | 1.0                 | 7/17/90       | 1026          | 30 : 26.6        | 88 : 0.8         | 0.8        | 12784.9          | 47137.3          | 13.4                | 11.1              | 27.9        | 7.6         | 103         |
| FR-3B              | 12.4                | 7/17/90       | 1026          | 30 : 26.6        | 88 : 0.8         | 0.8        | 12784.9          | 47137.3          | 13.4                | 31.7              | 27.1        | 5.5         | 83          |
| FR-5S              | 1.0                 | 7/17/90       | 1044          | 30 : 26.5        | 87 : 58.1        | 58.1       | 12813.0          | 47137.7          | 3.7                 | 12.3              | 27.9        | 7.3         | 100         |
| FR-5B              | 2.7                 | 7/17/90       | 1044          | 30 : 26.5        | 87 : 58.1        | 58.1       | 12813.0          | 47137.7          | 3.7                 | 14.6              | 28.4        | 5.5         | 77          |
| FR-7S              | 1.0                 | 7/17/90       | 1058          | 30 : 26.2        | 87 : 56.3        | 56.3       | 12831.7          | 47137.2          | 3.4                 | 12.9              | 28.3        | 6.7         | 92          |
| WB-3S              | 1.0                 | 7/17/90       | 927           | 30 : 22.6        | 88 : 1.3         | 1.3        | 12777.8          | 47121.0          | 14.3                | 16.6              | 27.8        | 7.2         | 101         |
| WB-3B              | 13.3                | 7/17/90       | 927           | 30 : 22.6        | 88 : 1.3         | 1.3        | 12777.8          | 47121.0          | 14.3                | 31.4              | 27.3        | 6.1         | 92          |
| CP-3S              | 1.0                 | 7/17/90       | 856           | 30 : 18.2        | 88 : 1.9         | 1.9        | 12768.2          | 47103.0          | 15.5                | 19.5              | 27.5        | 7.2         | 102         |
| CP-3B              | 14.5                | 7/17/90       | 856           | 30 : 18.2        | 88 : 1.9         | 1.9        | 12768.2          | 47103.0          | 15.5                | 31.5              | 27.1        | 6.3         | 94          |
| FM-1S              | 1.0                 | 7/17/90       | 743           | 30 : 15.7        | 88 : 3.7         | 3.7        | 12748.2          | 47091.9          | 5.2                 | 19.0              | 27.1        | 7.4         | 104         |

## MOBILE BAY CRUISE MB-11

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : | LAT<br>MIN | LON<br>DEG : | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|--------------|------------|--------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3S              | 1.0                 | 7/17/90       | 759           | 30 :         | 15.7       | 88 :         | 2.3        | 12763.1          | 47092.4          | 14.9                | 22.4              | 27.4        | 6.7         | 97          |
| FM-3B              | 13.9                | 7/17/90       | 759           | 30 :         | 15.7       | 88 :         | 2.3        | 12763.1          | 47092.4          | 14.9                | 31.5              | 26.6        | 6.5         | 97          |
| FM-5S              | 1.0                 | 7/17/90       | 817           | 30 :         | 15.6       | 88 :         | 0.6        | 12780.1          | 47092.3          | 4.3                 | 25.0              | 27.0        | 7.1         | 103         |
| FM-5B              | 3.3                 | 7/17/90       | 817           | 30 :         | 15.6       | 88 :         | 0.6        | 12780.1          | 47092.3          | 4.3                 | 28.3              | 27.7        | 6.7         | 99          |
| FM-7S              | 1.0                 | 7/17/90       | 833           | 30 :         | 15.5       | 87 :         | 58.9       | 12797.8          | 47092.0          | 4.3                 | 23.9              | 27.1        | 7.1         | 102         |

## MOBILE BAY CRUISE MB-11

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 7.3 | -            | 1.48        | 5.38        | 0.46        | 8.17        | 43.13      | -           | -           | -           | 73.28      | 8.36       | -          |
| MR-1B              | 13.0                | 7.7 | -            | 1.10        | 0.95        | 0.25        | 5.96        | 10.18      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 7.3 | -            | 0.87        | 2.72        | 0.31        | 2.92        | 51.87      | -           | -           | -           | 62.55      | 8.55       | -          |
| DR-1S              | 1.0                 | 7.1 | -            | 0.88        | 0.51        | 0.07        | 2.51        | 28.54      | -           | -           | -           | -          | -          | -          |
| DR-1B              | 1.7                 | 7.1 | -            | 0.89        | 0.39        | 0.06        | 1.84        | -          | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 7.6 | -            | 0.82        | 1.03        | 0.14        | 0.58        | 47.50      | -           | -           | -           | 58.63      | 8.64       | -          |
| DR-3B              | 12.4                | 7.5 | -            | 0.92        | 0.84        | 0.24        | 4.70        | 11.01      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 7.5 | -            | 0.51        | 0.24        | 0.06        | 0.76        | 48.83      | -           | -           | -           | 70.70      | 10.13      | -          |
| DR-5B              | 2.4                 | 7.4 | -            | 0.88        | 0.61        | 0.10        | 2.06        | 42.35      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 7.2 | -            | 0.89        | 0.14        | 0.03        | 0.77        | 54.03      | -           | -           | -           | 58.15      | 8.37       | -          |
| DR-7B              | 2.1                 | 6.9 | -            | 1.10        | 1.02        | 0.17        | 6.33        | 60.80      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 7.5 | -            | 0.86        | 0.70        | 0.09        | 1.50        | 40.87      | -           | -           | -           | 71.88      | 10.97      | -          |
| PC-3S              | 1.0                 | 7.7 | -            | 0.93        | 0.12        | 0.05        | 0.73        | 47.04      | -           | -           | -           | 80.24      | 12.06      | -          |
| PC-3B              | 13.0                | 7.8 | -            | 0.85        | 0.78        | 0.23        | 2.99        | 8.99       | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 7.5 | -            | 1.07        | 0.12        | 0.04        | 0.64        | 61.40      | -           | -           | -           | 77.21      | 12.17      | -          |
| PC-5B              | 2.7                 | 7.1 | -            | 1.11        | 0.05        | 0.01        | 0.04        | 54.82      | -           | -           | -           | -          | -          | -          |
| FR-1S              | 1.0                 | 7.6 | -            | 0.91        | 0.15        | 0.07        | 1.03        | 46.72      | -           | -           | -           | 120.07     | 16.65      | -          |
| FR-2S              | 1.0                 | 7.9 | -            | 0.92        | 0.11        | 0.05        | 0.83        | 46.12      | -           | -           | -           | 88.89      | 12.30      | -          |
| FR-3S              | 1.0                 | 8.0 | -            | 1.00        | 0.07        | 0.05        | 2.41        | 49.62      | -           | -           | -           | 91.57      | 13.04      | -          |
| FR-3B              | 12.4                | 7.8 | -            | 0.92        | 0.73        | 0.22        | 4.28        | 8.80       | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 8.0 | -            | 1.03        | 0.04        | 0.06        | 0.65        | 57.94      | -           | -           | -           | 119.99     | 13.80      | -          |
| FR-5B              | 2.7                 | 7.4 | -            | 1.10        | 0.04        | 0.05        | 0.38        | 48.37      | -           | -           | -           | -          | -          | -          |
| FR-7S              | 1.0                 | 7.8 | -            | 1.06        | 0.09        | 0.04        | 0.67        | 55.83      | -           | -           | -           | 91.26      | 11.14      | -          |
| WB-3S              | 1.0                 | 7.9 | -            | 0.92        | 0.17        | 0.09        | 0.86        | 37.93      | -           | -           | -           | 48.11      | 7.01       | -          |
| WB-3B              | 13.3                | 7.8 | -            | 0.85        | 0.73        | 0.20        | 6.13        | 9.22       | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | 8.0 | -            | 0.95        | 0.19        | 0.05        | 0.59        | 28.54      | -           | -           | -           | 45.25      | 6.63       | -          |
| CP-3B              | 14.5                | 7.9 | -            | 0.68        | 0.65        | 0.17        | 3.68        | 6.50       | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 7.9 | -            | -           | -           | -           | -           | 28.82      | -           | -           | -           | 42.75      | 6.28       | -          |

MOBILE BAY CRUISE MB-11

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | 7.9 | -            | 0.71        | 0.17        | 0.05        | 0.74        | 17.36      | -           | -           | -           | 32.49      | 4.35       | -          |
| FM-3B              | 13.9                | 7.9 | -            | 0.59        | 0.57        | 0.15        | 3.13        | 5.67       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.0 | -            | 0.59        | 0.22        | 0.05        | 0.62        | 11.98      | -           | -           | -           | 35.02      | 4.64       | -          |
| FM-5B              | 3.3                 | 8.0 | -            | 0.41        | 0.25        | 0.06        | 0.84        | 5.54       | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 8.0 | -            | 0.69        | 0.37        | 0.08        | 0.98        | 15.43      | -           | -           | -           | 29.31      | 3.38       | -          |

## MOBILE BAY CRUISE MB-11

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 6.00                   | 2.07            | -              | 80             | -                | -                 |
| MR-1B              | 13.0                | 29.20                  | 3.33            | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 5.60                   | 12.91           | -              | 85             | -                | -                 |
| DR-1S              | 1.0                 | 23.20                  | 10.07           | -              | 60             | -                | -                 |
| DR-1B              | 1.7                 | -                      | -               | -              | -              | -                | -                 |
| DR-3S              | 1.0                 | 6.00                   | 9.94            | -              | 100            | -                | -                 |
| DR-3B              | 12.4                | 24.80                  | 3.36            | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 5.20                   | 8.91            | -              | 110            | -                | -                 |
| DR-5B              | 2.4                 | 4.40                   | 6.97            | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 28.00                  | 10.33           | -              | 85             | -                | -                 |
| DR-7B              | 2.1                 | 6.40                   | 4.72            | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 8.00                   | 9.30            | -              | 85             | -                | -                 |
| PC-3S              | 1.0                 | 7.20                   | 14.33           | -              | 90             | -                | -                 |
| PC-3B              | 13.0                | 28.00                  | 4.14            | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 6.40                   | 11.49           | -              | 100            | -                | -                 |
| PC-5B              | 2.7                 | 7.20                   | 7.88            | -              | -              | -                | -                 |
| FR-1S              | 1.0                 | 24.40                  | 14.20           | -              | 60             | -                | -                 |
| FR-2S              | 1.0                 | 6.80                   | 17.30           | -              | 125            | -                | -                 |
| FR-3S              | 1.0                 | 6.00                   | 6.84            | -              | 150            | -                | -                 |
| FR-3B              | 12.4                | 24.40                  | 3.73            | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 7.20                   | 14.20           | -              | 125            | -                | -                 |
| FR-5B              | 2.7                 | 8.00                   | 10.20           | -              | -              | -                | -                 |
| FR-7S              | 1.0                 | 7.60                   | 10.46           | -              | 120            | -                | -                 |
| WB-3S              | 1.0                 | 5.60                   | 1.30            | -              | 170            | -                | -                 |
| WB-3B              | 13.3                | 65.20                  | 1.80            | -              | -              | -                | -                 |
| CP-3S              | 1.0                 | 7.20                   | 4.34            | -              | 170            | -                | -                 |
| CP-3B              | 14.5                | 21.60                  | 6.46            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 10.00                  | 2.61            | -              | 125            | -                | -                 |



MOBILE BAY CRUISE MB-11

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| FM-3S              | 1.0                 | 5.20                   | 2.84            | -              | 200            | -                | -                 |
| FM-3B              | 13.9                | -                      | 5.05            | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 8.80                   | 2.34            | -              | 240            | -                | -                 |
| FM-5B              | 3.3                 | -                      | 3.90            | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 10.00                  | 2.32            | -              | 230            | -                | -                 |

## ***Mobile Bay Cruise Report***

***MB-12***

28 January 1991

***Vessel:*** *R/V Deborah B.*

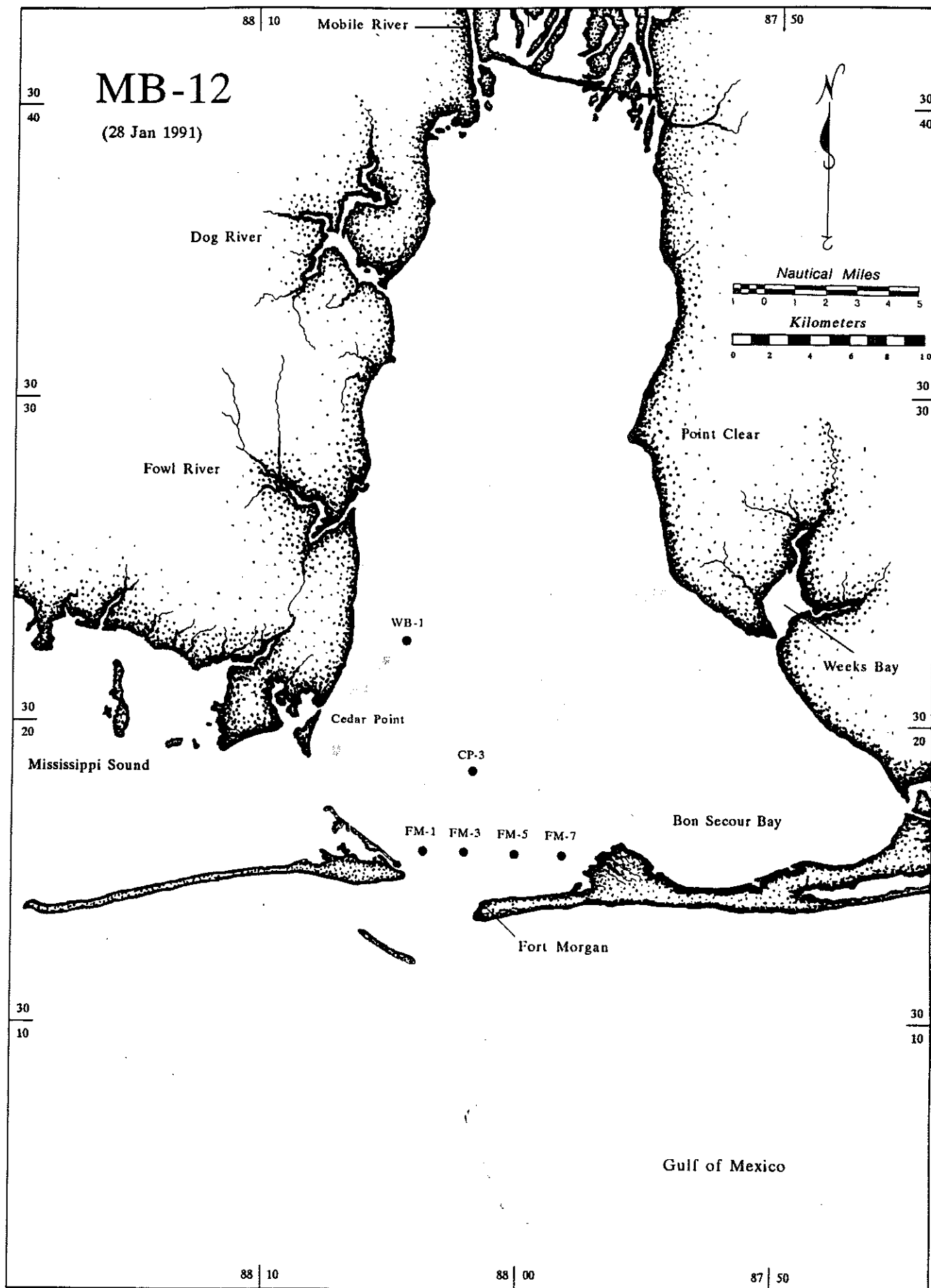
***Operation Area:*** Mobile Bay: from Fort Morgan to Weeks Bay transect

***Scientific Party:*** Jon Pennock (Chief Scientist)  
Beth Gaza  
Ramona Schreiber

***Supporting Agencies:*** Marine Environmental Sciences Consortium  
U.S. Geological Survey

***Research Objectives:*** Niskin bottle hydrocast samples were made for nutrients and chlorophyll at 6 surface stations (2 of those including bottom water casts). Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Secchi disk and Licor light attenuation measurements were made at each station.

***Cruise Summary:*** Departed DISL 0720. Deadheaded to station FM-1. Began sampling 0730. Stations were continued going upbay through station WB-1. Cruise was terminated following sampling at station WB-1 due to high wind and wave conditions. Returned to DISL 1030.



## MOBILE BAY CRUISE MB-12

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LON<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| WB-1S              | 1.0                 | 1/28/91       | 925           | 30 : 22.5        | 88 : 4.4         | 12745.0          | 47119.9          | 3.9                 | 8.2               | 11.6        | -           | -           |
| CP-3S              | 1.0                 | 1/28/91       | 840           | 30 : 18.3        | 88 : 1.9         | 12768.5          | 47103.5          | 15.2                | 13.5              | 12.0        | -           | -           |
| CP-3B              | 14.2                | 1/28/91       | 840           | 30 : 18.3        | 88 : 1.9         | 12768.5          | 47103.5          | 15.2                | 32.0              | 14.4        | -           | -           |
| FM-1S              | 1.0                 | 1/28/91       | 726           | 30 : 15.7        | 88 : 3.7         | 12748.5          | 47092.1          | 4.8                 | 16.2              | 12.2        | -           | -           |
| FM-3S              | 1.0                 | 1/28/91       | 740           | 30 : 15.7        | 88 : 2.3         | 12763.1          | 47092.5          | 14.6                | 16.1              | 12.2        | -           | -           |
| FM-3B              | 13.6                | 1/28/91       | 740           | 30 : 15.7        | 88 : 2.3         | 12763.1          | 47092.5          | 14.6                | 26.3              | 13.7        | -           | -           |
| FM-5S              | 1.0                 | 1/28/91       | 755           | 30 : 15.8        | 88 : 0.8         | 12778.2          | 47093.1          | 4.3                 | 16.1              | 12.2        | -           | -           |
| FM-7S              | 1.0                 | 1/28/91       | 817           | 30 : 15.9        | 87 : 58.9        | 12798.3          | 47093.9          | 3.6                 | 15.7              | 12.3        | -           | -           |

## MOBILE BAY CRUISE MB-12

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| WB-1S              | 1.0                 | -  | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | -  | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| CP-3B              | 14.2                | -  | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | -  | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| FM-3B              | 13.6                | -  | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -  | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |

MOBILE BAY CRUISE MB-12

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | SESTON CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|------------------------|----------------|----------------|------------------|-------------------|
| WB-1S              | 1.0                 | -                      | 8.71                   | 1.05           | 85             | -                | -                 |
| CP-3S              | 1.0                 | -                      | 5.10                   | 0.84           | 140            | -                | -                 |
| CP-3B              | 14.2                | -                      | 4.32                   | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | -                      | 5.47                   | 0.78           | 125            | -                | -                 |
| FM-3S              | 1.0                 | -                      | 6.13                   | 0.77           | 150            | -                | -                 |
| FM-3B              | 13.6                | -                      | 6.20                   | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | -                      | 10.97                  | 0.96           | 125            | -                | -                 |
| FM-7S              | 1.0                 | -                      | 14.27                  | 1.39           | 110            | -                | -                 |



## ***Mobile Bay Cruise Report***

***MB-13***

4 February 1991

***Vessel:*** *R/V Deborah B.*

***Operation Area:*** Mobile Bay: from Fort Morgan to Mobile River

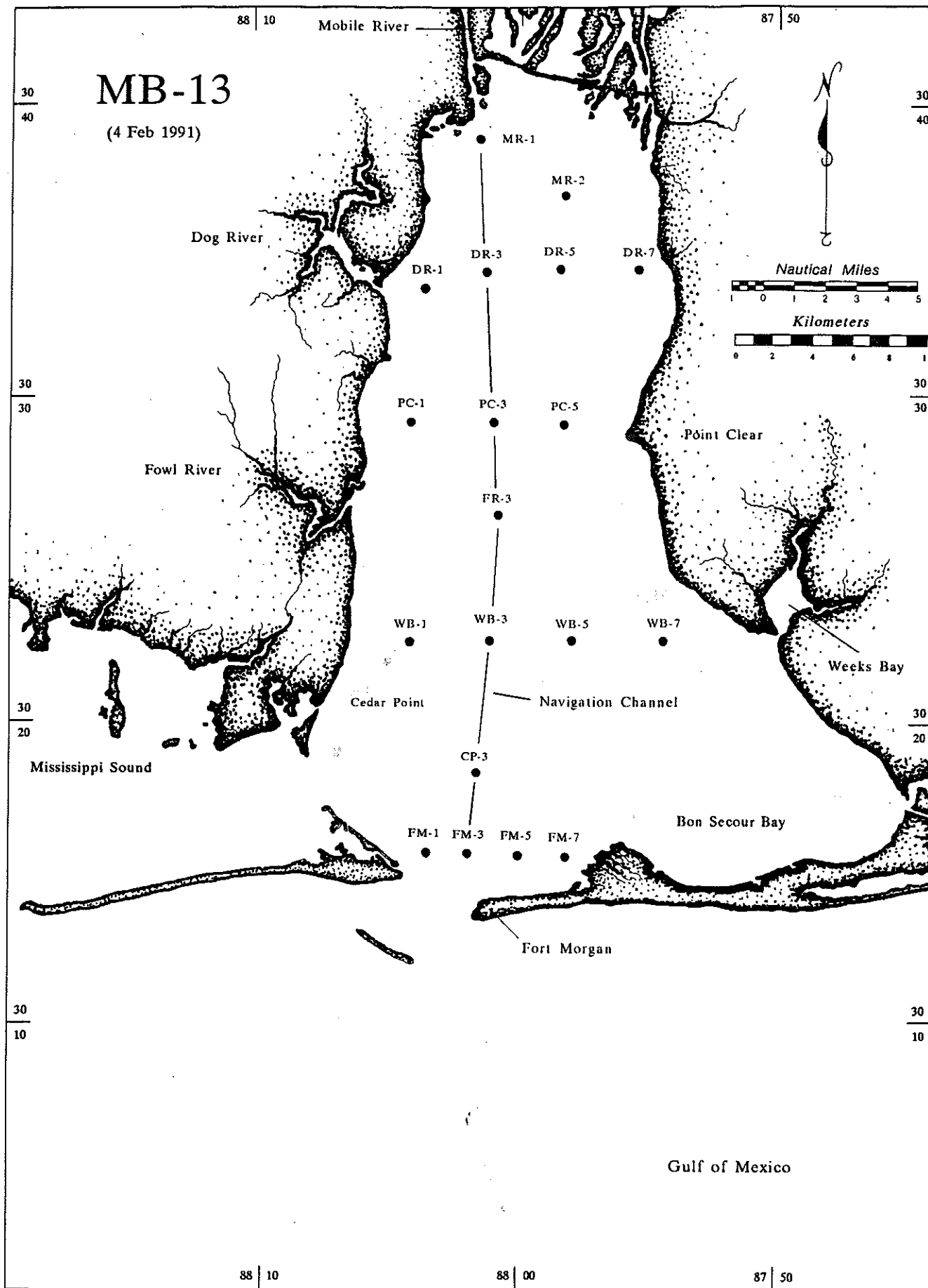
***Scientific Party:*** Jon Pennock (Chief Scientist)  
Felix Fernandez  
Beth Gaza

***Supporting Agencies:*** Marine Environmental Sciences Consortium  
U.S. Geological Survey

***Research Objectives:*** Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 19 surface stations (11 of those including bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, sigma-t) were obtained with a Seabird SBE-25 at all stations.

***Cruise Summary:*** Departed DISL 0730. Deadheaded to station FM-1. Began sampling 0800. Stations were continued going upbay through station MR-1. Returned to DISL 1500.





## MOBILE BAY CRUISE MB-13

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LONG<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|-------------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 2/4/91        | 1325          | 30 : 38.4        | 88 : 2.0          | 12780.1          | 47181.2          | 13.7                | 2.1               | 13.2        | -           | -           |
| MR-1B              | 12.7                | 2/4/91        | 1325          | 30 : 38.4        | 88 : 2.0          | 12780.1          | 47181.2          | 13.7                | 25.2              | 14.4        | -           | -           |
| MR-2S              | 1.0                 | 2/4/91        | 1305          | 30 : 36.4        | 87 : 58.6         | 12815.3          | 47175.4          | 3.6                 | 0.8               | 13.2        | -           | -           |
| DR-1S              | 1.0                 | 2/4/91        | 1202          | 30 : 32.8        | 88 : 4.0          | 12755.5          | 47160.0          | 2.7                 | 1.4               | 14.0        | -           | -           |
| DR-3S              | 1.0                 | 2/4/91        | 1215          | 30 : 34.0        | 88 : 1.6          | 12781.0          | 47165.2          | 13.4                | 1.1               | 13.4        | -           | -           |
| DR-3B              | 12.4                | 2/4/91        | 1215          | 30 : 34.0        | 88 : 1.6          | 12781.0          | 47165.2          | 13.4                | 29.8              | 14.7        | -           | -           |
| DR-5S              | 1.0                 | 2/4/91        | 1235          | 30 : 33.8        | 87 : 58.5         | 12814.6          | 47166.0          | 3.9                 | 1.3               | 13.2        | -           | -           |
| DR-7S              | 1.0                 | 2/4/91        | 1246          | 30 : 33.8        | 87 : 56.0         | 12840.5          | 47167.1          | 3.3                 | 9.7               | 13.8        | -           | -           |
| DR-7B              | 2.3                 | 2/4/91        | 1246          | 30 : 33.8        | 87 : 56.0         | 12840.5          | 47167.1          | 3.3                 | 9.8               | 13.7        | -           | -           |
| PC-1S              | 1.0                 | 2/4/91        | 1144          | 30 : 29.0        | 88 : 4.0          | 12753.2          | 47145.4          | 3.0                 | 2.7               | 13.6        | -           | -           |
| PC-3S              | 1.0                 | 2/4/91        | 1125          | 30 : 28.9        | 88 : 1.1          | 12783.7          | 47146.0          | 14.3                | 1.2               | 13.1        | -           | -           |
| PC-3B              | 13.3                | 2/4/91        | 1125          | 30 : 28.9        | 88 : 1.1          | 12783.7          | 47146.0          | 14.3                | 30.7              | 14.8        | -           | -           |
| PC-5S              | 1.0                 | 2/4/91        | 1107          | 30 : 28.1        | 87 : 58.0         | 12815.8          | 47144.1          | 3.0                 | 7.2               | 13.5        | -           | -           |
| PC-5B              | 2.0                 | 2/4/91        | 1107          | 30 : 28.1        | 87 : 58.0         | 12815.8          | 47144.1          | 3.0                 | 13.8              | 12.8        | -           | -           |
| FR-3S              | 1.0                 | 2/4/91        | 1048          | 30 : 26.4        | 88 : 0.8          | 12785.0          | 47136.6          | 13.7                | 1.7               | 13.2        | -           | -           |
| FR-3B              | 12.7                | 2/4/91        | 1048          | 30 : 26.4        | 88 : 0.8          | 12785.0          | 47136.6          | 13.7                | 31.0              | 14.9        | -           | -           |
| WB-1S              | 1.0                 | 2/4/91        | 930           | 30 : 22.6        | 88 : 4.4          | 12745.2          | 47120.1          | 3.6                 | 3.9               | 12.9        | -           | -           |
| WB-3S              | 1.0                 | 2/4/91        | 946           | 30 : 22.8        | 88 : 1.2          | 12778.2          | 47122.0          | 14.6                | 2.9               | 12.6        | -           | -           |
| WB-3B              | 13.6                | 2/4/91        | 946           | 30 : 22.8        | 88 : 1.2          | 12778.2          | 47122.0          | 14.6                | 31.0              | 14.9        | -           | -           |
| WB-5S              | 1.0                 | 2/4/91        | 1002          | 30 : 22.9        | 87 : 58.2         | 12810.4          | 47123.0          | 3.6                 | 4.9               | 12.5        | -           | -           |
| WB-5B              | 2.6                 | 2/4/91        | 1002          | 30 : 22.9        | 87 : 58.2         | 12810.4          | 47123.0          | 3.6                 | 15.1              | 12.4        | -           | -           |
| WB-7S              | 1.0                 | 2/4/91        | 1019          | 30 : 22.4        | 87 : 55.3         | 12840.4          | 47122.1          | 3.6                 | 15.7              | 13.7        | -           | -           |
| CP-3S              | 1.0                 | 2/4/91        | 902           | 30 : 18.3        | 88 : 1.9          | 12768.4          | 47103.1          | 15.5                | 7.7               | 12.6        | -           | -           |
| CP-3B              | 14.5                | 2/4/91        | 902           | 30 : 18.3        | 88 : 1.9          | 12768.4          | 47103.1          | 15.5                | 31.1              | 14.9        | -           | -           |
| FM-1S              | 1.0                 | 2/4/91        | 800           | 30 : 15.7        | 88 : 3.7          | 12748.1          | 47092.1          | 3.7                 | 10.7              | 12.6        | -           | -           |
| FM-3S              | 1.0                 | 2/4/91        | 810           | 30 : 15.7        | 88 : 2.3          | 12763.1          | 47092.3          | 14.6                | 10.5              | 12.6        | -           | -           |
| FM-3B              | 13.6                | 2/4/91        | 810           | 30 : 15.7        | 88 : 2.3          | 12763.1          | 47092.3          | 14.6                | 31.3              | 14.9        | -           | -           |
| FM-5S              | 1.0                 | 2/4/91        | 823           | 30 : 15.5        | 88 : 0.8          | 12778.5          | 47091.9          | 4.8                 | 10.1              | 12.7        | -           | -           |

MOBILE BAY CRUISE MB-13

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : | LAT<br>MIN | LON<br>DEG : | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|--------------|------------|--------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-5B              | 3.8                 | 2/4/91        | 823           | 30 :         | 15.5       | 88 :         | 0.8        | 12778.5          | 47091.9          | 4.8                 | 16.0              | 13.2        | -           | -           |
| FM-7S              | 1.0                 | 2/4/91        | 841           | 30 :         | 15.6       | 87 :         | 58.9       | 12798.3          | 47092.6          | 4.2                 | 12.8              | 12.9        | -           | -           |

## MOBILE BAY CRUISE MB-13

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -  | 731          | 0.98        | 31.59       | 0.21        | 8.29        | -          | 472         | 0.37        | 0.00        | 124.53     | 10.22      | 11.26      |
| MR-1B              | 12.7                | -  | -            | 0.51        | 4.09        | 0.24        | 16.52       | -          | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -  | -            | 0.64        | 17.31       | 0.21        | 5.20        | -          | 465         | 11.72       | 0.00        | 100.71     | 8.99       | 10.06      |
| DR-1S              | 1.0                 | -  | -            | 0.55        | 19.68       | 0.63        | 5.10        | -          | 400         | 9.50        | 0.23        | 68.21      | 6.47       | 7.67       |
| DR-3S              | 1.0                 | -  | 699          | 0.59        | 19.65       | 0.69        | 5.36        | -          | 430         | 11.40       | 0.24        | 65.19      | 5.89       | 10.78      |
| DR-3B              | 12.4                | -  | -            | 0.39        | 1.09        | 0.19        | -           | -          | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -  | -            | 0.60        | 18.51       | 0.64        | 5.38        | -          | -           | 11.59       | 0.19        | 70.89      | 6.16       | 8.48       |
| DR-7S              | 1.0                 | -  | 1128         | 0.29        | 13.32       | 0.42        | 6.23        | -          | 303         | 2.11        | 0.26        | 99.01      | 11.77      | 6.52       |
| DR-7B              | 2.3                 | -  | -            | 0.30        | 12.90       | 0.43        | 6.56        | -          | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | -  | -            | 0.53        | 17.88       | 0.54        | 4.95        | -          | 424         | 8.97        | 0.00        | 69.70      | 6.63       | 8.24       |
| PC-3S              | 1.0                 | -  | 694          | 0.49        | 19.67       | 0.56        | 5.32        | -          | 424         | 10.13       | 0.06        | 70.41      | 6.13       | 7.96       |
| PC-3B              | 13.3                | -  | -            | 0.37        | -           | 0.22        | -           | -          | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | -  | 967          | 0.29        | 13.09       | 0.37        | 5.87        | -          | 343         | 5.12        | 0.08        | 106.45     | 12.91      | 10.50      |
| PC-5B              | 2.0                 | -  | -            | 0.39        | 11.64       | 0.37        | 8.86        | -          | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -  | 717          | 0.86        | 20.31       | 0.56        | 4.51        | -          | -           | 9.74        | 0.19        | 79.97      | 8.12       | 8.67       |
| FR-3B              | 12.7                | -  | -            | 0.23        | -           | 0.13        | -           | -          | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | -  | 765          | 0.50        | 16.28       | 0.51        | 5.82        | -          | 385         | 10.43       | 0.00        | 52.18      | 5.07       | 6.13       |
| WB-3S              | 1.0                 | -  | 767          | 0.49        | 17.59       | 0.49        | 4.48        | -          | 389         | 10.47       | 0.39        | 70.40      | 7.22       | 6.90       |
| WB-3B              | 13.6                | -  | -            | 0.11        | -           | 0.17        | -           | -          | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | -  | -            | 0.44        | 16.17       | 0.41        | 5.82        | -          | 398         | 8.10        | 0.19        | 125.72     | 14.04      | 12.56      |
| WB-5B              | 2.6                 | -  | -            | 0.38        | 11.08       | 0.40        | -           | -          | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | -  | 1299         | 0.09        | -           | 0.08        | 7.20        | -          | 283         | 1.22        | 0.24        | 217.17     | 27.81      | 17.59      |
| CP-3S              | 1.0                 | -  | 983          | 0.07        | -           | 0.09        | -           | -          | 338         | 26.77       | 0.25        | 45.88      | 4.80       | 7.76       |
| CP-3B              | 14.5                | -  | -            | 0.29        | -           | 0.45        | 6.31        | -          | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.28        | 14.34       | 0.44        | 6.10        | -          | 304         | 2.23        | 0.00        | 40.95      | 4.64       | 3.83       |
| FM-3S              | 1.0                 | -  | 1121         | 0.24        | 12.65       | 0.42        | 6.62        | -          | 303         | 0.18        | 0.00        | 49.87      | 5.84       | 4.55       |
| FM-3B              | 13.6                | -  | -            | 0.18        | -           | 0.40        | 5.28        | -          | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -  | 1183         | 0.20        | -           | 0.07        | -           | -          | 309         | 20.45       | 0.73        | 51.29      | 5.70       | 10.06      |

MOBILE BAY CRUISE MB-13

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-5B              | 3.8                 | -  | -            | 0.09        | 1.40        | 0.21        | 7.23        | -          | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | -            | 0.12        | 7.08        | 0.32        | 6.17        | -          | 284         | 0.67        | 0.11        | 71.19      | 8.79       | 17.59      |

## MOBILE BAY CRUISE MB-13

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | SESTON CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m <sup>2</sup> /d |
|--------------------|---------------------|------------------------|------------------------|----------------|----------------|------------------|--------------------------------|
| MR-1S              | 1.0                 | 36.39                  | 2.62                   | 4.54           | 25             | 0.058            | 23.0                           |
| MR-1B              | 12.7                | -                      | 3.61                   | -              | -              | -                | -                              |
| MR-2S              | 1.0                 | 38.61                  | 3.32                   | 3.86           | 25             | -                | -                              |
| DR-1S              | 1.0                 | 32.75                  | 3.86                   | 2.35           | 33             | -                | -                              |
| DR-3S              | 1.0                 | 22.75                  | 1.79                   | 3.12           | 37             | 0.071            | 35.0                           |
| DR-3B              | 12.4                | -                      | 10.46                  | -              | -              | -                | -                              |
| DR-5S              | 1.0                 | 29.75                  | 2.08                   | -              | 25             | -                | -                              |
| DR-7S              | 1.0                 | 25.00                  | 14.69                  | 1.31           | 100            | 0.746            | 821.0                          |
| DR-7B              | 2.3                 | -                      | 12.91                  | -              | -              | -                | -                              |
| PC-1S              | 1.0                 | 17.25                  | 5.16                   | 2.00           | 50             | -                | -                              |
| PC-3S              | 1.0                 | 21.25                  | 3.45                   | 2.67           | 37             | 0.109            | 60.0                           |
| PC-3B              | 13.3                | -                      | 8.39                   | -              | -              | -                | -                              |
| PC-5S              | 1.0                 | 26.75                  | 14.20                  | 1.43           | 50             | 0.566            | 544.0                          |
| PC-5B              | 2.0                 | -                      | 5.42                   | -              | -              | -                | -                              |
| FR-3S              | 1.0                 | 19.80                  | 6.20                   | 2.54           | 37             | 0.127            | 99.0                           |
| FR-3B              | 12.7                | -                      | 9.17                   | -              | -              | -                | -                              |
| WB-1S              | 1.0                 | 27.40                  | 3.85                   | 1.98           | 66             | 0.158            | 108.0                          |
| WB-3S              | 1.0                 | 18.20                  | 5.94                   | 2.00           | 50             | 0.204            | 142.0                          |
| WB-3B              | 13.6                | -                      | 11.62                  | -              | -              | -                | -                              |
| WB-5S              | 1.0                 | 19.40                  | 15.49                  | 1.64           | 50             | -                | -                              |
| WB-5B              | 2.6                 | -                      | 3.85                   | -              | -              | -                | -                              |
| WB-7S              | 1.0                 | 31.80                  | 33.95                  | 1.23           | 100            | 1.481            | 2229.0                         |
| CP-3S              | 1.0                 | 22.60                  | 7.75                   | 1.00           | 75             | 0.301            | 396.0                          |
| CP-3B              | 14.5                | -                      | 14.46                  | -              | -              | -                | -                              |
| FM-1S              | 1.0                 | 21.80                  | 5.03                   | 0.97           | 119            | -                | -                              |
| FM-3S              | 1.0                 | 24.20                  | 6.46                   | 1.05           | 113            | 0.246            | 330.0                          |
| FM-3B              | 13.6                | -                      | 9.04                   | -              | -              | -                | -                              |
| FM-5S              | 1.0                 | 30.50                  | 8.78                   | 1.00           | 100            | -                | -                              |

MOBILE BAY CRUISE MB-13

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| FM-5B              | 3.8                 | -                      | 23.67           | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 26.71                  | 11.36           | 0.96           | 112            | 0.113            | 169.0             |

## ***Mobile Bay Cruise Report***

***MB-14***

20 March 1991

***Vessel:*** *R/V Deborah B.*

***Operation Area:*** Mobile Bay: from Fort Morgan to Mobile River

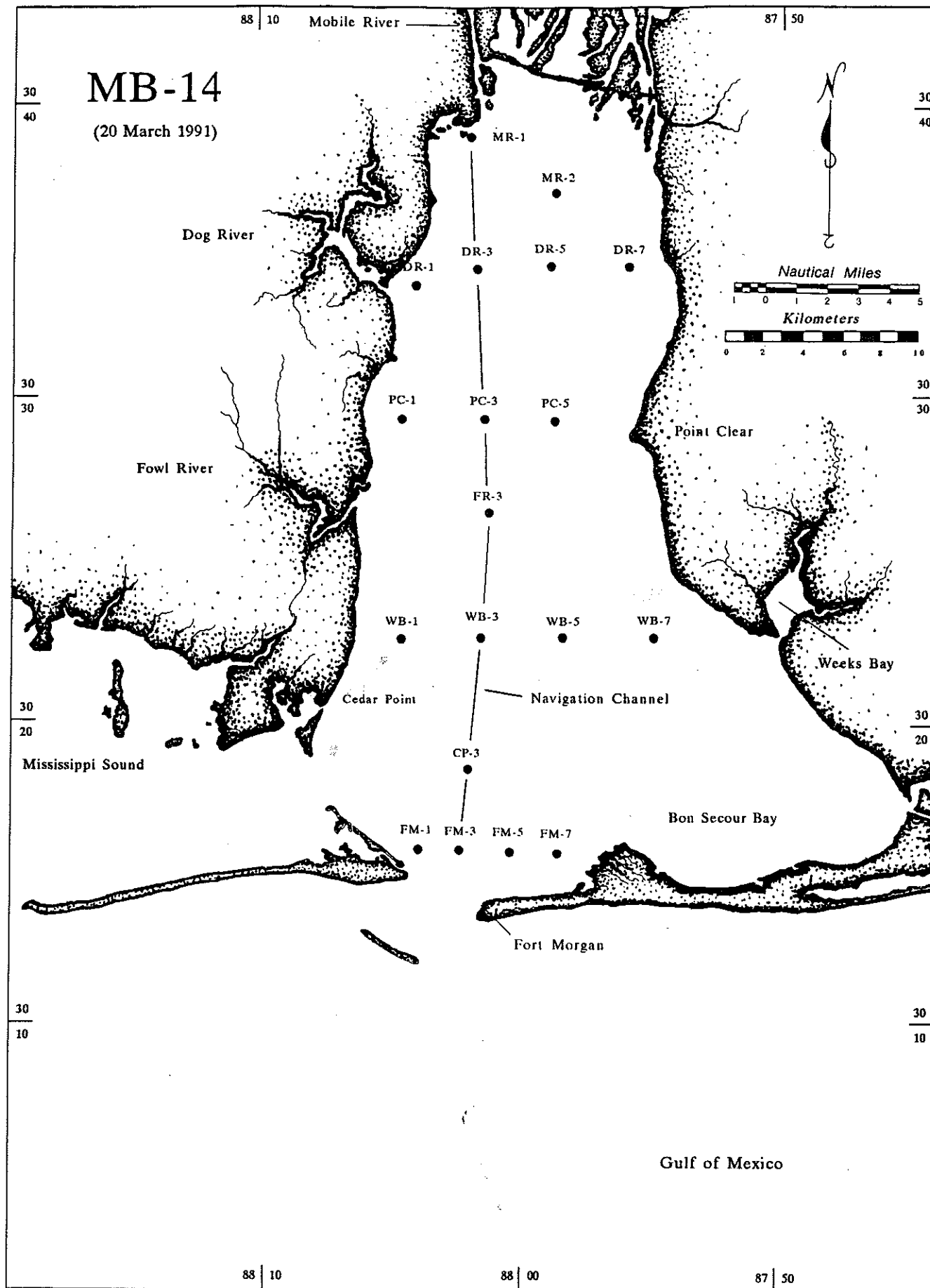
***Scientific Party:*** Beth Gaza (Chief Scientist)  
Felix Fernandez

***Supporting Agency:*** U.S. Geological Survey

***Research Objectives:*** Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 19 surface stations (12 of those including bottom water casts). Samples were taken for  $\text{TCO}_2$ , DOC, DON, DOP, POP, PC/PN, taxonomy identification and  $^{14}\text{C}$  productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, sigma-t) were obtained with a Seabird SBE-25 at all stations.

***Cruise Summary:*** Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0710. Stations were continued going upbay through station MR-1. Returned to DISL 1330.





## MOBILE BAY CRUISE MB-14

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 3/20/91       | 1200          | 30         | 38.1       | 88          | 1.9         | 12780.5          | 47180.1          | 13.7                | 1.0               | 16.6        | -           | -           |
| MR-1B              | 12.7                | 3/20/91       | 1200          | 30         | 38.1       | 88          | 1.9         | 12780.5          | 47180.1          | 13.7                | 28.9              | 16.7        | -           | -           |
| MR-2S              | 1.0                 | 3/20/91       | 1135          | 30         | 36.6       | 87          | 58.5        | 12816.3          | 47176.5          | 3.7                 | 0.4               | 16.6        | -           | -           |
| DR-1S              | 1.0                 | 3/20/91       | 1042          | 30         | 32.6       | 88          | 4.0         | 12755.5          | 47159.1          | 3.1                 | 2.2               | 16.6        | -           | -           |
| DR-3S              | 1.0                 | 3/20/91       | 1058          | 30         | 34.1       | 88          | 1.7         | 12780.8          | 47165.6          | 13.4                | 1.4               | 16.4        | -           | -           |
| DR-3B              | 12.4                | 3/20/91       | 1058          | 30         | 34.1       | 88          | 1.7         | 12780.8          | 47165.6          | 13.4                | 29.1              | 16.7        | -           | -           |
| DR-5S              | 1.0                 | 3/20/91       | 1110          | 30         | 33.6       | 87          | 58.5        | 12814.5          | 47165.2          | 4.3                 | 0.7               | 16.4        | -           | -           |
| DR-7S              | 1.0                 | 3/20/91       | 1124          | 30         | 33.9       | 87          | 56.0        | 12840.5          | 47167.2          | 3.0                 | 1.6               | 16.8        | -           | -           |
| DR-7B              | 2.0                 | 3/20/91       | 1124          | 30         | 33.9       | 87          | 56.0        | 12840.5          | 47167.2          | 3.0                 | 2.4               | 16.8        | -           | -           |
| PC-1S              | 1.0                 | 3/20/91       | 1030          | 30         | 29.2       | 88          | 4.0         | 12753.2          | 47146.3          | 3.4                 | 2.3               | 15.8        | -           | -           |
| PC-3S              | 1.0                 | 3/20/91       | 1011          | 30         | 29.1       | 88          | 1.1         | 12783.3          | 47146.8          | 15.2                | 3.2               | 16.5        | -           | -           |
| PC-3B              | 14.2                | 3/20/91       | 1011          | 30         | 29.1       | 88          | 1.1         | 12783.3          | 47146.8          | 15.2                | 28.9              | 16.6        | -           | -           |
| PC-5S              | 1.0                 | 3/20/91       | 1000          | 30         | 28.3       | 87          | 58.0        | 12815.2          | 47144.7          | 4.0                 | 2.3               | 15.8        | -           | -           |
| PC-5B              | 3.0                 | 3/20/91       | 1000          | 30         | 28.3       | 87          | 58.0        | 12815.2          | 47144.7          | 4.0                 | 11.5              | 15.6        | -           | -           |
| FR-3S              | 1.0                 | 3/20/91       | 940           | 30         | 26.6       | 88          | 0.8         | 12784.9          | 47131.3          | 14.6                | 2.3               | 16.4        | -           | -           |
| FR-3B              | 13.6                | 3/20/91       | 940           | 30         | 26.6       | 88          | 0.8         | 12784.9          | 47131.3          | 14.6                | 28.7              | 16.7        | -           | -           |
| WB-1S              | 1.0                 | 3/20/91       | 920           | 30         | 22.7       | 88          | 4.4         | 12745.3          | 47120.5          | 3.7                 | 2.2               | 16.0        | -           | -           |
| WB-1B              | 2.7                 | 3/20/91       | 920           | 30         | 22.7       | 88          | 4.4         | 12745.3          | 47120.5          | 3.7                 | 2.2               | 15.7        | -           | -           |
| WB-3S              | 1.0                 | 3/20/91       | 903           | 30         | 22.6       | 88          | 1.5         | 12774.9          | 47121.1          | 14.3                | 2.3               | 16.3        | -           | -           |
| WB-3B              | 13.3                | 3/20/91       | 903           | 30         | 22.6       | 88          | 1.5         | 12774.9          | 47121.1          | 14.3                | 28.8              | 16.6        | -           | -           |
| WB-5S              | 1.0                 | 3/20/91       | 850           | 30         | 22.7       | 87          | 58.1        | 12810.7          | 47122.2          | 4.3                 | 2.6               | 15.7        | -           | -           |
| WB-7S              | 1.0                 | 3/20/91       | 845           | 30         | 22.7       | 87          | 55.4        | 12839.5          | 47122.9          | 3.0                 | 4.3               | 15.8        | -           | -           |
| WB-7B              | 2.0                 | 3/20/91       | 845           | 30         | 22.7       | 87          | 55.4        | 12839.5          | 47122.9          | 3.0                 | 11.3              | 15.5        | -           | -           |
| CP-3S              | 1.0                 | 3/20/91       | 800           | 30         | 18.0       | 88          | 1.9         | 12767.9          | 47102.1          | 14.9                | 3.2               | 15.9        | -           | -           |
| CP-3B              | 13.9                | 3/20/91       | 800           | 30         | 18.0       | 88          | 1.9         | 12767.9          | 47102.1          | 14.9                | 28.0              | 16.6        | -           | -           |
| FM-1S              | 1.0                 | 3/20/91       | 710           | 30         | 15.8       | 88          | 3.7         | 12748.3          | 47092.5          | 2.4                 | 6.1               | 16.3        | -           | -           |
| FM-3S              | 1.0                 | 3/20/91       | 720           | 30         | 15.5       | 88          | 2.3         | 12762.8          | 47091.5          | 12.2                | 5.0               | 16.0        | -           | -           |
| FM-3B              | 11.2                | 3/20/91       | 720           | 30         | 15.5       | 88          | 2.3         | 12762.8          | 47091.5          | 12.2                | 28.6              | 17.0        | -           | -           |

MOBILE BAY CRUISE MB-14

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : | LAT<br>MIN | LON<br>DEG : | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|--------------|------------|--------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-5S              | 1.0                 | 3/20/91       | 734           | 30 :         | 15.7       | 88 :         | 0.8        | 12778.8          | 47092.4          | 4.3                 | 7.9               | 16.1        | -           | -           |
| FM-7S              | 1.0                 | 3/20/91       | 745           | 30 :         | 15.6       | 87 :         | 58.8       | 12798.6          | 47092.5          | 4.0                 | 4.4               | 16.0        | -           | -           |
| FM-7B              | 3.0                 | 3/20/91       | 745           | 30 :         | 15.6       | 87 :         | 58.8       | 12798.6          | 47092.5          | 4.0                 | 24.7              | 16.4        | -           | -           |

## MOBILE BAY CRUISE MB-14

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -  | 608          | 0.68        | 13.29       | 0.47        | 3.14        | 109.50     | 421         | 13.19       | 1.23        | -          | -          | 3.98       |
| MR-1B              | 12.7                | -  | -            | 0.73        | 3.81        | 1.30        | 6.43        | 21.59      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -  | -            | 0.92        | 13.25       | 0.44        | 9.59        | 106.90     | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | -  | -            | 0.80        | 13.98       | 0.48        | 5.47        | 103.80     | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -  | 657          | 0.53        | 13.21       | 0.44        | 2.40        | 105.00     | 404         | 12.26       | 12.25       | -          | -          | 2.88       |
| DR-3B              | 12.4                | -  | -            | 0.60        | 2.73        | 1.12        | 5.77        | 18.08      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -  | -            | 0.43        | 12.20       | 0.38        | 1.74        | 100.90     | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -  | 623          | 0.50        | 12.63       | 0.42        | 2.62        | 103.10     | -           | 11.78       | 0.93        | -          | -          | 3.26       |
| DR-7B              | 2.0                 | -  | -            | 0.47        | 12.15       | 0.40        | 2.93        | 96.44      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | -  | -            | 0.51        | 13.58       | 0.44        | 2.78        | 95.27      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | -  | 571          | 0.53        | 13.64       | 0.67        | 3.60        | 99.40      | 398         | 11.59       | 0.84        | -          | -          | 3.02       |
| PC-3B              | 14.2                | -  | -            | 0.63        | 3.09        | 1.03        | 5.84        | 17.88      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | -  | 611          | 0.43        | 11.65       | 0.37        | 1.05        | 97.49      | 395         | 11.22       | 0.93        | -          | -          | 3.12       |
| PC-5B              | 3.0                 | -  | -            | 0.63        | 11.39       | 0.74        | 5.67        | 75.25      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -  | 609          | 0.51        | 12.92       | 0.48        | 2.77        | 101.10     | 369         | 13.46       | 0.84        | -          | -          | 3.93       |
| FR-3B              | 13.6                | -  | -            | 0.47        | 2.82        | 0.85        | 3.03        | 17.85      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | -  | -            | 0.41        | 13.58       | 0.44        | 0.96        | 88.52      | 403         | 12.32       | 0.79        | -          | -          | 2.83       |
| WB-1B              | 2.7                 | -  | -            | 0.41        | 12.60       | 0.44        | 1.31        | 87.51      | -           | -           | -           | -          | -          | -          |
| WB-3S              | 1.0                 | -  | 578          | 0.43        | 12.77       | 0.44        | 2.71        | 99.29      | 308         | 10.13       | 0.84        | -          | -          | 3.4        |
| WB-3B              | 13.3                | -  | -            | 0.36        | 2.42        | 0.77        | 3.30        | 15.52      | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | -  | -            | 0.56        | 12.47       | 0.15        | 2.69        | 34.20      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | -  | 714          | 0.32        | 11.76       | 0.41        | 1.42        | 89.78      | 400         | 11.11       | 0.84        | -          | -          | 2.35       |
| WB-7B              | 2.0                 | -  | -            | 0.46        | 9.61        | 0.04        | 5.52        | 63.07      | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | -  | 689          | 0.37        | 11.60       | 0.41        | 1.18        | 92.13      | -           | 13.19       | 0.69        | -          | -          | 3.83       |
| CP-3B              | 13.9                | -  | -            | 0.37        | 2.34        | 0.74        | 3.21        | 16.65      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.32        | 10.73       | 0.12        | 1.35        | 59.59      | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | -  | 777          | 0.28        | 11.30       | 0.41        | 0.81        | 85.70      | 313         | 9.35        | 0.44        | -          | -          | 3.26       |
| FM-3B              | 11.2                | -  | -            | 0.33        | 2.95        | 0.78        | 1.86        | 16.52      | -           | -           | -           | -          | -          | -          |

MOBILE BAY CRUISE MB-14

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-5S              | 1.0                 | -  | -            | 0.29        | 10.22       | 0.41        | 1.16        | 75.96      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | 778          | 0.21        | 9.66        | 0.26        | 0.62        | 82.50      | 396         | 15.73       | 0.49        | -          | -          | 3.31       |
| FM-7B              | 3.0                 | -  | -            | 0.34        | 3.70        | 0.07        | 3.51        | 24.63      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-14

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTE<br>N (m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m <sup>2</sup> /d |
|--------------------|---------------------|------------------------|---------------|----------------|------------------|--------------------------------|
| MR-1S              | 1.0                 | 10.67                  | 3.61          | 2.14           | -                | 0.225                          |
| MR-1B              | 12.7                | -                      | 4.71          | -              | -                | -                              |
| MR-2S              | 1.0                 | 26.00                  | 4.27          | 2.30           | 50               | -                              |
| DR-1S              | 1.0                 | 7.50                   | 2.19          | 1.62           | 75               | -                              |
| DR-3S              | 1.0                 | 6.00                   | 3.23          | 2.07           | 75               | 0.295                          |
| DR-3B              | 12.4                | -                      | 4.65          | -              | -                | -                              |
| DR-5S              | 1.0                 | -                      | 4.26          | 2.01           | 75               | -                              |
| DR-7S              | 1.0                 | -                      | 4.35          | 1.87           | 50               | 0.358                          |
| DR-7B              | 2.0                 | -                      | 3.63          | -              | -                | -                              |
| PC-1S              | 1.0                 | 15.00                  | 6.45          | 2.13           | 75               | -                              |
| PC-3S              | 1.0                 | 12.50                  | 4.32          | 1.93           | 75               | 0.230                          |
| PC-3B              | 14.2                | -                      | 4.36          | -              | -                | -                              |
| PC-5S              | 1.0                 | 31.33                  | 4.66          | 1.48           | 75               | 0.341                          |
| PC-5B              | 3.0                 | -                      | 1.23          | -              | -                | -                              |
| FR-3S              | 1.0                 | 20.00                  | 3.10          | 2.12           | 50               | 0.387                          |
| FR-3B              | 13.6                | -                      | 9.81          | -              | -                | -                              |
| WB-1S              | 1.0                 | 32.00                  | 7.23          | 1.93           | 75               | 0.405                          |
| WB-1B              | 2.7                 | -                      | 5.81          | -              | -                | -                              |
| WB-3S              | 1.0                 | 17.33                  | 6.58          | 2.10           | 50               | 0.363                          |
| WB-3B              | 13.3                | -                      | 7.01          | -              | -                | -                              |
| WB-5S              | 1.0                 | 48.67                  | 2.92          | 2.17           | 65               | -                              |
| WB-7S              | 1.0                 | 10.67                  | 3.23          | 1.38           | 80               | 0.209                          |
| WB-7B              | 2.0                 | -                      | 2.26          | -              | -                | -                              |
| CP-3S              | 1.0                 | 19.33                  | -             | 3.91           | 60               | 0.340                          |
| CP-3B              | 13.9                | -                      | 9.30          | -              | -                | -                              |
| FM-1S              | 1.0                 | 20.67                  | 5.81          | 1.72           | 100              | -                              |
| FM-3S              | 1.0                 | 11.33                  | 5.49          | 1.58           | 75               | 0.246                          |
| FM-3B              | 11.2                | -                      | 10.14         | -              | -                | -                              |

MOBILE BAY CRUISE MB-14

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| FM-5S              | 1.0                 | 32.67                  | 5.81            | 2.06           | 60             | -                | -                 |
| FM-7S              | 1.0                 | 12.67                  | 5.00            | 1.66           | 75             | 0.210            | 276.0             |
| FM-7B              | 3.0                 | -                      | 7.75            | -              | -              | -                | -                 |

## ***Mobile Bay Cruise Report***

***MB-15***

2 May 1991

***Vessel:***

*R/V Deborah B.*

***Operation Area:***

Mobile Bay: from Fort Morgan to Mobile River

***Scientific Party:***

Jon Pennock (Chief Scientist)  
Felix Fernandez  
Steve Luker  
Larry Thompson

***Supporting Agency:***

U.S. Geological Survey

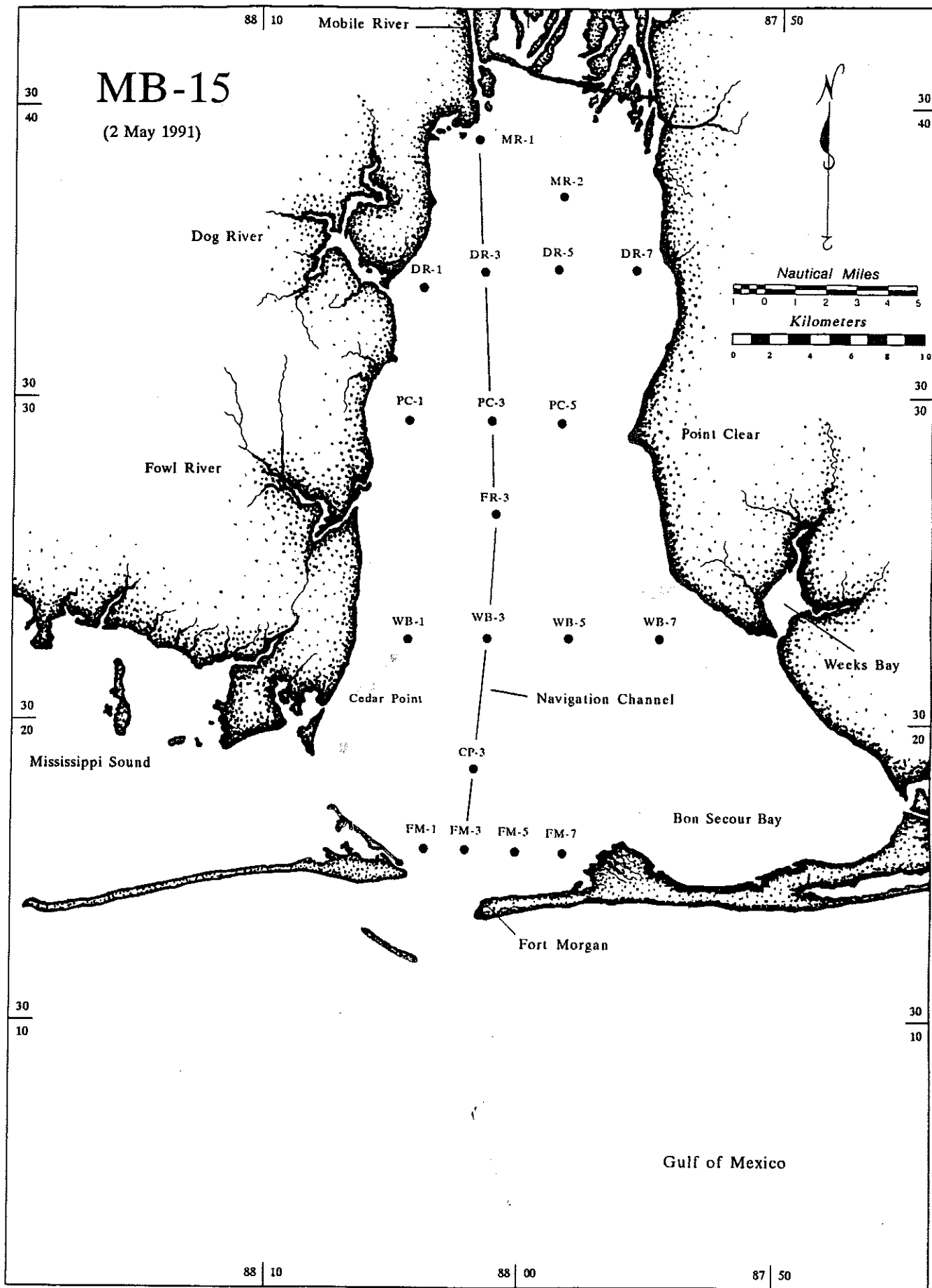
***Research Objectives:***

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 19 surface stations (11 of those including bottom water casts). Samples were taken for  $\text{TCO}_2$ , DOC, DON, DOP, POP, PC/PN, taxonomy identification and  $^{14}\text{C}$  productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, sigma-t) were obtained with a Seabird SBE-25 at all stations.

***Cruise Summary:***

Departed DISL 0715. Deadheaded to station FM-1. Began sampling 0730. Stations were continued going upbay through station MR-1. Returned to DISL 1430.





## MOBILE BAY CRUISE MB-15

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 5/2/91        | 1257          | 30         | 38.1       | 88          | 2.0         | 12780.1          | 47180.3          | 14.3                | 0.4               | 23.1        | -           | -           |
| MR-1B              | 13.3                | 5/2/91        | 1257          | 30         | 38.1       | 88          | 2.0         | 12780.1          | 47180.3          | 14.3                | 25.1              | 22.7        | -           | -           |
| MR-2S              | 1.0                 | 5/2/91        | 1238          | 30         | 36.6       | 87          | 58.5        | 12816.3          | 47176.5          | 3.7                 | 0.0               | 21.8        | -           | -           |
| DR-1S              | 1.0                 | 5/2/91        | 1134          | 30         | 32.6       | 88          | 3.9         | 12755.5          | 47159.1          | 3.1                 | 0.5               | 23.2        | -           | -           |
| DR-3S              | 1.0                 | 5/2/91        | 1150          | 30         | 34.0       | 88          | 1.7         | 12780.9          | 47165.4          | 13.4                | 0.5               | 23.5        | -           | -           |
| DR-3B              | 12.4                | 5/2/91        | 1150          | 30         | 34.0       | 88          | 1.7         | 12780.9          | 47165.4          | 13.4                | 26.4              | 22.6        | -           | -           |
| DR-5S              | 1.0                 | 5/2/91        | 1206          | 30         | 33.7       | 87          | 58.5        | 12814.3          | 47165.7          | 3.7                 | 0.1               | 23.5        | -           | -           |
| DR-5B              | 2.7                 | 5/2/91        | 1206          | 30         | 33.7       | 87          | 58.5        | 12814.3          | 47165.7          | 3.7                 | 0.1               | 22.0        | -           | -           |
| DR-7S              | 1.0                 | 5/2/91        | 1220          | 30         | 34.0       | 87          | 56.0        | 12840.3          | 47167.6          | 3.4                 | 0.0               | 22.8        | -           | -           |
| PC-1S              | 1.0                 | 5/2/91        | 1115          | 30         | 29.1       | 88          | 4.0         | 12753.2          | 47145.8          | 3.4                 | 1.4               | 23.3        | -           | -           |
| PC-3S              | 1.0                 | 5/2/91        | 1059          | 30         | 29.0       | 88          | 1.1         | 12783.6          | 47146.6          | 14.9                | 1.2               | 23.1        | -           | -           |
| PC-3B              | 13.9                | 5/2/91        | 1059          | 30         | 29.0       | 88          | 1.1         | 12783.6          | 47146.6          | 14.9                | 27.4              | 22.6        | -           | -           |
| PC-5S              | 1.0                 | 5/2/91        | 1043          | 30         | 28.4       | 87          | 58.0        | 12815.3          | 47145.3          | 4.3                 | 0.1               | 22.4        | -           | -           |
| PC-5B              | 3.3                 | 5/2/91        | 1043          | 30         | 28.4       | 87          | 58.0        | 12815.3          | 47145.3          | 4.3                 | 0.1               | 21.7        | -           | -           |
| FR-3S              | 1.0                 | 5/2/91        | 1023          | 30         | 27.4       | 88          | 0.9         | 12784.8          | 47140.3          | 14.3                | 0.1               | 22.4        | -           | -           |
| FR-3B              | 13.3                | 5/2/91        | 1023          | 30         | 27.4       | 88          | 0.9         | 12784.8          | 47140.3          | 14.3                | 27.4              | 22.6        | -           | -           |
| WB-1S              | 1.0                 | 5/2/91        | 855           | 30         | 22.6       | 88          | 4.4         | 12745.0          | 47120.3          | 3.7                 | 2.6               | 23.2        | -           | -           |
| WB-3S              | 1.0                 | 5/2/91        | 915           | 30         | 22.6       | 88          | 1.3         | 12777.4          | 47121.0          | 14.3                | 1.8               | 23.0        | -           | -           |
| WB-3B              | 13.3                | 5/2/91        | 915           | 30         | 22.6       | 88          | 1.3         | 12777.4          | 47121.0          | 14.3                | 27.7              | 22.6        | -           | -           |
| WB-5S              | 1.0                 | 5/2/91        | 933           | 30         | 22.7       | 87          | 58.1        | 12810.4          | 47122.4          | 4.0                 | 1.1               | 22.1        | -           | -           |
| WB-5B              | 4.0                 | 5/2/91        | 933           | 30         | 22.7       | 87          | 58.1        | 12810.4          | 47122.4          | 4.0                 | 3.5               | 22.2        | -           | -           |
| WB-7S              | 1.0                 | 5/2/91        | 948           | 30         | 22.6       | 87          | 55.3        | 12840.1          | 47122.7          | 3.7                 | 0.7               | 23.0        | -           | -           |
| CP-3S              | 1.0                 | 5/2/91        | 828           | 30         | 18.3       | 88          | 1.9         | 12768.4          | 47103.1          | 3.7                 | 2.3               | 22.9        | -           | -           |
| CP-3B              | 3.7                 | 5/2/91        | 828           | 30         | 18.3       | 88          | 1.9         | 12768.4          | 47103.1          | 3.7                 | 28.6              | 22.6        | -           | -           |
| FM-1S              | 1.0                 | 5/2/91        | 730           | 30         | 15.8       | 88          | 3.7         | 12748.3          | 47092.3          | 4.6                 | 3.2               | 23.1        | -           | -           |
| FM-3S              | 1.0                 | 5/2/91        | 741           | 30         | 15.5       | 88          | 2.3         | 12762.8          | 47091.5          | 14.6                | 3.6               | 23.0        | -           | -           |
| FM-3B              | 13.6                | 5/2/91        | 741           | 30         | 15.5       | 88          | 2.3         | 12762.8          | 47091.5          | 14.6                | 29.5              | 22.5        | -           | -           |
| FM-5S              | 1.0                 | 5/2/91        | 754           | 30         | 15.6       | 88          | 0.7         | 12778.8          | 47092.3          | 4.6                 | 2.5               | 23.4        | -           | -           |

MOBILE BAY CRUISE MB-15

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : | LAT<br>MIN | LON<br>DEG : | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|--------------|------------|--------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-5B              | 3.6                 | 5/2/91        | 754           | 30 :         | 15.6       | 88 :         | 0.7        | 12778.8          | 47092.3          | 4.6                 | 21.7              | 22.8        | -           | -           |
| FM-7S              | 1.0                 | 5/2/91        | 810           | 30 :         | 15.5       | 87 :         | 59.0       | 12797.9          | 47092.0          | 3.7                 | 2.3               | 23.3        | -           | -           |

## MOBILE BAY CRUISE MB-15

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -  | 793          | 0.53        | 9.71        | 0.67        | 5.01        | 121.40     | -           | 19.42       | 1.33        | 92.50      | 8.64       | 3.93       |
| MR-1B              | 13.3                | -  | -            | 0.95        | 2.72        | 0.49        | 5.83        | 35.66      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -  | -            | 0.55        | 12.32       | 0.67        | 3.54        | 125.20     | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | -  | -            | 0.84        | 12.96       | 0.77        | 7.37        | 124.10     | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -  | 728          | 0.51        | 9.95        | 0.65        | 5.11        | 121.60     | 547         | 19.75       | 1.48        | 69.56      | 4.21       | 4.98       |
| DR-3B              | 12.4                | -  | -            | 0.66        | 2.39        | 0.44        | 3.31        | 28.00      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -  | -            | 0.50        | 11.47       | 0.57        | 3.48        | 115.90     | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.7                 | -  | -            | 0.55        | 11.67       | 0.57        | 3.75        | 115.40     | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -  | 678          | 0.52        | 10.82       | 0.61        | 4.48        | 116.30     | 520         | 18.11       | 1.13        | 61.55      | 32.31      | 3.02       |
| PC-1S              | 1.0                 | -  | -            | 0.77        | 12.80       | 0.78        | 5.90        | 114.90     | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | -  | 716          | 0.69        | 12.27       | 0.71        | 5.26        | 115.50     | 459         | 15.89       | 1.23        | 111.51     | 26.16      | -          |
| PC-3B              | 13.9                | -  | -            | 0.58        | 2.19        | 0.48        | 8.31        | 28.58      | -           | -           | -           | -          | -          | -          |
| PC-5S              | ~1.0                | -  | 639          | 0.69        | 14.01       | 0.85        | 3.62        | 117.50     | -           | 15.56       | 1.08        | 496.71     | 215.22     | 8.48       |
| PC-5B              | 3.3                 | -  | -            | 0.59        | 12.89       | 0.78        | 2.74        | 112.00     | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -  | 671          | 0.75        | 12.36       | 0.86        | 4.42        | 106.10     | 461         | 17.70       | 1.62        | 224.67     | 384.67     | 9.82       |
| FR-3B              | 13.3                | -  | -            | 0.48        | 2.56        | 0.41        | 2.95        | 27.41      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | -  | 775          | 0.36        | 11.98       | 0.57        | 2.66        | 88.59      | 399         | 14.29       | 0.64        | 261.50     | 148.25     | 4.46       |
| WB-3S              | 1.0                 | -  | 767          | 0.64        | 11.60       | 0.72        | 4.14        | 105.90     | 449         | 16.69       | 0.98        | 127.06     | 162.01     | 6.57       |
| WB-3B              | 13.3                | -  | -            | 0.71        | 1.88        | 0.43        | 3.13        | 30.75      | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | -  | -            | 0.73        | 12.40       | 0.75        | 4.21        | 114.40     | -           | -           | -           | -          | -          | -          |
| WB-5B              | 4.0                 | -  | -            | 0.60        | 15.14       | 0.78        | 4.09        | 100.10     | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | -  | 663          | 0.73        | 13.39       | 0.78        | 3.48        | 106.40     | 423         | 15.02       | 1.43        | 135.38     | 181.49     | 4.46       |
| CP-3S              | 1.0                 | -  | 755          | 0.64        | 12.73       | 0.73        | 4.26        | 100.30     | -           | 14.54       | 1.38        | 114.53     | 118.32     | -          |
| CP-3B              | 3.7                 | -  | -            | 0.36        | 2.51        | 0.52        | 2.31        | 25.60      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.54        | 14.63       | 0.76        | 3.52        | 97.11      | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | -  | 792          | 0.41        | 10.86       | 0.59        | 3.72        | 97.84      | 438         | 16.80       | 1.13        | 83.51      | 140.76     | 0.38       |
| FM-3B              | 13.6                | -  | -            | 0.22        | 1.07        | 0.31        | 1.89        | 15.66      | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -  | -            | 0.40        | 10.61       | 0.62        | 3.77        | 99.87      | -           | -           | -           | -          | -          | -          |

MOBILE BAY CRUISE MB-15

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-5B              | 3.6                 | -  | -            | 0.38        | 5.19        | 0.43        | 2.62        | 38.96      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | 786          | 0.45        | 13.34       | 0.67        | 3.64        | 97.92      | 389         | 16.19       | 1.03        | 93.25      | 97.37      | 6.13       |

## MOBILE BAY CRUISE MB-15

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | SESTON CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m <sup>2</sup> /d |
|--------------------|---------------------|------------------------|------------------------|----------------|----------------|------------------|--------------------------------|
| MR-1S              | 1.0                 | 22.00                  | 5.29                   | -              | 25             | 0.550            | 432.0                          |
| MR-1B              | 13.3                | -                      | 5.59                   | -              | -              | -                | -                              |
| MR-2S              | 1.0                 | 34.00                  | 3.69                   | -              | 50             | -                | -                              |
| DR-1S              | 1.0                 | 9.00                   | 0.97                   | -              | 50             | -                | -                              |
| DR-3S              | 1.0                 | 12.50                  | 2.58                   | -              | 50             | 0.345            | 336.0                          |
| DR-3B              | 12.4                | -                      | 10.16                  | -              | -              | -                | -                              |
| DR-5S              | 1.0                 | 23.50                  | 6.46                   | -              | 50             | -                | -                              |
| DR-5B              | 2.7                 | -                      | 2.60                   | -              | -              | -                | -                              |
| DR-7S              | 1.0                 | 2.50                   | 3.27                   | -              | 50             | 0.332            | 667.0                          |
| PC-1S              | 1.0                 | 47.33                  | 1.59                   | -              | 25             | -                | -                              |
| PC-3S              | 1.0                 | 36.67                  | 2.58                   | -              | 20             | 0.315            | 146.0                          |
| PC-3B              | 13.9                | -                      | 6.29                   | -              | -              | -                | -                              |
| PC-5S              | 1.0                 | 40.00                  | 2.58                   | -              | 20             | 0.419            | 203.0                          |
| PC-5B              | 3.3                 | -                      | 9.98                   | -              | -              | -                | -                              |
| FR-3S              | 1.0                 | 72.00                  | -                      | -              | 15             | 0.369            | 91.0                           |
| FR-3B              | 13.3                | -                      | 5.27                   | -              | -              | -                | -                              |
| WB-1S              | 1.0                 | 26.00                  | 7.89                   | -              | 25             | 0.651            | 439.0                          |
| WB-3S              | 1.0                 | 32.00                  | 3.68                   | -              | 20             | 0.333            | 192.0                          |
| WB-3B              | 13.3                | -                      | 7.75                   | -              | -              | -                | -                              |
| WB-5S              | 1.0                 | 35.33                  | 2.18                   | -              | 20             | -                | -                              |
| WB-5B              | 4.0                 | -                      | 2.87                   | -              | -              | -                | -                              |
| WB-7S              | 1.0                 | 26.67                  | 3.94                   | -              | 20             | 0.414            | 299.0                          |
| CP-3S              | 1.0                 | 30.00                  | 2.87                   | -              | 25             | 0.378            | 206.0                          |
| CP-3B              | 3.7                 | -                      | 18.72                  | -              | -              | -                | -                              |
| FM-1S              | 1.0                 | 16.67                  | 3.39                   | -              | 50             | -                | -                              |
| FM-3S              | 1.0                 | 26.67                  | 3.78                   | -              | 50             | 0.289            | 179.0                          |
| FM-3B              | 13.6                | -                      | 5.42                   | -              | -              | -                | -                              |
| FM-5S              | 1.0                 | 35.33                  | 2.48                   | -              | 30             | -                | -                              |

MOBILE BAY CRUISE MB-15

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|----------------|----------------|------------------|-------------------|
| FM-5B              | 3.6                 | -                      | 3.92           | -              | -                | -                 |
| FM-7S              | 1.0                 | 35.33                  | 3.74           | 30             | 0.595            | 262.0             |

## ***Mobile Bay Cruise Report***

***MB-16***

21 June 1991

***Vessel:***

*R/V Deborah B.*

***Operation Area:***

Mobile Bay: Bay Mouth, Bon Secour Bay,  
and Weeks Bay transect

***Scientific Party:***

Jon Pennock (Chief Scientist)  
Beth Gaza  
Ocean Science Class (11 students)

***Supporting Agency:***

U.S. Geological Survey

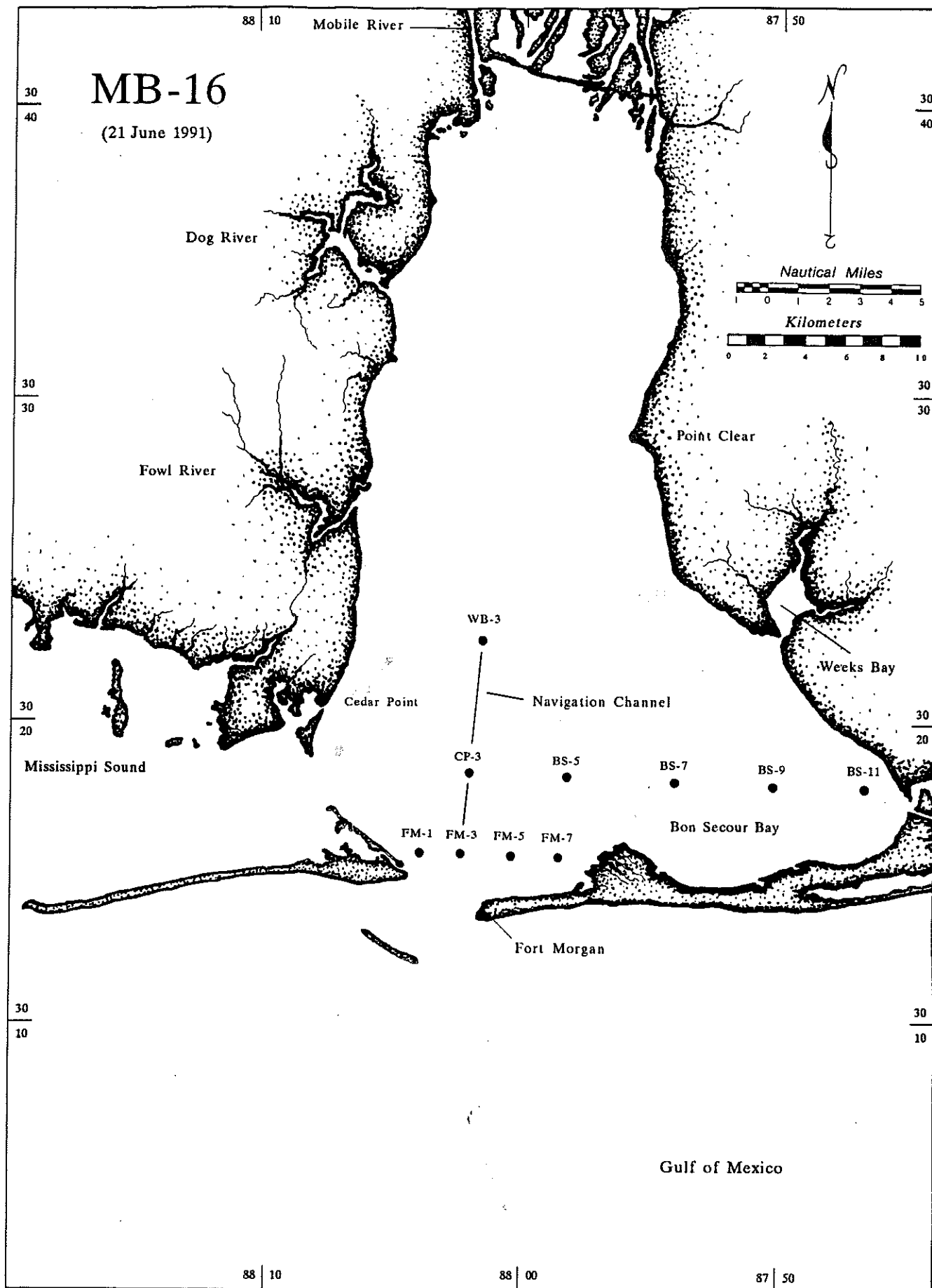
***Research Objectives:***

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 9 surface stations (all stations included bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Secchi disk measurements were made at each station. CTD profiles (sal, temp, DO, pH, sigma-t) were obtained with a Seabird SBE-25 at all stations.

***Cruise Summary:***

Departed DISL 0900. Deadheaded to station FM-1. Began sampling 0915. Stations were continued going upbay through station WB-3. Returned to DISL 1200.





## MOBILE BAY CRUISE MB-16

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LONG<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|-------------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| WB-3S              | 1.0                 | 6/21/91       | 1100          | 30 : 20.3        | 88 : 1.6          | 12772.8          | 47111.7          | 14.6                | 4.6               | 28.6        | -           | -           |
| WB-3B              | 13.6                | 6/21/91       | 1100          | 30 : 20.3        | 88 : 1.6          | 12772.8          | 47111.7          | 14.6                | 31.3              | 26.1        | -           | -           |
| CP-3S              | 1.0                 | 6/21/91       | 1007          | 30 : 18.2        | 88 : 1.9          | 12768.0          | 47103.0          | 15.2                | 5.6               | 28.1        | -           | -           |
| CP-3B              | 14.2                | 6/21/91       | 1007          | 30 : 18.2        | 88 : 1.9          | 12768.0          | 47103.0          | 15.2                | 31.5              | 25.9        | -           | -           |
| CP-5S              | 1.0                 | 6/21/91       | 1215          | 30 : 18.6        | 87 : 59.8         | 12790.0          | 47105.1          | 4.7                 | 4.7               | 28.7        | -           | -           |
| CP-5B              | 3.7                 | 6/21/91       | 1215          | 30 : 18.6        | 87 : 59.8         | 12790.0          | 47105.1          | 4.7                 | 6.2               | 28.4        | -           | -           |
| CP-7S              | 1.0                 | 6/21/91       | 1230          | 30 : 18.5        | 87 : 57.4         | 12815.0          | 47105.3          | 3.4                 | 5.4               | 28.7        | -           | -           |
| CP-7B              | 2.4                 | 6/21/91       | 1230          | 30 : 18.5        | 87 : 57.4         | 12815.0          | 47105.3          | 3.4                 | 5.7               | 28.4        | -           | -           |
| CP-9S              | 1.0                 | 6/21/91       | 1253          | 30 : 18.4        | 87 : 55.0         | 12840.0          | 47105.2          | 3.0                 | 5.3               | 28.6        | -           | -           |
| CP-9B              | 2.0                 | 6/21/91       | 1253          | 30 : 18.4        | 87 : 55.0         | 12840.0          | 47105.2          | 3.0                 | 5.4               | 28.5        | -           | -           |
| CP-11S             | 1.0                 | 6/21/91       | 1259          | 30 : 18.3        | 87 : 52.6         | 12865.0          | 47105.3          | 2.7                 | 4.9               | 29.3        | -           | -           |
| CP-11B             | 1.7                 | 6/21/91       | 1259          | 30 : 18.3        | 87 : 52.6         | 12865.0          | 47105.3          | 2.7                 | 5.1               | 29.1        | -           | -           |
| FM-1S              | 1.0                 | 6/21/91       | 914           | 30 : 15.7        | 88 : 3.7          | 12748.2          | 47092.1          | 4.8                 | 9.5               | 27.7        | -           | -           |
| FM-1B              | 3.8                 | 6/21/91       | 914           | 30 : 15.7        | 88 : 3.7          | 12748.2          | 47092.1          | 4.8                 | 22.2              | 26.9        | -           | -           |
| FM-3S              | 1.0                 | 6/21/91       | 925           | 30 : 15.6        | 88 : 2.3          | 12762.9          | 47091.9          | 14.6                | 8.2               | 27.5        | -           | -           |
| FM-3B              | 13.6                | 6/21/91       | 925           | 30 : 15.6        | 88 : 2.3          | 12762.9          | 47091.9          | 14.6                | 31.6              | 25.9        | -           | -           |
| FM-5S              | 1.0                 | 6/21/91       | 941           | 30 : 15.7        | 88 : 0.8          | 12778.5          | 47092.4          | 4.6                 | 7.9               | 27.6        | -           | -           |
| FM-5B              | 3.6                 | 6/21/91       | 941           | 30 : 15.7        | 88 : 0.8          | 12778.5          | 47092.4          | 4.6                 | 22.3              | 27.6        | -           | -           |

## MOBILE BAY CRUISE MB-16

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| WB-3S              | 1.0                 | -  | 829          | 0.13        | 0.00        | 0.28        | 2.22        | -          | 479         | 12.20       | 0.21        | 100.74     | 96.07      | 5.94       |
| WB-3B              | 13.6                | -  | -            | 0.45        | 3.22        | 2.84        | 5.94        | -          | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | -  | 876          | 0.22        | 0.00        | 0.10        | 1.43        | -          | 415         | 14.81       | 0.21        | 115.42     | 72.43      | 8.63       |
| CP-3B              | 14.2                | -  | -            | 0.35        | 1.82        | 2.01        | 2.35        | -          | -           | -           | -           | -          | -          | -          |
| CP-5S              | 1.0                 | -  | -            | 0.10        | 0.00        | 0.10        | 0.88        | -          | 422         | 147.48      | 0.16        | 103.41     | 65.77      | 5.42       |
| CP-5B              | 3.7                 | -  | -            | 0.13        | 0.08        | 0.28        | 2.04        | -          | -           | -           | -           | -          | -          | -          |
| CP-7S              | 1.0                 | -  | 871          | 0.10        | 0.11        | 0.18        | 3.27        | -          | 425         | 11.68       | 0.25        | 95.75      | 70.12      | 7.24       |
| CP-7B              | 2.4                 | -  | -            | 0.12        | 0.00        | 0.24        | 2.16        | -          | -           | -           | -           | -          | -          | -          |
| CP-9S              | 1.0                 | -  | -            | 0.15        | 0.00        | 0.17        | 2.35        | -          | 413         | 12.68       | 0.00        | 113.47     | 81.44      | 9.87       |
| CP-9B              | 2.0                 | -  | -            | 0.44        | 0.00        | 0.13        | 1.34        | -          | -           | -           | -           | -          | -          | -          |
| CP-11S             | 1.0                 | -  | 853          | 0.20        | 0.00        | 0.10        | 0.54        | -          | 455         | 13.50       | 1.77        | 118.92     | 80.76      | -          |
| CP-11B             | 1.7                 | -  | -            | 0.21        | 0.00        | 0.15        | 1.72        | -          | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.17        | 0.12        | 0.29        | 2.16        | -          | -           | -           | -           | -          | -          | -          |
| FM-1B              | 3.8                 | -  | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | -  | 1015         | 0.07        | 0.00        | 0.15        | 1.22        | -          | 404         | 14.84       | -           | 75.99      | 101.77     | 6.66       |
| FM-3B              | 13.6                | -  | -            | 0.18        | 1.35        | 1.32        | 1.24        | -          | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -  | -            | 0.13        | 0.00        | 0.11        | 1.03        | -          | 396         | 13.82       | 0.11        | 85.34      | 101.47     | 7.67       |
| FM-5B              | 3.6                 | -  | -            | 0.30        | 0.74        | 0.74        | 2.87        | -          | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-16

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|----------------|----------------|------------------|-------------------|
| WB-3S              | 1.0                 | 34.00                  | 7.36           | 150            | 0.382            | 254.0             |
| WB-3B              | 13.6                | -                      | 5.42           | -              | -                | -                 |
| CP-3S              | 1.0                 | 17.00                  | 12.59          | 130            | 0.562            | 595.0             |
| CP-3B              | 14.2                | -                      | 5.16           | -              | -                | -                 |
| CP-5S              | 1.0                 | 4.00                   | 5.38           | 140            | -                | -                 |
| CP-5B              | 3.7                 | -                      | 7.39           | -              | -                | -                 |
| CP-7S              | 1.0                 | 8.40                   | 5.27           | 125            | 0.379            | 637.0             |
| CP-7B              | 2.4                 | -                      | 10.03          | -              | -                | -                 |
| CP-9S              | 1.0                 | 4.00                   | 7.53           | 125            | -                | -                 |
| CP-9B              | 2.0                 | -                      | 6.89           | -              | -                | -                 |
| CP-11S             | 1.0                 | 10.80                  | 7.42           | 100            | 0.302            | 370.0             |
| CP-11B             | 1.7                 | -                      | 6.99           | -              | -                | -                 |
| FM-1S              | 1.0                 | 9.62                   | 5.99           | 130            | -                | -                 |
| FM-1B              | 3.8                 | -                      | -              | -              | -                | -                 |
| FM-3S              | 1.0                 | 4.50                   | 6.56           | 130            | 0.455            | 1177.0            |
| FM-3B              | 13.6                | -                      | 7.65           | -              | -                | -                 |
| FM-5S              | 1.0                 | 16.40                  | 4.80           | 130            | -                | -                 |
| FM-5B              | 3.6                 | -                      | 6.18           | -              | -                | -                 |



## **Mobile Bay Cruise Report**

**MB-17**

22, 29 July 1991

**Vessel:**

*R/V Deborah B.*

**Operation Area:**

- \* 22 July: Mobile Bay from Fort Morgan to Mobile River
- \* 29 July: Mississippi Sound to Bon Secour Bay following Intracoastal Waterway, Bay Mouth following ship channel to Farewell Buoy

**Scientific Party:**

Jon Pennock (Chief Scientist)  
Beth Gaza  
Felix Fernandez  
David Nadeau  
Alma Robichaux  
Larry Thompson

**Supporting Agency:**

U.S. Geological Survey

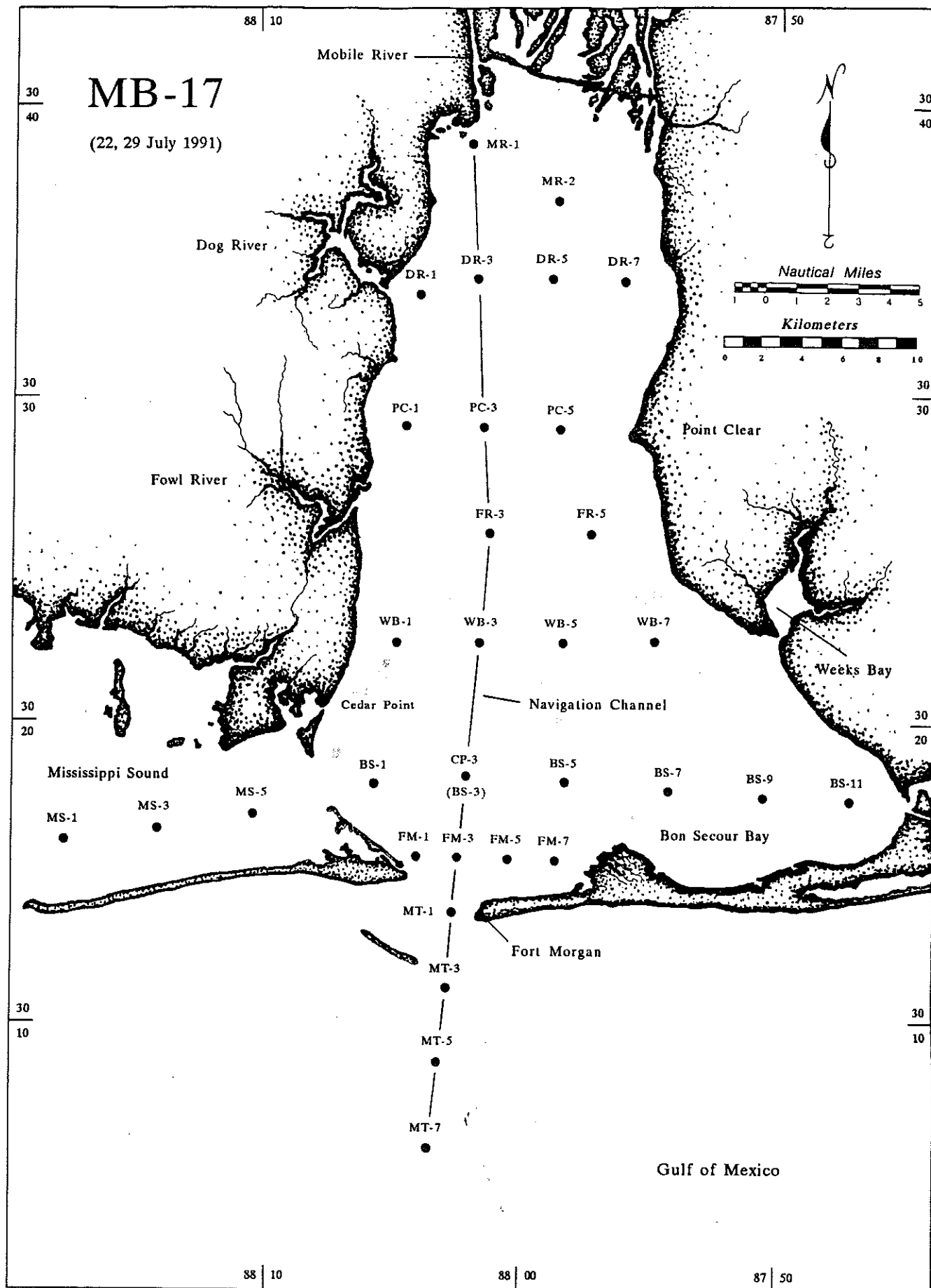
**Research Objectives:**

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 33 surface stations (22 of those including bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, sigma-t) were obtained with a Seabird SBE-25 at all stations.

**Cruise Summary:**

22 July: Departed DISL 0715. Deadheaded to station FM-1. Began sampling 0730. Stations were continued going upbay through station MR-1. Returned to DISL 1530.

29 July: Departed DISL 0700. Deadheaded to station MS-1. Began sampling 0800. Stations were continued going east to station BS-11, then south to MT-7. Returned to DISL 1300.



## MOBILE BAY CRUISE MB-17

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LON<br>DEG : MIN | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|------------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 7/22/91       | 1339          | 30 : 38.3        | 88 : 1.9         | 1.9        | 12780.5          | 47181.0          | 14.3                | 4.0               | 31.7        | 6.6         | 92          |
| MR-1B              | 13.3                | 7/22/91       | 1339          | 30 : 38.3        | 88 : 1.9         | 1.9        | 12780.5          | 47181.0          | 14.3                | 29.1              | 27.2        | 1.7         | 25          |
| MR-2S              | 1.0                 | 7/22/91       | 1318          | 30 : 36.3        | 87 : 58.6        | 58.6       | 12815.1          | 47175.0          | 3.4                 | 3.0               | 31.1        | 7.6         | 104         |
| DR-1S              | 1.0                 | 7/22/91       | 1215          | 30 : 32.5        | 88 : 4.0         | 4.0        | 12755.5          | 47159.0          | 2.7                 | 5.1               | 31.2        | 6.9         | 96          |
| DR-3S              | 1.0                 | 7/22/91       | 1230          | 30 : 34.0        | 88 : 1.7         | 1.7        | 12780.6          | 47165.5          | 14.6                | 4.9               | 31.2        | 7.2         | 100         |
| DR-3B              | 13.6                | 7/22/91       | 1230          | 30 : 34.0        | 88 : 1.7         | 1.7        | 12780.6          | 47165.5          | 14.6                | 28.6              | 28.0        | 2.5         | 37          |
| DR-5S              | 1.0                 | 7/22/91       | 1249          | 30 : 34.3        | 87 : 58.5        | 58.5       | 12814.1          | 47167.6          | 3.6                 | 3.8               | 31.1        | 7.4         | 102         |
| DR-5B              | 2.6                 | 7/22/91       | 1249          | 30 : 34.3        | 87 : 58.5        | 58.5       | 12814.1          | 47167.6          | 3.6                 | 5.6               | 30.7        | 5.9         | 82          |
| DR-7S              | 1.0                 | 7/22/91       | 1302          | 30 : 34.4        | 87 : 56.1        | 56.1       | 12840.3          | 47169.0          | 3.0                 | 3.3               | 30.9        | 6.6         | 91          |
| DR-7B              | 2.0                 | 7/22/91       | 1302          | 30 : 34.4        | 87 : 56.1        | 56.1       | 12840.3          | 47169.0          | 3.0                 | 5.3               | 30.4        | 5.2         | 71          |
| PC-1S              | 1.0                 | 7/22/91       | 1157          | 30 : 29.1        | 88 : 4.0         | 4.0        | 12753.3          | 47145.9          | 3.0                 | 6.8               | 30.8        | 7.1         | 99          |
| PC-3S              | 1.0                 | 7/22/91       | 1138          | 30 : 28.5        | 88 : 1.0         | 1.0        | 12783.9          | 47144.7          | 14.3                | 6.9               | 30.7        | 7.0         | 98          |
| PC-3B              | 13.3                | 7/22/91       | 1138          | 30 : 28.5        | 88 : 1.0         | 1.0        | 12783.9          | 47144.7          | 14.3                | 28.7              | 28.4        | 3.6         | 54          |
| PC-5S              | 1.0                 | 7/22/91       | 1115          | 30 : 28.4        | 87 : 58.0        | 58.0       | 12815.6          | 47145.3          | 3.6                 | 7.2               | 30.4        | 6.7         | 92          |
| PC-5B              | 2.6                 | 7/22/91       | 1115          | 30 : 28.4        | 87 : 58.0        | 58.0       | 12815.6          | 47145.3          | 3.6                 | 11.9              | 29.8        | 5.0         | 70          |
| FR-3S              | 1.0                 | 7/22/91       | 1053          | 30 : 25.4        | 88 : 0.9         | 0.9        | 12783.7          | 47132.4          | 14.3                | 9.8               | 30.6        | 7.1         | 100         |
| FR-3B              | 13.3                | 7/22/91       | 1053          | 30 : 25.4        | 88 : 0.9         | 0.9        | 12783.7          | 47132.4          | 14.3                | 28.8              | 28.8        | 4.3         | 65          |
| FR-5S              | 1.0                 | 7/22/91       | 1033          | 30 : 25.1        | 87 : 56.9        | 56.9       | 12824.9          | 47132.5          | 3.6                 | 9.0               | 30.2        | 6.9         | 96          |
| FR-5B              | 2.6                 | 7/22/91       | 1033          | 30 : 25.1        | 87 : 56.9        | 56.9       | 12824.9          | 47132.5          | 3.6                 | 13.1              | 29.9        | 5.7         | 81          |
| WB-1S              | 1.0                 | 7/22/91       | 925           | 30 : 22.6        | 88 : 4.4         | 4.4        | 12745.1          | 47120.1          | 3.8                 | 10.0              | 29.9        | 6.5         | 91          |
| WB-3S              | 1.0                 | 7/22/91       | 941           | 30 : 22.6        | 88 : 1.3         | 1.3        | 12777.9          | 47121.1          | 14.0                | 12.5              | 29.6        | 6.9         | 97          |
| WB-3B              | 13.0                | 7/22/91       | 941           | 30 : 22.6        | 88 : 1.3         | 1.3        | 12777.9          | 47121.1          | 14.0                | 28.7              | 29.1        | 5.1         | 78          |
| WB-5S              | 1.0                 | 7/22/91       | 1000          | 30 : 22.8        | 87 : 58.2        | 58.2       | 12810.3          | 47122.6          | 4.0                 | 10.8              | 29.8        | 6.8         | 95          |
| WB-5B              | 3.0                 | 7/22/91       | 1000          | 30 : 22.8        | 87 : 58.2        | 58.2       | 12810.3          | 47122.6          | 4.0                 | 17.2              | 29.4        | 4.7         | 68          |
| WB-7S              | 1.0                 | 7/22/91       | 1015          | 30 : 22.6        | 87 : 55.3        | 55.3       | 12840.2          | 47122.7          | 3.4                 | 8.8               | 29.3        | 7.3         | 100         |
| CP-3S              | 1.0                 | 7/22/91       | 855           | 30 : 18.2        | 88 : 1.9         | 1.9        | 12768.2          | 47103.0          | 15.2                | 15.6              | 29.3        | 6.2         | 89          |
| CP-3B              | 14.2                | 7/22/91       | 855           | 30 : 18.2        | 88 : 1.9         | 1.9        | 12768.2          | 47103.0          | 15.2                | 28.9              | 29.4        | 5.7         | 88          |
| FM-1S              | 1.0                 | 7/22/91       | 733           | 30 : 15.7        | 88 : 3.7         | 3.7        | 12748.1          | 47091.9          | 5.2                 | 17.0              | 29.3        | 5.9         | 84          |



## MOBILE BAY CRUISE MB-17

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LON<br>DEG | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |     |
|--------------------|---------------------|---------------|---------------|------------|------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|-----|
| FM-3S              | 1.0                 | 7/22/91       | 804           | 30 :       | 15.5       | 88 :       | 2.3              | 12762.7          | 47091.5             | 14.6              | 21.9        | 29.4        | 5.8         | 85  |
| FM-3B              | 13.6                | 7/22/91       | 804           | 30 :       | 15.5       | 88 :       | 2.3              | 12762.7          | 47091.5             | 14.6              | 29.0        | 29.9        | 5.7         | 88  |
| FM-5S              | 1.0                 | 7/22/91       | 820           | 30 :       | 15.7       | 88 :       | 0.7              | 12778.9          | 47092.4             | 4.7               | 24.9        | 29.4        | 6.0         | 91  |
| FM-5B              | 3.7                 | 7/22/91       | 820           | 30 :       | 15.7       | 88 :       | 0.7              | 12778.9          | 47092.4             | 4.7               | 28.5        | 29.5        | 5.9         | 91  |
| FM-7S              | 1.0                 | 7/22/91       | 833           | 30 :       | 15.5       | 87 :       | 58.9             | 12797.8          | 47092.1             | 4.4               | 23.4        | 29.1        | 6.0         | 89  |
| MS-1S              | 1.0                 | 7/29/91       | 809           | 30 :       | 15.2       | 88 :       | 18.5             | 12595.2          | 47087.4             | 4.0               | 24.7        | 29.4        | 6.5         | 97  |
| MS-1B              | 4.0                 | 7/29/91       | 809           | 30 :       | 15.2       | 88 :       | 18.5             | 12595.2          | 47087.4             | 4.0               | 24.7        | 29.4        | -           | -   |
| MS-3S              | 1.0                 | 7/29/91       | 830           | 30 :       | 15.6       | 88 :       | 14.4             | 12637.1          | 47089.5             | 4.2               | 23.7        | 29.5        | 6.0         | 90  |
| MS-5S              | 1.0                 | 7/29/91       | 847           | 30 :       | 16.1       | 88 :       | 10.3             | 12680.3          | 47092.7             | 4.0               | 22.3        | 29.6        | 6.0         | 89  |
| MS-5B              | 4.0                 | 7/29/91       | 847           | 30 :       | 16.1       | 88 :       | 10.3             | 12680.3          | 47092.7             | 4.0               | 22.4        | 29.7        | 5.6         | 84  |
| BS-1S              | 1.0                 | 7/29/91       | 908           | 30 :       | 16.9       | 88 :       | 5.8              | 12727.3          | 47096.7             | 4.2               | 12.7        | 29.4        | 7.1         | 99  |
| BS-3S              | 1.0                 | 7/29/91       | 926           | 30 :       | 17.2       | 88 :       | 2.1              | 12765.8          | 47098.5             | 15.2              | 15.5        | 29.5        | 6.9         | 98  |
| BS-3B              | 15.2                | 7/29/91       | 926           | 30 :       | 17.2       | 88 :       | 2.1              | 12765.8          | 47098.5             | 15.2              | 31.5        | 27.7        | 3.9         | 59  |
| BS-5S              | 1.0                 | 7/29/91       | 945           | 30 :       | 16.9       | 87 :       | 58.3             | 12805.0          | 47098.3             | 3.6               | 17.1        | 29.5        | 6.2         | 89  |
| BS-7S              | 1.0                 | 7/29/91       | 1002          | 30 :       | 16.7       | 87 :       | 54.2             | 12847.4          | 47098.3             | 4.0               | 15.3        | 29.8        | 7.2         | 104 |
| BS-7B              | 4.0                 | 7/29/91       | 1002          | 30 :       | 16.7       | 87 :       | 54.2             | 12847.4          | 47098.3             | 4.0               | 16.5        | 29.7        | 5.7         | 83  |
| BS-9S              | 1.0                 | 7/29/91       | 1019          | 30 :       | 16.8       | 87 :       | 51.1             | 12879.7          | 47098.9             | 4.2               | 14.2        | 30.1        | 6.4         | 92  |
| BS-11S             | 1.0                 | 7/29/91       | 1032          | 30 :       | 16.7       | 87 :       | 47.9             | 12913.0          | 47099.5             | 4.0               | 12.3        | 30.1        | 6.7         | 96  |
| BS-11B             | 4.0                 | 7/29/91       | 1032          | 30 :       | 16.7       | 87 :       | 47.9             | 12913.0          | 47099.5             | 4.0               | 12.4        | 29.8        | 6.1         | 87  |
| MT-1S              | 1.0                 | 7/29/91       | 1127          | 30 :       | 14.0       | 88 :       | 2.3              | 12761.7          | 47085.7             | 15.2              | 20.8        | 30.1        | 6.5         | 97  |
| MT-1B              | 15.2                | 7/29/91       | 1127          | 30 :       | 14.0       | 88 :       | 2.3              | 12761.7          | 47085.7             | 15.2              | 33.4        | 27.1        | 3.4         | 52  |
| MT-3S              | 1.0                 | 7/29/91       | 1143          | 30 :       | 11.7       | 88 :       | 2.6              | 12757.1          | 47075.1             | 15.5              | 30.8        | 29.2        | 5.1         | 79  |
| MT-3B              | 15.5                | 7/29/91       | 1143          | 30 :       | 11.7       | 88 :       | 2.6              | 12757.1          | 47075.1             | 15.5              | 34.6        | 26.2        | 2.8         | 43  |
| MT-5S              | 1.0                 | 7/29/91       | 1200          | 30 :       | 9.5        | 88 :       | 3.2              | 12750.4          | 47065.8             | 14.9              | 27.9        | 30.3        | 6.0         | 93  |
| MT-5B              | 14.9                | 7/29/91       | 1200          | 30 :       | 9.5        | 88 :       | 3.2              | 12750.4          | 47065.8             | 14.9              | 34.6        | 26.2        | 3.1         | 46  |
| MT-7S              | 1.0                 | 7/29/91       | 1217          | 30 :       | 7.3        | 88 :       | 4.2              | 12738.6          | 47055.9             | 17.7              | 23.2        | 30.1        | 6.4         | 96  |
| MT-7B              | 17.7                | 7/29/91       | 1217          | 30 :       | 7.3        | 88 :       | 4.2              | 12738.6          | 47055.9             | 17.7              | 34.8        | 25.8        | 2.5         | 38  |

## MOBILE BAY CRUISE MB-17

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -  | 936          | 0.38        | 3.83        | 0.64        | 4.90        | 101.20     | 449         | 14.55       | 0.30        | 89.10      | 11.44      | 12.17      |
| MR-1B              | 13.3                | -  | -            | 1.05        | 3.70        | 2.12        | 14.41       | 27.06      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -  | -            | 0.10        | 0.30        | 0.04        | 0.51        | 99.78      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | -  | -            | 0.07        | 0.31        | 0.04        | 0.14        | 81.83      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -  | 958          | 0.06        | 0.22        | 0.04        | 0.45        | 88.43      | -           | 15.70       | 0.59        | 78.75      | 10.18      | 8.19       |
| DR-3B              | 13.6                | -  | -            | 0.70        | 0.53        | 0.73        | 10.20       | 26.69      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -  | -            | 0.09        | 0.24        | 0.04        | 0.21        | 65.26      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.6                 | -  | -            | 0.13        | 1.21        | 0.23        | 2.93        | 88.93      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -  | 877          | 0.08        | 0.46        | 0.08        | 2.72        | 88.37      | -           | 16.44       | 0.35        | 84.17      | 11.43      | 9.68       |
| DR-7B              | 2.0                 | -  | -            | 0.26        | 0.86        | 0.16        | 6.05        | 96.37      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | -  | -            | 0.09        | 0.25        | 0.05        | 0.25        | 76.39      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | -  | 1004         | 0.05        | 0.30        | 0.01        | 0.58        | 71.31      | 401         | 15.03       | 0.25        | 80.11      | 11.05      | 9.54       |
| PC-3B              | 13.3                | -  | -            | 0.58        | 0.38        | 0.42        | 7.16        | 24.99      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | -  | 1030         | 0.12        | 0.27        | 0.05        | 0.54        | 88.10      | 305         | 15.61       | 0.21        | 79.83      | 10.43      | 10.30      |
| PC-5B              | 2.6                 | -  | -            | 0.19        | 0.38        | 0.12        | 2.22        | 70.41      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -  | 1071         | 0.06        | 0.27        | 0.03        | 0.76        | 60.84      | 301         | 12.95       | 0.30        | 88.87      | 12.45      | 7.67       |
| FR-3B              | 13.3                | -  | -            | 0.17        | 0.27        | 0.07        | 2.70        | 13.56      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | -  | -            | 0.10        | 0.32        | 0.05        | 0.41        | 73.50      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.6                 | -  | -            | 0.12        | 0.29        | 0.05        | 0.59        | 61.00      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | -  | 1094         | 0.16        | 0.28        | 0.04        | 1.74        | 75.36      | 288         | 13.27       | 0.21        | 95.48      | 14.29      | 8.43       |
| WB-3S              | 1.0                 | -  | 1199         | 0.15        | 0.32        | 0.07        | 0.95        | 62.37      | 290         | 12.56       | 0.16        | 83.21      | 11.79      | 7.81       |
| WB-3B              | 13.0                | -  | -            | 0.46        | 0.43        | 0.16        | 4.44        | 22.11      | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | -  | -            | 0.20        | 0.39        | 0.07        | 3.01        | 65.02      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 3.0                 | -  | -            | 0.17        | 0.33        | 0.11        | 0.84        | 55.04      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | -  | 1041         | 0.16        | 0.34        | 0.05        | 0.42        | 77.90      | 296         | 16.47       | 0.59        | 162.36     | 22.92      | 14.52      |
| CP-3S              | 1.0                 | -  | 1360         | 0.05        | 0.29        | 0.03        | 0.38        | 48.53      | 240         | 11.92       | 0.21        | 69.31      | 9.76       | 10.30      |
| CP-3B              | 14.2                | -  | -            | 0.22        | 0.31        | 0.08        | 1.75        | 16.03      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.16        | 0.27        | 0.06        | 0.45        | 44.77      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-17

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | -  | 1636         | 0.12        | 0.35        | 0.06        | 1.13        | 24.05      | -           | 9.33        | 0.25        | 59.31      | 6.79       | 10.64      |
| FM-3B              | 13.6                | -  | -            | 0.09        | 0.29        | 0.05        | 1.27        | 11.49      | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -  | -            | 0.10        | 0.31        | 0.04        | 0.52        | 19.89      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.7                 | -  | -            | 0.06        | 0.35        | 0.04        | 0.62        | 11.74      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | 1666         | 0.12        | 0.27        | 0.06        | 0.79        | 23.60      | 231         | 10.62       | 0.21        | 79.44      | 12.76      | 8.19       |
| MS-1S              | 1.0                 | -  | 1740         | 0.18        | 0.41        | 0.08        | 3.13        | 18.57      | 210         | 8.37        | 0.25        | 73.50      | 10.29      | 7.96       |
| MS-1B              | 4.0                 | -  | -            | 0.20        | 0.46        | 0.08        | 1.07        | 22.43      | -           | -           | -           | -          | -          | -          |
| MS-3S              | 1.0                 | -  | -            | 0.27        | 0.32        | 0.07        | 0.78        | 14.33      | -           | -           | -           | -          | -          | -          |
| MS-5S              | 1.0                 | -  | 1577         | 0.40        | 0.37        | 0.10        | 1.32        | 21.47      | 244         | 16.49       | 0.92        | 120.92     | 15.86      | 10.06      |
| MS-5B              | 4.0                 | -  | -            | 0.40        | 0.37        | 0.09        | 0.79        | 20.60      | -           | -           | -           | -          | -          | -          |
| BS-1S              | 1.0                 | -  | -            | 0.10        | 0.42        | 0.10        | 1.33        | 52.27      | -           | -           | -           | -          | -          | -          |
| BS-3S              | 1.0                 | -  | 1300         | 0.08        | 0.35        | 0.06        | 0.82        | 40.23      | 226         | 11.41       | 0.16        | 78.28      | 10.38      | 6.47       |
| BS-3B              | 15.2                | -  | -            | 0.55        | 1.93        | 2.62        | 1.08        | 18.35      | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | -  | -            | 0.13        | 0.39        | 0.08        | 0.77        | 25.59      | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | -  | 1244         | 0.19        | 0.35        | 0.08        | 0.83        | 32.68      | 249         | 14.61       | 0.11        | 113.06     | 13.33      | 10.50      |
| BS-7B              | 4.0                 | -  | -            | 0.27        | 0.52        | 0.09        | 1.23        | 29.47      | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | -  | -            | 0.45        | 0.35        | 0.12        | 1.41        | 58.22      | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | -  | 1274         | 0.23        | 0.46        | 0.11        | 1.28        | 62.20      | 337         | 20.76       | 0.30        | 189.67     | 27.14      | 20.46      |
| BS-11B             | 4.0                 | -  | -            | 0.35        | 0.32        | 0.08        | 0.96        | 69.58      | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | -  | -            | 0.06        | 0.48        | 0.07        | 0.84        | 26.61      | -           | -           | -           | -          | -          | -          |
| MT-1B              | 15.2                | -  | -            | 0.16        | 4.89        | 2.78        | 0.50        | 17.77      | -           | -           | -           | -          | -          | -          |
| MT-3S              | 1.0                 | -  | 1990         | 0.49        | 1.90        | 2.89        | 0.89        | 16.32      | 140         | 4.31        | 0.35        | 45.78      | 5.52       | 7.33       |
| MT-3B              | 15.5                | -  | -            | 0.58        | 7.06        | 4.79        | 0.95        | 27.77      | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | -  | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| MT-5B              | 14.9                | -  | -            | 0.36        | 4.88        | 3.07        | 1.42        | 18.46      | -           | -           | -           | -          | -          | -          |
| MT-7S              | 1.0                 | -  | 1619         | 0.09        | 0.42        | 0.16        | 1.07        | 28.54      | -           | 7.74        | 0.16        | 67.38      | 8.21       | 9.54       |
| MT-7B              | 17.7                | -  | -            | 0.68        | 5.61        | 2.72        | 1.86        | 26.17      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-17

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 16.40                  | 11.62          | 1.36           | 100              | 0.715             |
| MR-1B              | 13.3                | -                      | 1.72           | -              | -                | 674.0             |
| MR-2S              | 1.0                 | 14.40                  | 5.85           | 1.36           | 110              | -                 |
| DR-1S              | 1.0                 | 3.20                   | 3.87           | 1.32           | 165              | -                 |
| DR-3S              | 1.0                 | 11.60                  | 3.87           | 1.09           | 150              | 0.312             |
| DR-3B              | 13.6                | -                      | 1.89           | -              | -                | 538.0             |
| DR-5S              | 1.0                 | 15.60                  | 5.34           | 1.30           | 155              | -                 |
| DR-5B              | 2.6                 | -                      | 8.18           | -              | -                | -                 |
| DR-7S              | 1.0                 | 15.20                  | 6.46           | 1.52           | 120              | 0.597             |
| DR-7B              | 2.0                 | -                      | 6.54           | -              | -                | 669.0             |
| PC-1S              | 1.0                 | 6.00                   | 6.97           | 1.71           | 125              | -                 |
| PC-3S              | 1.0                 | 16.40                  | 4.65           | 1.59           | 140              | 0.264             |
| PC-3B              | 13.3                | -                      | 1.95           | -              | -                | 281.0             |
| PC-5S              | 1.0                 | 31.60                  | 6.63           | 1.02           | 125              | 0.322             |
| PC-5B              | 2.6                 | -                      | 9.90           | -              | -                | 621.0             |
| FR-3S              | 1.0                 | 22.80                  | 4.70           | 0.95           | 140              | 0.224             |
| FR-3B              | 13.3                | -                      | 1.63           | -              | -                | 431.0             |
| FR-5S              | 1.0                 | 16.80                  | 4.13           | 0.76           | 145              | -                 |
| FR-5B              | 2.6                 | -                      | 8.28           | -              | -                | -                 |
| WB-1S              | 1.0                 | 31.60                  | 8.39           | 1.12           | 145              | 0.491             |
| WB-3S              | 1.0                 | 6.40                   | 3.14           | -              | 165              | 0.474             |
| WB-3B              | 13.0                | -                      | 13.56          | 0.83           | -                | 669.0             |
| WB-5S              | 1.0                 | 10.80                  | 3.59           | 0.76           | 170              | 798.0             |
| WB-5B              | 3.0                 | -                      | 5.49           | -              | -                | -                 |
| WB-7S              | 1.0                 | 11.60                  | 10.01          | 1.36           | 120              | 0.580             |
| CP-3S              | 1.0                 | 32.80                  | 2.83           | 0.81           | 150              | 0.427             |
| CP-3B              | 14.2                | -                      | 3.02           | -              | -                | 1066.0            |
| FM-1S              | 1.0                 | 16.00                  | 2.37           | 0.97           | 140              | -                 |

## MOBILE BAY CRUISE MB-17

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | SESTON CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|------------------------|----------------|----------------|------------------|-------------------|
| FM-3S              | 1.0                 | 7.20                   | 2.39                   | 0.71           | 150            | 0.616            | 1623.0            |
| FM-3B              | 13.6                | -                      | 2.02                   | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 16.00                  | 1.58                   | 0.63           | 275            | -                | -                 |
| FM-5B              | 3.7                 | -                      | 1.81                   | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 16.80                  | 3.51                   | 0.67           | 175            | 0.610            | 1619.0            |
| MS-1S              | 1.0                 | 43.20                  | 3.32                   | 0.90           | 125            | 0.324            | 704.0             |
| MS-1B              | 4.0                 | -                      | 3.49                   | -              | -              | -                | -                 |
| MS-3S              | 1.0                 | 54.00                  | 6.20                   | 1.54           | 80             | -                | -                 |
| MS-5S              | 1.0                 | -                      | 5.85                   | 1.82           | 65             | 0.698            | 660.0             |
| MS-5B              | 4.0                 | -                      | 5.81                   | -              | -              | -                | -                 |
| BS-1S              | 1.0                 | 37.00                  | 4.39                   | 1.08           | 110            | -                | -                 |
| BS-3S              | 1.0                 | 42.50                  | 1.89                   | 0.77           | 150            | 0.295            | 716.0             |
| BS-3B              | 15.2                | -                      | 4.56                   | -              | -              | -                | -                 |
| BS-5S              | 1.0                 | 44.40                  | 2.24                   | 0.91           | 125            | -                | -                 |
| BS-7S              | 1.0                 | 35.60                  | 7.83                   | 1.09           | 120            | 0.389            | 667.0             |
| BS-7B              | 4.0                 | -                      | 9.21                   | -              | -              | -                | -                 |
| BS-9S              | 1.0                 | 42.80                  | 9.04                   | 1.60           | 78             | -                | -                 |
| BS-11S             | 1.0                 | 36.80                  | 17.64                  | 1.95           | 60             | 0.584            | 792.0             |
| BS-11B             | 4.0                 | -                      | 13.23                  | -              | -              | -                | -                 |
| MT-1S              | 1.0                 | 44.00                  | 3.10                   | 0.33           | 165            | -                | -                 |
| MT-1B              | 15.2                | -                      | 3.44                   | -              | -              | -                | -                 |
| MT-3S              | 1.0                 | 44.57                  | 1.64                   | 0.41           | 215            | 0.716            | 2906.0            |
| MT-3B              | 15.5                | -                      | 1.64                   | -              | -              | -                | -                 |
| MT-5S              | 1.0                 | -                      | 1.21                   | 0.45           | 295            | -                | -                 |
| MT-5B              | 14.9                | -                      | 1.39                   | -              | -              | -                | -                 |
| MT-7S              | 1.0                 | 42.33                  | 2.00                   | 0.37           | 270            | -                | -                 |
| MT-7B              | 17.7                | -                      | 1.14                   | -              | -              | -                | -                 |

## ***Mobile Bay Cruise Report***

### ***MB-18***

19, 21 August 1991

***Vessel:***

*R/V Deborah B.*

***Operation Area:***

- \* 19 August: Mobile Bay from Fort Morgan to Mobile River
- \* 21 August: Mississippi Sound to Bon Secour Bay following the Intracoastal Waterway, Bay Mouth following ship channel to Farewell Buoy

***Scientific Party:***

Felix Fernandez (Chief Scientist)  
Alma Robichaux  
Laurie Sullivan

***Supporting Agency:***

U.S. Geological Survey

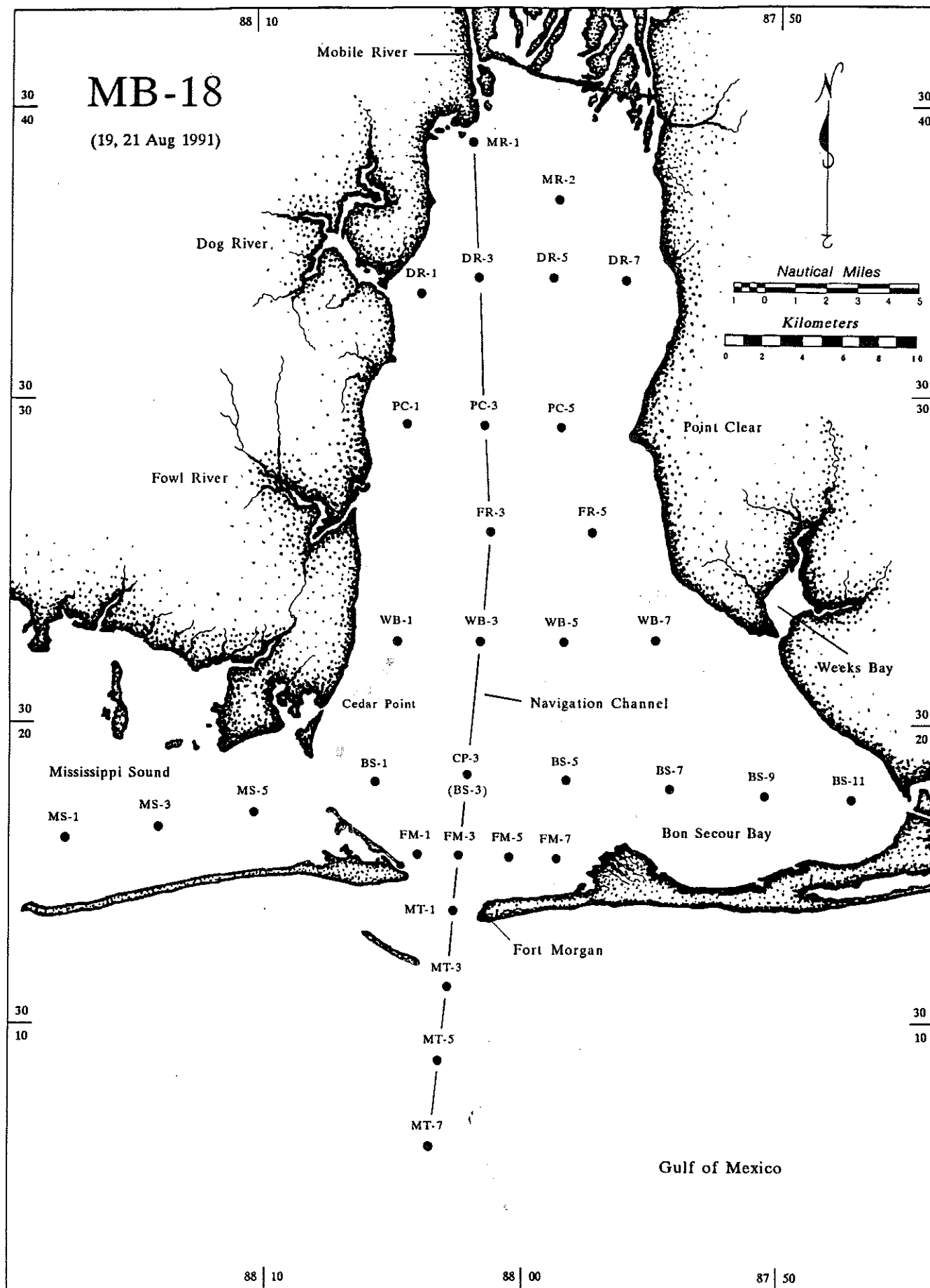
***Research Objectives:***

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 33 surface stations (22 of those including bottom water casts). Samples were taken for  $\text{TCO}_2$ , DOC, DON, DOP, POP, PC/PN, taxonomy identification and  $^{14}\text{C}$  productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, sigma-t) were obtained with a Seabird SBE-25 at all stations.

***Cruise Summary:***

19 August: Departed DISL 0715. Deadheaded to station FM-1. Began sampling 0730. Stations were continued going upbay through station MR-1. Returned to DISL 1430.

21 August: Departed DISL 0830. Deadheaded to station MS-1. Began sampling 0800. Stations were continued going east to station BS-11, then south to MT-7. Returned to DISL 1400.



## MOBILE BAY CRUISE MB-18

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 8/19/91       | 1247          | 30         | 38.1       | 88          | 1.9         | 12780.2          | 47180.2          | 14.6                | 7.1               | 30.7        | 5.9         | 83          |
| MR-1B              | 13.6                | 8/19/91       | 1247          | 30         | 38.1       | 88          | 1.9         | 12780.2          | 47180.2          | 14.6                | 31.9              | 27.4        | 1.3         | 19          |
| MR-2S              | 1.0                 | 8/19/91       | 1229          | 30         | 36.3       | 87          | 58.5        | 12815.6          | 47175.3          | 4.0                 | 5.4               | 30.6        | 8.8         | 121         |
| DR-1S              | 1.0                 | 8/19/91       | 1125          | 30         | 32.5       | 88          | 3.9         | 12755.4          | 47159.0          | 2.7                 | 8.7               | 30.3        | 7.5         | 105         |
| DR-3S              | 1.0                 | 8/19/91       | 1141          | 30         | 34.0       | 88          | 1.7         | 12780.5          | 47165.5          | 14.6                | 8.6               | 30.4        | 6.8         | 95          |
| DR-3B              | 13.6                | 8/19/91       | 1141          | 30         | 34.0       | 88          | 1.7         | 12780.5          | 47165.5          | 14.6                | 32.0              | 27.4        | 1.6         | 25          |
| DR-5S              | 1.0                 | 8/19/91       | 1158          | 30         | 34.1       | 87          | 58.5        | 12814.5          | 47167.1          | 3.6                 | 7.6               | 29.9        | 8.9         | 122         |
| DR-5B              | 2.6                 | 8/19/91       | 1158          | 30         | 34.1       | 87          | 58.5        | 12814.5          | 47167.1          | 3.6                 | 8.6               | 29.4        | 7.7         | 105         |
| DR-7S              | 1.0                 | 8/19/91       | 1215          | 30         | 34.5       | 87          | 56.0        | 12840.4          | 47169.4          | 3.0                 | 6.1               | 30.0        | 7.3         | 100         |
| DR-7B              | 2.0                 | 8/19/91       | 1215          | 30         | 34.5       | 87          | 56.0        | 12840.4          | 47169.4          | 3.0                 | 7.6               | 29.5        | 7.0         | 96          |
| PC-1S              | 1.0                 | 8/19/91       | 1108          | 30         | 29.0       | 88          | 3.9         | 12753.7          | 47145.6          | 3.4                 | 11.2              | 29.4        | 6.7         | 94          |
| PC-3S              | 1.0                 | 8/19/91       | 1051          | 30         | 28.5       | 88          | 1.1         | 12783.5          | 47144.5          | 14.3                | 13.6              | 29.3        | 6.4         | 91          |
| PC-3B              | 13.3                | 8/19/91       | 1051          | 30         | 28.5       | 88          | 1.1         | 12783.5          | 47144.5          | 14.3                | 31.8              | 27.5        | 2.0         | 31          |
| PC-5S              | 1.0                 | 8/19/91       | 1036          | 30         | 28.4       | 87          | 58.1        | 12815.0          | 47145.3          | 4.0                 | 12.3              | 29.2        | 6.6         | 93          |
| PC-5B              | 3.0                 | 8/19/91       | 1036          | 30         | 28.4       | 87          | 58.1        | 12815.0          | 47145.3          | 4.0                 | 14.0              | 29.1        | 6.5         | 92          |
| FR-3S              | 1.0                 | 8/19/91       | 1015          | 30         | 25.5       | 88          | 0.8         | 12784.2          | 47132.8          | 14.6                | 14.5              | 29.4        | 6.5         | 92          |
| FR-3B              | 13.6                | 8/19/91       | 1015          | 30         | 25.5       | 88          | 0.8         | 12784.2          | 47132.8          | 14.6                | 32.1              | 27.5        | 1.9         | 29          |
| FR-5S              | 1.0                 | 8/19/91       | 958           | 30         | 25.0       | 87          | 56.9        | 12825.2          | 47132.1          | 3.6                 | 13.7              | 29.4        | 6.9         | 97          |
| FR-5B              | 2.6                 | 8/19/91       | 958           | 30         | 25.0       | 87          | 56.9        | 12825.2          | 47132.1          | 3.6                 | 14.3              | 29.3        | 7.0         | 99          |
| WB-1S              | 1.0                 | 8/19/91       | 857           | 30         | 22.6       | 88          | 4.4         | 12745.3          | 47120.3          | 3.6                 | 15.4              | 28.8        | 6.4         | 90          |
| WB-3S              | 1.0                 | 8/19/91       | 912           | 30         | 22.7       | 88          | 1.3         | 12777.5          | 47121.3          | 13.7                | 16.5              | 28.9        | 6.4         | 91          |
| WB-3B              | 12.7                | 8/19/91       | 912           | 30         | 22.7       | 88          | 1.3         | 12777.5          | 47121.3          | 13.7                | 32.4              | 27.7        | 2.2         | 34          |
| WB-5S              | 1.0                 | 8/19/91       | 928           | 30         | 22.7       | 87          | 58.1        | 12810.6          | 47122.2          | 4.0                 | 14.8              | 29.0        | 7.0         | 99          |
| WB-5B              | 3.0                 | 8/19/91       | 928           | 30         | 22.7       | 87          | 58.1        | 12810.6          | 47122.2          | 4.0                 | 15.2              | 28.9        | 6.9         | 97          |
| WB-7S              | 1.0                 | 8/19/91       | 943           | 30         | 22.5       | 87          | 55.3        | 12840.3          | 47122.5          | 3.4                 | 14.8              | 29.5        | 7.1         | 102         |
| CP-3S              | 1.0                 | 8/19/91       | 831           | 30         | 18.3       | 88          | 1.9         | 12768.7          | 47103.1          | 14.0                | 19.7              | 28.7        | 6.1         | 87          |
| CP-3B              | 13.0                | 8/19/91       | 831           | 30         | 18.3       | 88          | 1.9         | 12768.7          | 47103.1          | 14.0                | 31.2              | 27.8        | 3.7         | 56          |
| FM-1S              | 1.0                 | 8/19/91       | 730           | 30         | 15.7       | 88          | 3.7         | 12748.2          | 47092.2          | 4.8                 | 20.9              | 28.2        | 7.1         | 102         |



## MOBILE BAY CRUISE MB-18

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LON<br>DEG | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3S              | 1.0                 | 8/19/91       | 746           | 30         | 15.4       | 88         | 2.4        | 12762.0          | 47091.2          | 14.3                | 23.5              | 28.2        | 6.4         | 93          |
| FM-3B              | 13.3                | 8/19/91       | 746           | 30         | 15.4       | 88         | 2.4        | 12762.0          | 47091.2          | 14.3                | 31.9              | 27.4        | 3.4         | 52          |
| FM-5S              | 1.0                 | 8/19/91       | 759           | 30         | 15.6       | 88         | 0.8        | 12778.6          | 47092.0          | 4.6                 | 26.3              | 28.4        | 6.3         | 94          |
| FM-5B              | 3.6                 | 8/19/91       | 759           | 30         | 15.6       | 88         | 0.8        | 12778.6          | 47092.0          | 4.6                 | 29.8              | 28.1        | 5.2         | 79          |
| FM-7S              | 1.0                 | 8/19/91       | 812           | 30         | 15.5       | 87         | 58.9       | 12797.7          | 47092.1          | 4.2                 | 26.1              | 28.0        | 6.5         | 96          |
| MS-1S              | 1.0                 | 8/21/91       | 928           | 30         | 15.3       | 88         | 18.4       | 12595.8          | 47087.6          | 4.2                 | 27.4              | 28.4        | 6.3         | 95          |
| MS-1B              | 3.2                 | 8/21/91       | 928           | 30         | 15.3       | 88         | 18.4       | 12595.8          | 47087.6          | 4.2                 | 28.2              | 28.3        | 6.1         | 94          |
| MS-3S              | 1.0                 | 8/21/91       | 945           | 30         | 15.5       | 88         | 14.5       | 12636.4          | 47089.4          | 4.6                 | 26.1              | 28.3        | 6.5         | 96          |
| MS-5S              | 1.0                 | 8/21/91       | 1003          | 30         | 16.1       | 88         | 10.3       | 12680.3          | 47092.7          | 4.0                 | 23.5              | 28.3        | 6.7         | 97          |
| MS-5B              | 3.0                 | 8/21/91       | 1003          | 30         | 16.1       | 88         | 10.3       | 12680.3          | 47092.7          | 4.0                 | 24.1              | 28.4        | 6.5         | 95          |
| BS-1S              | 1.0                 | 8/21/91       | 1021          | 30         | 16.9       | 88         | 5.8        | 12727.0          | 47096.7          | 4.2                 | 18.1              | 28.4        | 6.8         | 97          |
| BS-3S              | 1.0                 | 8/21/91       | 1038          | 30         | 17.1       | 88         | 2.1        | 12765.2          | 47098.2          | 13.4                | 22.4              | 28.3        | 6.3         | 92          |
| BS-3B              | 12.4                | 8/21/91       | 1038          | 30         | 17.1       | 88         | 2.1        | 12765.2          | 47098.2          | 13.4                | 30.9              | 27.8        | 4.9         | 74          |
| BS-5S              | 1.0                 | 8/21/91       | 1054          | 30         | 16.9       | 87         | 58.3       | 12805.3          | 47098.2          | 3.6                 | 21.9              | 27.7        | 6.6         | 95          |
| BS-7S              | 1.0                 | 8/21/91       | 1108          | 30         | 16.8       | 87         | 54.9       | 12840.1          | 47098.3          | 3.6                 | 20.5              | 28.2        | 6.7         | 97          |
| BS-7B              | 2.6                 | 8/21/91       | 1108          | 30         | 16.8       | 87         | 54.9       | 12840.1          | 47098.3          | 3.6                 | 21.9              | 28.2        | 6.5         | 94          |
| BS-9S              | 1.0                 | 8/21/91       | 1127          | 30         | 16.7       | 87         | 51.1       | 12879.7          | 47098.8          | 4.0                 | 18.2              | 28.5        | 6.7         | 95          |
| BS-11S             | 1.0                 | 8/21/91       | 1141          | 30         | 16.8       | 87         | 47.9       | 12912.8          | 47099.5          | 4.0                 | 16.5              | 28.7        | 6.4         | 91          |
| BS-11B             | 3.0                 | 8/21/91       | 1141          | 30         | 16.8       | 87         | 47.9       | 12912.8          | 47099.5          | 4.0                 | 16.7              | 28.7        | 6.4         | 91          |
| MT-1S              | 1.0                 | 8/21/91       | 1230          | 30         | 13.4       | 88         | 23.0       | 12761.4          | 47084.9          | 15.2                | 22.1              | 28.9        | 6.7         | 98          |
| MT-1B              | 14.2                | 8/21/91       | 1230          | 30         | 13.4       | 88         | 23.0       | 12761.4          | 47084.9          | 15.2                | 32.6              | 27.7        | 4.5         | 69          |
| MT-3S              | 1.0                 | 8/21/91       | 1248          | 30         | 11.7       | 88         | 2.6        | 12757.5          | 47075.2          | 15.2                | 27.8              | 28.5        | 5.8         | 87          |
| MT-3B              | 14.2                | 8/21/91       | 1248          | 30         | 11.7       | 88         | 2.6        | 12757.5          | 47075.2          | 15.2                | 33.9              | 26.7        | 2.3         | 35          |
| MT-5S              | 1.0                 | 8/21/91       | 1256          | 30         | 9.6        | 88         | 3.1        | 12750.9          | 47065.9          | 13.1                | 28.2              | 28.7        | 5.8         | 87          |
| MT-5B              | 12.1                | 8/21/91       | 1256          | 30         | 9.6        | 88         | 3.1        | 12750.9          | 47065.9          | 13.1                | 34.6              | 26.3        | 1.6         | 25          |
| MT-7S              | 1.0                 | 8/21/91       | 1311          | 30         | 7.2        | 88         | 4.2        | 12738.5          | 47055.7          | 16.7                | 29.9              | 28.9        | 6.1         | 94          |
| MT-7B              | 16.7                | 8/21/91       | 1311          | 30         | 7.2        | 88         | 4.2        | 12738.5          | 47055.7          | 16.7                | 35.0              | 25.9        | 3.0         | 44          |

## MOBILE BAY CRUISE MB-18

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -  | 1096         | 0.23        | 3.05        | 0.37        | 3.55        | 61.56      | 338         | 18.74       | 0.68        | 105.00     | 15.66      | 9.17       |
| MR-1B              | 13.6                | -  | -            | 0.84        | 4.11        | 1.08        | 3.79        | 35.38      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -  | -            | 0.18        | 0.18        | 0.05        | 1.02        | 77.40      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | -  | -            | 0.17        | 0.06        | 0.02        | 0.65        | 71.81      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -  | 1046         | 0.12        | 0.10        | 0.04        | 3.52        | 84.00      | 317         | 8.66        | 0.25        | 114.92     | 15.40      | 10.86      |
| DR-3B              | 13.6                | -  | -            | 0.70        | 3.14        | 1.28        | 4.31        | 30.64      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -  | -            | 0.18        | 0.14        | 0.04        | 0.85        | 55.00      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.6                 | -  | -            | 0.12        | 0.08        | 0.02        | 0.16        | 62.94      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -  | 977          | 0.12        | 0.09        | 0.03        | 0.33        | 68.49      | 316         | 11.48       | 0.40        | 110.67     | 14.36      | 11.81      |
| DR-7B              | 2.0                 | -  | -            | 0.13        | 0.08        | 0.02        | 12.72       | 73.62      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | -  | -            | 0.15        | 0.11        | 0.03        | 0.65        | 57.72      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | -  | 1255         | 0.15        | 0.08        | 0.02        | 1.34        | 62.26      | 290         | 10.36       | 0.59        | 137.25     | 18.07      | 12.06      |
| PC-3B              | 13.3                | -  | -            | 0.71        | 2.68        | 1.25        | 5.48        | -          | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | -  | 1234         | 0.31        | 0.10        | 0.06        | 0.51        | 67.63      | 286         | 11.10       | 0.49        | 132.42     | 18.14      | 13.01      |
| PC-5B              | 3.0                 | -  | -            | 0.27        | 0.11        | 0.04        | 3.17        | 63.41      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -  | 1240         | 0.15        | 0.04        | 0.03        | 1.78        | 60.95      | 268         | 10.20       | 0.11        | 115.75     | 15.14      | 11.26      |
| FR-3B              | 13.6                | -  | -            | 1.17        | 5.03        | 2.06        | 5.42        | 34.05      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | -  | -            | 0.35        | 0.09        | 0.03        | 0.23        | 46.54      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.6                 | -  | -            | 0.23        | 0.05        | 0.04        | 0.81        | 54.47      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | -  | 1298         | 0.27        | 0.10        | 0.04        | 1.99        | 68.58      | 318         | 12.38       | 1.25        | 200.67     | 25.29      | 14.40      |
| WB-3S              | 1.0                 | -  | 1318         | 0.14        | 0.08        | 0.03        | 1.23        | 61.35      | -           | 10.05       | 0.92        | 124.67     | 15.71      | 5.43       |
| WB-3B              | 12.7                | -  | -            | 0.72        | 2.67        | 1.29        | 1.34        | 26.71      | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | -  | -            | 0.12        | 0.07        | 0.02        | 2.79        | 44.23      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 3.0                 | -  | -            | 0.20        | 0.12        | 0.04        | 1.23        | 55.68      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | -  | 1236         | 0.11        | 0.07        | 0.03        | 0.29        | 50.69      | 287         | 10.82       | 0.63        | 134.08     | 15.57      | 10.81      |
| CP-3S              | 1.0                 | -  | 1440         | 0.15        | 0.16        | 0.03        | 2.53        | 46.88      | 249         | 9.05        | 0.16        | 123.42     | 17.07      | 12.31      |
| CP-3B              | 13.0                | -  | -            | 0.38        | 0.73        | 0.58        | 3.58        | 25.92      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.21        | 0.08        | 0.03        | 2.25        | 41.12      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-18

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | -  | 1708         | 0.27        | 0.08        | 0.03        | 0.66        | -          | 224         | 7.52        | 0.59        | 119.25     | 18.86      | 10.37      |
| FM-3B              | 13.3                | -  | -            | 0.93        | 2.95        | 1.16        | 0.47        | 27.57      | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -  | -            | 0.14        | 0.12        | 0.02        | 4.42        | 18.84      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.6                 | -  | -            | 0.56        | 0.83        | 0.20        | 1.10        | 30.04      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | 1582         | 0.16        | 0.16        | 0.03        | 2.28        | 27.54      | 192         | 7.65        | -           | 103.00     | 16.36      | 8.87       |
| MS-1S              | 1.0                 | -  | 1960         | 0.39        | 0.09        | 0.07        | 1.55        | 19.90      | 218         | 9.33        | -           | 276.92     | 38.86      | 14.00      |
| MS-1B              | 3.2                 | -  | -            | 0.44        | 0.09        | 0.06        | 0.34        | 21.35      | -           | -           | -           | -          | -          | -          |
| MS-3S              | 1.0                 | -  | -            | 0.62        | 0.09        | 0.07        | 0.24        | 22.01      | -           | -           | -           | -          | -          | -          |
| MS-5S              | 1.0                 | -  | 1756         | 0.48        | 0.07        | 0.05        | 0.14        | 17.55      | 244         | 12.15       | 0.35        | 175.08     | 24.64      | 19.49      |
| MS-5B              | 3.0                 | -  | -            | 0.27        | 0.06        | 0.03        | 0.21        | 22.14      | -           | -           | -           | -          | -          | -          |
| BS-1S              | 1.0                 | -  | -            | 0.28        | 0.13        | 0.06        | 0.38        | 30.06      | -           | -           | -           | -          | -          | -          |
| BS-3S              | 1.0                 | -  | 1680         | 0.20        | 0.06        | 0.04        | 0.08        | 30.92      | 234         | 11.13       | 0.59        | 135.92     | 19.57      | 8.77       |
| BS-3B              | 12.4                | -  | -            | 0.61        | 1.02        | 0.24        | 0.43        | 25.45      | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | -  | -            | 0.33        | 0.11        | 0.10        | 0.72        | 39.04      | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | -  | 1609         | 0.38        | 0.08        | 0.08        | 0.28        | 21.69      | -           | 11.02       | 0.59        | 134.25     | 18.57      | 11.76      |
| BS-7B              | 2.6                 | -  | -            | 0.44        | 0.13        | 0.09        | 0.43        | 36.20      | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | -  | -            | 0.35        | 0.21        | 0.06        | 0.07        | 39.07      | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | -  | 1470         | 0.26        | 0.13        | 0.03        | 0.04        | 52.45      | -           | 17.06       | 0.59        | 192.83     | 27.57      | 16.89      |
| BS-11B             | 3.0                 | -  | -            | 0.25        | 0.14        | 0.04        | 0.05        | 47.73      | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | -  | -            | 0.33        | 0.09        | 0.06        | 0.08        | 25.25      | -           | -           | -           | -          | -          | -          |
| MT-1B              | 14.2                | -  | -            | 0.43        | 1.46        | 0.21        | 0.11        | 17.62      | -           | -           | -           | -          | -          | -          |
| MT-3S              | 1.0                 | -  | 1917         | 0.39        | 0.50        | 0.06        | 0.04        | 13.91      | -           | 7.44        | 0.40        | 111.33     | 14.64      | 9.87       |
| MT-3B              | 14.2                | -  | -            | 0.97        | 5.71        | 0.99        | 0.11        | 34.48      | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | -  | -            | 0.43        | 0.24        | 0.06        | 0.11        | 21.97      | -           | -           | -           | -          | -          | -          |
| MT-5B              | 12.1                | -  | -            | 0.91        | 6.88        | 0.46        | 0.13        | 29.16      | -           | -           | -           | -          | -          | -          |
| MT-7S              | 1.0                 | -  | 2073         | 0.19        | 0.13        | 0.04        | 0.16        | 9.69       | -           | 9.39        | 0.00        | 63.67      | 8.00       | 5.43       |
| MT-7B              | 16.7                | -  | -            | 0.78        | 7.23        | 1.01        | 0.24        | 15.50      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-18

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 9.00                   | 9.81            | -              | 85             | 0.974            | 1047.0            |
| MR-1B              | 13.6                | -                      | 1.79            | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 22.50                  | 14.59           | -              | 100            | -                | -                 |
| DR-1S              | 1.0                 | 7.50                   | 7.36            | 1.35           | 90             | -                | -                 |
| DR-3S              | 1.0                 | 5.00                   | 11.10           | 1.26           | 115            | 0.382            | 428.0             |
| DR-3B              | 13.6                | -                      | 2.45            | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 25.50                  | 22.46           | -              | 115            | -                | -                 |
| DR-5B              | 2.6                 | -                      | 13.56           | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 12.00                  | 10.97           | -              | 75             | 0.318            | 434.0             |
| DR-7B              | 2.0                 | -                      | 8.52            | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 16.00                  | 12.91           | 1.49           | 95             | -                | -                 |
| PC-3S              | 1.0                 | 8.50                   | 11.62           | 1.58           | 125            | 0.457            | 472.0             |
| PC-3B              | 13.3                | -                      | 3.37            | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 28.50                  | 9.81            | 1.54           | 75             | 0.675            | 674.0             |
| PC-5B              | 3.0                 | -                      | 8.13            | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 7.00                   | 4.52            | 1.25           | 120            | 0.365            | 482.0             |
| FR-3B              | 13.6                | -                      | 4.57            | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 11.00                  | 30.98           | 1.45           | 75             | -                | -                 |
| FR-5B              | 2.6                 | -                      | 7.49            | -              | -              | -                | -                 |
| WB-1S              | 1.0                 | 6.50                   | 29.56           | 1.53           | 100            | 0.961            | 820.0             |
| WB-3S              | 1.0                 | 10.00                  | 5.42            | 1.36           | 125            | 0.478            | 595.0             |
| WB-3B              | 12.7                | -                      | 12.26           | -              | -              | -                | -                 |
| WB-5S              | 1.0                 | 11.00                  | 5.16            | 1.40           | 125            | -                | -                 |
| WB-5B              | 3.0                 | -                      | 14.85           | -              | -              | -                | -                 |
| WB-7S              | 1.0                 | 9.50                   | 6.45            | 1.11           | 125            | 0.537            | 814.0             |
| CP-3S              | 1.0                 | 13.00                  | 6.33            | 1.45           | 125            | 0.663            | 644.0             |
| CP-3B              | 13.0                | -                      | 4.75            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 22.00                  | 4.39            | 1.19           | 100            | -                | -                 |

## MOBILE BAY CRUISE MB-18

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | SESTON CHLOR<br>(ug/l) | ATTEN<br>-(m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|------------------------|---------------|----------------|------------------|-------------------|
| FM-3S              | 1.0                 | 16.50                  | 4.61                   | 1.38          | 125            | 0.652            | 719.0             |
| FM-3B              | 13.3                | -                      | 3.77                   | -             | -              | -                | -                 |
| FM-5S              | 1.0                 | 14.50                  | 4.89                   | 0.83          | 150            | -                | -                 |
| FM-5B              | 3.6                 | -                      | 10.95                  | -             | -              | -                | -                 |
| FM-7S              | 1.0                 | 11.50                  | 4.52                   | 0.88          | 150            | 0.673            | 1152.0            |
| MS-1S              | 1.0                 | 24.50                  | 4.00                   | 0.75          | 115            | 0.606            | 1384.0            |
| MS-1B              | 3.2                 | -                      | 6.33                   | -             | -              | -                | -                 |
| MS-3S              | 1.0                 | 26.50                  | 5.41                   | 0.77          | 110            | -                | -                 |
| MS-5S              | 1.0                 | 13.00                  | 7.56                   | 1.09          | 80             | 0.623            | 998.0             |
| MS-5B              | 3.0                 | -                      | 8.00                   | -             | -              | -                | -                 |
| BS-1S              | 1.0                 | 19.50                  | 30.08                  | 1.09          | 75             | -                | -                 |
| BS-3S              | 1.0                 | 7.00                   | 6.48                   | 0.81          | 125            | 0.721            | 1303.0            |
| BS-3B              | 12.4                | -                      | 4.73                   | -             | -              | -                | -                 |
| BS-5S              | 1.0                 | 22.50                  | 6.97                   | 0.84          | 130            | -                | -                 |
| BS-7S              | 1.0                 | 8.00                   | 5.15                   | 0.97          | 115            | 0.565            | 929.0             |
| BS-7B              | 2.6                 | -                      | 10.33                  | -             | -              | -                | -                 |
| BS-9S              | 1.0                 | 21.50                  | 12.78                  | 1.13          | 90             | -                | -                 |
| BS-11S             | 1.0                 | 12.50                  | 10.48                  | 1.20          | 75             | 0.793            | 1076.0            |
| BS-11B             | 3.0                 | -                      | 11.36                  | -             | -              | -                | -                 |
| MT-1S              | 1.0                 | 14.50                  | 4.74                   | 0.79          | 135            | -                | -                 |
| MT-1B              | 14.2                | -                      | 4.60                   | -             | -              | -                | -                 |
| MT-3S              | 1.0                 | 26.50                  | 5.51                   | 0.52          | 175            | 0.014            | 46.0              |
| MT-3B              | 14.2                | -                      | 3.16                   | -             | -              | -                | -                 |
| MT-5S              | 1.0                 | 33.00                  | 4.16                   | 0.53          | 190            | -                | -                 |
| MT-5B              | 12.1                | -                      | 4.29                   | -             | -              | -                | -                 |
| MT-7S              | 1.0                 | 26.50                  | 2.76                   | 0.38          | 330            | 0.304            | 1411.0            |
| MT-7B              | 16.7                | -                      | 3.56                   | -             | -              | -                | -                 |

## **Mobile Bay Cruise Report**

**MB-19**

3, 4 October 1991

**Vessel:**

*R/V Deborah B.*

**Operation Area:**

- \* 3 October: Mobile Bay from Fort Morgan to Mobile River
- \* 4 October: Mississippi Sound to Bon Secour Bay following the Intracoastal Waterway, Bay Mouth following ship channel to Farewell Buoy

**Scientific Party:**

Felix Fernandez  
Laurie Sullivan  
Alan Gunter

**Supporting Agency:**

U.S. Geological Survey

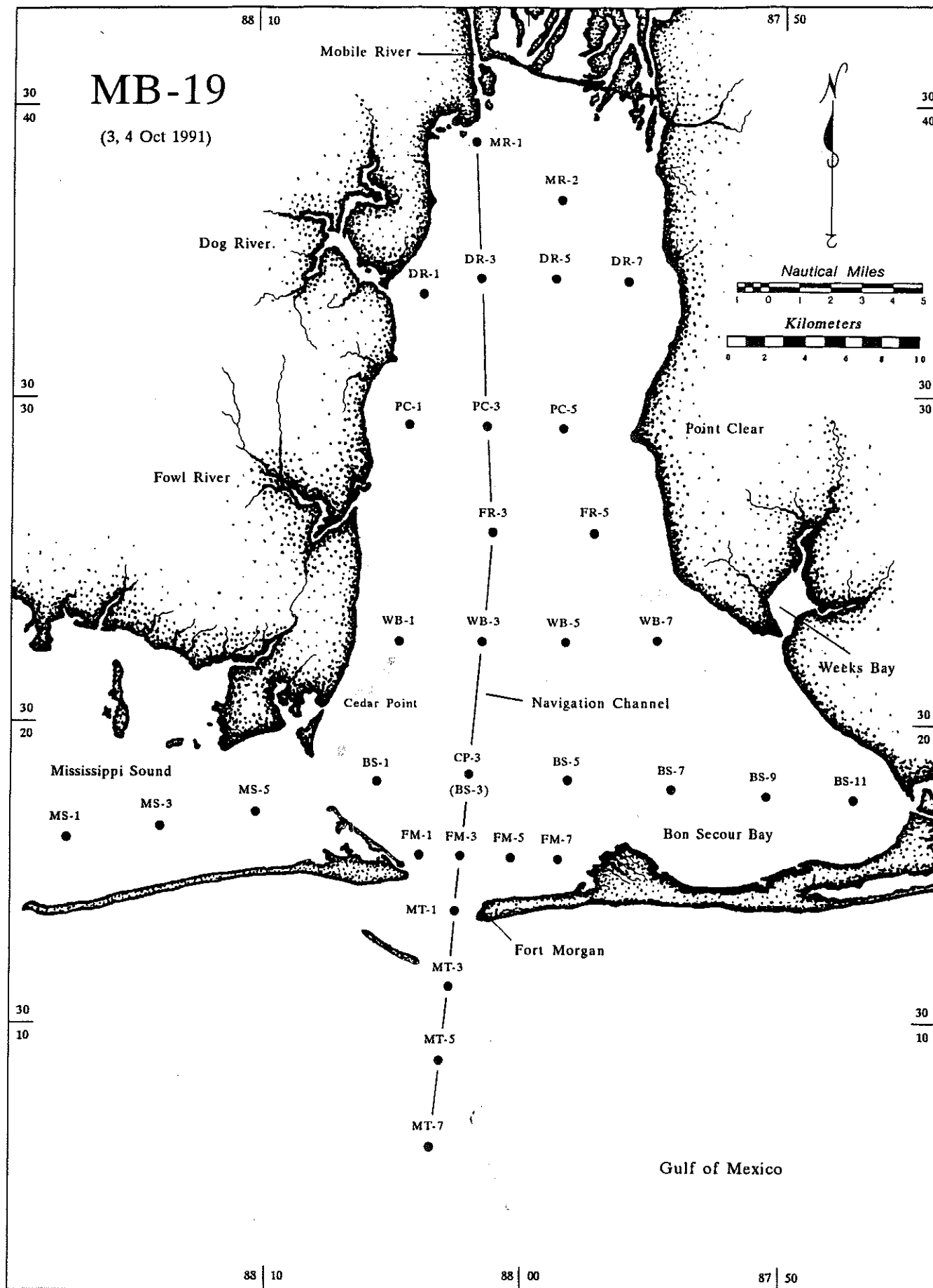
**Research Objectives:**

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 33 surface stations (22 of those including bottom water casts). Samples were taken for  $\text{TCO}_2$ , DOC, DON, DOP, POP, PC/PN, taxonomy identification and  $^{14}\text{C}$  productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station; no Licor readings after station DR-3 due to malfunction. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations.

**Cruise Summary:**

3 October: Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0710. Stations were continued going upbay through station MR-1. Returned to DISL 1430.

4 October: Departed DISL 0700. Deadheaded to station MS-1. Began sampling 0800. Stations were continued going east to station BS-11, then south to MT-7. Returned to DISL 1330.



## MOBILE BAY CRUISE MB-19

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LONG<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O <sub>2</sub><br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|-------------------|------------------|------------------|---------------------|-------------------|-------------|-------------------------|-------------|
| MR-1S              | 1.0                 | 10/3/91       | 1242          | 30 : 38.1        | 88 : 1.9          | 12780.5          | 47180.2          | 15.8                | 10.3              | 25.2        | 7.2                     | 93          |
| MR-1B              | 14.8                | 10/3/91       | 1242          | 30 : 38.1        | 88 : 1.9          | 12780.5          | 47180.2          | 15.8                | 27.9              | 24.4        | 5.3                     | 75          |
| MR-2S              | 1.0                 | 10/3/91       | 1221          | 30 : 36.4        | 87 : 58.6         | 12815.0          | 47175.5          | 4.0                 | 10.8              | 24.1        | 9.3                     | 118         |
| DR-1S              | 1.0                 | 10/3/91       | 1118          | 30 : 32.6        | 88 : 4.0          | 12755.7          | 47159.1          | 3.4                 | 9.1               | 23.9        | 8.3                     | 103         |
| DR-3S              | 1.0                 | 10/3/91       | 1133          | 30 : 34.1        | 88 : 1.7          | 12780.7          | 47165.6          | 14.9                | 11.3              | 24.5        | 8.9                     | 113         |
| DR-3B              | 13.9                | 10/3/91       | 1133          | 30 : 34.1        | 88 : 1.7          | 12780.7          | 47165.6          | 14.9                | 28.3              | 24.4        | 5.5                     | 77          |
| DR-5S              | 1.0                 | 10/3/91       | 1152          | 30 : 34.1        | 87 : 58.4         | 12814.8          | 47167.2          | 4.0                 | 15.9              | 23.4        | 8.3                     | 107         |
| DR-5B              | 3.0                 | 10/3/91       | 1152          | 30 : 34.1        | 87 : 58.4         | 12814.8          | 47167.2          | 4.0                 | 16.1              | 23.2        | 8.1                     | 104         |
| DR-7S              | 1.0                 | 10/3/91       | 1204          | 30 : 34.4        | 87 : 56.1         | 12840.0          | 47169.3          | 3.4                 | 14.9              | 24.0        | 7.8                     | 101         |
| DR-7B              | 2.4                 | 10/3/91       | 1204          | 30 : 34.4        | 87 : 56.1         | 12840.0          | 47169.3          | 3.4                 | 15.6              | 22.7        | 6.8                     | 87          |
| PC-1S              | 1.0                 | 10/3/91       | 1058          | 30 : 28.7        | 88 : 3.9          | 12753.6          | 47144.5          | 3.0                 | 9.8               | 23.7        | 8.7                     | 109         |
| PC-3S              | 1.0                 | 10/3/91       | 1041          | 30 : 28.8        | 88 : 1.1          | 12783.3          | 47145.8          | 12.0                | 11.9              | 24.0        | 8.9                     | 113         |
| PC-3B              | 11.0                | 10/3/91       | 1041          | 30 : 28.8        | 88 : 1.1          | 12783.3          | 47145.8          | 12.0                | 28.5              | 24.3        | 6.0                     | 84          |
| PC-5S              | 1.0                 | 10/3/91       | 1025          | 30 : 28.3        | 87 : 58.0         | 12815.5          | 47145.0          | 3.0                 | 14.1              | 23.3        | 8.9                     | 113         |
| PC-5B              | 2.0                 | 10/3/91       | 1025          | 30 : 28.3        | 87 : 58.0         | 12815.5          | 47145.0          | 3.0                 | 17.0              | 23.1        | 7.9                     | 102         |
| FR-3S              | 1.0                 | 10/3/91       | 1002          | 30 : 25.4        | 88 : 1.0          | 12784.1          | 47132.5          | 14.5                | 13.3              | 23.2        | 9.3                     | 118         |
| FR-3B              | 13.5                | 10/3/91       | 1002          | 30 : 25.4        | 88 : 1.0          | 12784.1          | 47132.5          | 14.5                | 28.1              | 24.0        | 6.2                     | 87          |
| FR-5S              | 1.0                 | 10/3/91       | 942           | 30 : 25.0        | 87 : 56.9         | 12825.1          | 47132.1          | 3.5                 | 18.1              | 23.1        | 8.5                     | 110         |
| FR-5B              | 2.5                 | 10/3/91       | 942           | 30 : 25.0        | 87 : 56.9         | 12825.1          | 47132.1          | 3.5                 | 18.7              | 23.1        | 8.5                     | 111         |
| WB-1S              | 1.0                 | 10/3/91       | 837           | 30 : 22.7        | 88 : 4.4          | 12745.1          | 47120.5          | 3.5                 | 14.1              | 23.4        | 8.9                     | 114         |
| WB-3S              | 1.0                 | 10/3/91       | 853           | 30 : 22.5        | 88 : 1.3          | 12777.8          | 47120.8          | 14.0                | 14.9              | 23.0        | 8.9                     | 113         |
| WB-3B              | 13.0                | 10/3/91       | 853           | 30 : 22.5        | 88 : 1.3          | 12777.8          | 47120.8          | 14.0                | 28.2              | 24.4        | 6.5                     | 91          |
| WB-5S              | 1.0                 | 10/3/91       | 911           | 30 : 22.6        | 87 : 58.1         | 12810.5          | 47122.0          | 3.5                 | 16.9              | 22.8        | 8.3                     | 107         |
| WB-5B              | 2.5                 | 10/3/91       | 911           | 30 : 22.6        | 87 : 58.1         | 12810.5          | 47122.0          | 3.5                 | 22.8              | 23.2        | 7.1                     | 95          |
| WB-7S              | 1.0                 | 10/3/91       | 927           | 30 : 22.6        | 87 : 55.3         | 12840.4          | 47122.8          | 3.0                 | 19.0              | 23.2        | 8.5                     | 111         |
| CP-3S              | 1.0                 | 10/3/91       | 809           | 30 : 18.2        | 88 : 1.9          | 12768.5          | 47103.0          | 15.0                | 20.1              | 23.0        | 8.4                     | 110         |
| CP-3B              | 14.0                | 10/3/91       | 809           | 30 : 18.2        | 88 : 1.9          | 12768.5          | 47103.0          | 15.0                | 27.9              | 24.4        | 7.1                     | 100         |
| FM-1S              | 1.0                 | 10/3/91       | 712           | 30 : 15.7        | 88 : 3.6          | 12749.0          | 47092.0          | 4.7                 | 21.3              | 23.5        | 8.2                     | 109         |



## MOBILE BAY CRUISE MB-19

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3S              | 1.0                 | 10/3/91       | 723           | 30         | 15.5       | 88          | 2.3         | 12762.6          | 47091.5          | 14.0                | 27.6              | 24.1        | 6.8         | 94          |
| FM-3B              | 13.0                | 10/3/91       | 723           | 30         | 15.5       | 88          | 2.3         | 12762.6          | 47091.5          | 14.0                | 29.5              | 24.6        | 6.6         | 94          |
| FM-5S              | 1.0                 | 10/3/91       | 736           | 30         | 15.6       | 88          | 1.0         | 12778.6          | 47092.1          | 4.5                 | 28.1              | 24.0        | 7.0         | 97          |
| FM-5B              | 3.5                 | 10/3/91       | 736           | 30         | 15.6       | 88          | 1.0         | 12778.6          | 47092.1          | 4.5                 | 29.3              | 24.6        | 6.5         | 92          |
| FM-7S              | 1.0                 | 10/3/91       | 749           | 30         | 15.5       | 87          | 58.9        | 12797.5          | 47092.1          | 4.0                 | 25.7              | 23.5        | 7.5         | 103         |
| MS-1S              | 1.0                 | 10/4/91       | 800           | 30         | 15.3       | 88          | 18.4        | 12595.5          | 47087.8          | 4.6                 | 27.8              | 24.7        | 6.9         | 98          |
| MS-1B              | 3.6                 | 10/4/91       | 800           | 30         | 15.3       | 88          | 18.4        | 12595.5          | 47087.8          | 4.6                 | 28.9              | 24.9        | 6.9         | 98          |
| MS-3S              | 1.0                 | 10/4/91       | 819           | 30         | 15.6       | 88          | 14.4        | 12637.2          | 47089.8          | 3.6                 | 24.9              | 24.3        | 7.3         | 101         |
| MS-5S              | 1.0                 | 10/4/91       | 837           | 30         | 16.2       | 88          | 10.3        | 12680.4          | 47092.7          | 4.6                 | 19.6              | 24.2        | 7.6         | 101         |
| MS-5B              | 3.6                 | 10/4/91       | 837           | 30         | 16.2       | 88          | 10.3        | 12680.4          | 47092.7          | 4.6                 | 24.7              | 24.4        | 6.0         | 83          |
| BS-1S              | 1.0                 | 10/4/91       | 858           | 30         | 16.9       | 88          | 5.8         | 12727.5          | 47096.6          | 4.0                 | 19.7              | 24.2        | 7.9         | 105         |
| BS-3S              | 1.0                 | 10/4/91       | 914           | 30         | 17.2       | 88          | 2.1         | 12765.9          | 47098.5          | 15.5                | 25.0              | 24.3        | 7.5         | 103         |
| BS-3B              | 14.5                | 10/4/91       | 914           | 30         | 17.2       | 88          | 2.1         | 12765.9          | 47098.5          | 15.5                | 29.7              | 25.0        | 6.5         | 93          |
| BS-5S              | 1.0                 | 10/4/91       | 932           | 30         | 17.0       | 87          | 58.3        | 12805.1          | 47098.6          | 4.0                 | 23.0              | 24.0        | 7.3         | 98          |
| BS-7S              | 1.0                 | 10/4/91       | 947           | 30         | 16.8       | 87          | 54.9        | 12840.0          | 47098.2          | 4.2                 | 20.2              | 24.0        | 8.0         | 106         |
| BS-7B              | 3.2                 | 10/4/91       | 947           | 30         | 16.8       | 87          | 54.9        | 12840.0          | 47098.2          | 4.2                 | 25.0              | 24.2        | 6.7         | 92          |
| BS-9S              | 1.0                 | 10/4/91       | 1005          | 30         | 16.7       | 87          | 51.0        | 12880.3          | 47098.8          | 4.2                 | 19.5              | 24.2        | 8.0         | 106         |
| BS-11S             | 1.0                 | 10/4/91       | 1020          | 30         | 16.7       | 87          | 47.8        | 12913.4          | 47099.4          | 4.0                 | 19.1              | 24.4        | 8.4         | 112         |
| BS-11B             | 3.0                 | 10/4/91       | 1020          | 30         | 16.7       | 87          | 47.8        | 12913.4          | 47099.4          | 4.0                 | 19.1              | 24.1        | 8.3         | 110         |
| MT-1S              | 1.0                 | 10/4/91       | 1112          | 30         | 13.9       | 88          | 2.3         | 12762.2          | 47084.5          | 13.4                | 27.4              | 25.1        | 6.9         | 98          |
| MT-1B              | 12.4                | 10/4/91       | 1112          | 30         | 13.9       | 88          | 2.3         | 12762.2          | 47084.5          | 13.4                | 30.0              | 25.1        | 6.6         | 95          |
| MT-3S              | 1.0                 | 10/4/91       | 1127          | 30         | 11.8       | 88          | 2.6         | 12757.4          | 47075.5          | 15.5                | 29.8              | 25.4        | 6.7         | 97          |
| MT-3B              | 14.5                | 10/4/91       | 1127          | 30         | 11.8       | 88          | 2.6         | 12757.4          | 47075.5          | 15.5                | 30.3              | 25.1        | 6.2         | 90          |
| MT-5S              | 1.0                 | 10/4/91       | 1148          | 30         | 9.5        | 88          | 3.2         | 12750.0          | 47065.7          | 15.5                | 30.4              | 25.5        | 6.7         | 97          |
| MT-5B              | 14.5                | 10/4/91       | 1148          | 30         | 9.5        | 88          | 3.2         | 12750.0          | 47065.7          | 15.5                | 30.4              | 25.2        | 6.7         | 97          |
| MT-7S              | 1.0                 | 10/4/91       | 1203          | 30         | 7.3        | 88          | 4.1         | 12739.6          | 47055.9          | 18.0                | 30.8              | 25.9        | 6.8         | 99          |
| MT-7B              | 17.0                | 10/4/91       | 1203          | 30         | 7.3        | 88          | 4.1         | 12739.6          | 47055.9          | 18.0                | 31.2              | 25.7        | 6.5         | 96          |

## MOBILE BAY CRUISE MB-19

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 7.8 | 1403         | 0.61        | 2.38        | 0.39        | 5.17        | 33.09      | 327         | 21.60       | 0.21        | 70.67      | 7.71       | 0.60       |
| MR-1B              | 14.8                | 8.1 | -            | 0.45        | 0.97        | 0.09        | 3.59        | 10.72      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 8.2 | -            | 0.28        | 0.92        | 0.03        | 0.45        | 44.89      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 7.8 | -            | 0.65        | 4.84        | 0.44        | 4.58        | 55.92      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 8.1 | 1366         | 0.22        | 1.02        | 0.06        | 0.66        | 45.03      | 256         | 13.83       | 0.54        | 100.58     | 14.21      | 0.72       |
| DR-3B              | 13.9                | 8.1 | -            | 0.63        | 1.07        | 0.12        | 5.05        | 12.41      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 8.1 | -            | 0.51        | 0.99        | 0.05        | 0.50        | 26.98      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 3.0                 | 8.1 | -            | 0.48        | 0.98        | 0.06        | 0.50        | 22.40      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 8.0 | 1498         | 0.41        | 0.92        | 0.06        | 0.41        | 30.73      | 301         | 13.97       | 0.63        | 91.92      | 13.14      | 0.63       |
| DR-7B              | 2.4                 | 7.9 | -            | 0.34        | 0.92        | 0.05        | 1.36        | 27.36      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 8.0 | -            | 0.33        | 2.85        | 0.34        | 2.96        | 40.34      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 8.1 | 1390         | 0.13        | 0.98        | 0.04        | 0.71        | 36.65      | 311         | 16.20       | 0.59        | 87.75      | 12.86      | 0.58       |
| PC-3B              | 11.0                | 8.1 | -            | 0.29        | 0.96        | 0.09        | 2.79        | 7.76       | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 8.2 | 1459         | 0.21        | 0.92        | 0.09        | 0.78        | 30.05      | 290         | 14.95       | 0.78        | 79.33      | 10.43      | 0.52       |
| PC-5B              | 2.0                 | 8.1 | -            | 0.31        | 0.95        | 0.03        | 0.65        | 19.06      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 8.2 | 1423         | 0.10        | 1.02        | 0.06        | 2.18        | 15.77      | 306         | 13.64       | 0.59        | 78.58      | 10.98      | 0.53       |
| FR-3B              | 13.5                | 8.1 | -            | 0.41        | 0.97        | 0.10        | 3.83        | 9.54       | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 8.2 | -            | 0.43        | 1.07        | 0.05        | 0.36        | 13.12      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.5                 | 8.2 | -            | 0.36        | 0.96        | 0.04        | 0.36        | 15.17      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | 8.2 | 1426         | 0.22        | 0.93        | 0.05        | 0.67        | 26.84      | 318         | 16.30       | 0.40        | 72.33      | 11.21      | 0.41       |
| WB-3S              | 1.0                 | 8.2 | 1472         | 0.34        | 0.98        | 0.07        | 0.36        | 29.89      | 310         | 11.17       | 0.83        | 51.21      | 7.80       | 0.38       |
| WB-3B              | 13.0                | 8.1 | -            | 0.26        | 1.12        | 0.08        | 1.85        | 8.78       | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | 8.2 | -            | 0.36        | 0.90        | 0.07        | 0.47        | 22.67      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.5                 | 8.1 | -            | 0.24        | 1.07        | 0.06        | 0.45        | 11.83      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | 8.2 | 1581         | 0.24        | 0.95        | 0.05        | 0.45        | 12.29      | 264         | 12.22       | 0.59        | 53.58      | 6.50       | 0.35       |
| CP-3S              | 1.0                 | 8.2 | 1632         | 0.39        | 1.08        | 0.07        | 0.43        | 21.23      | 261         | 11.70       | 0.25        | 60.17      | 9.71       | 0.39       |
| CP-3B              | 14.0                | 8.1 | -            | 0.13        | 1.05        | 0.05        | 0.57        | 6.96       | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 8.1 | -            | 0.36        | 1.08        | 0.09        | 0.68        | 13.11      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-19

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | 8.1 | 1919         | 0.15        | 0.91        | 0.08        | 0.87        | 5.83       | 343         | 8.61        | 0.92        | 62.33      | 10.88      | 0.31       |
| FM-3B              | 13.0                | 8.1 | -            | 0.14        | 1.11        | 0.09        | 0.73        | 6.52       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.2 | -            | 0.13        | 1.06        | 0.07        | 0.43        | 10.05      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.5                 | 8.2 | -            | 0.13        | 1.07        | 0.11        | 0.90        | 6.93       | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 8.2 | 1859         | 0.07        | 0.94        | 0.07        | 0.62        | 7.14       | 328         | 10.80       | 0.68        | 70.08      | 11.64      | 0.49       |
| MS-1S              | 1.0                 | 8.1 | 1922         | 0.22        | 0.13        | 0.08        | 0.58        | 7.84       | 188         | 11.06       | 0.21        | 53.78      | 6.95       | 0.29       |
| MS-1B              | 3.6                 | 8.0 | -            | 0.18        | 0.09        | 0.05        | 0.35        | 4.99       | -           | -           | -           | -          | -          | -          |
| MS-3S              | 1.0                 | 8.1 | -            | 0.30        | 0.14        | 0.04        | 0.08        | 15.52      | -           | -           | -           | -          | -          | -          |
| MS-5S              | 1.0                 | 8.0 | 1625         | 0.41        | 0.15        | 0.09        | 0.38        | 22.07      | 248         | 11.60       | 0.49        | 55.58      | 10.07      | 0.36       |
| MS-5B              | 3.6                 | 8.0 | -            | 0.65        | 0.18        | 0.16        | 2.87        | 23.40      | -           | -           | -           | -          | -          | -          |
| BS-1S              | 1.0                 | 8.1 | -            | 0.35        | 0.17        | 0.05        | 0.11        | 19.14      | -           | -           | -           | -          | -          | -          |
| BS-3S              | 1.0                 | 8.1 | 1829         | 0.25        | 0.12        | 0.08        | 0.67        | 8.87       | 214         | 10.59       | 0.44        | 71.21      | 10.18      | 0.52       |
| BS-3B              | 14.5                | 8.1 | -            | 0.19        | 0.38        | 0.08        | 1.52        | 6.84       | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | 8.1 | -            | 0.22        | 0.15        | 0.05        | 0.11        | 19.02      | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | 8.1 | 1621         | 0.22        | 0.21        | 0.08        | 0.65        | 25.38      | 340         | 14.70       | 0.30        | 144.06     | 19.14      | 1.08       |
| BS-7B              | 3.2                 | 8.0 | -            | 0.39        | 0.16        | 0.09        | 0.43        | 14.85      | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | 8.2 | -            | 0.27        | 0.18        | 0.07        | 0.55        | 10.69      | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | 8.2 | 1590         | 0.06        | 0.15        | 0.09        | 0.28        | 2.39       | 284         | 13.29       | 0.35        | 172.00     | 34.73      | 0.99       |
| BS-11B             | 3.0                 | 7.9 | -            | 0.18        | 0.42        | 0.09        | 1.08        | 20.93      | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | 8.1 | -            | 0.33        | 0.23        | 0.11        | 0.43        | 7.31       | -           | -           | -           | -          | -          | -          |
| MT-1B              | 12.4                | 8.2 | -            | 0.09        | 0.20        | 0.09        | 0.21        | 4.91       | -           | -           | -           | -          | -          | -          |
| MT-3S              | 1.0                 | 8.1 | 1971         | 0.06        | 0.15        | 0.09        | 0.15        | 3.86       | 180         | 9.57        | 0.40        | 31.74      | 4.11       | 0.30       |
| MT-3B              | 14.5                | 8.1 | -            | 0.30        | 0.34        | 0.11        | 3.31        | 3.12       | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | 8.1 | -            | 0.04        | 0.18        | 0.07        | 0.35        | 2.46       | -           | -           | -           | -          | -          | -          |
| MT-5B              | 14.5                | 8.2 | -            | 0.20        | 0.28        | 0.06        | 0.97        | 20.20      | -           | -           | -           | -          | -          | -          |
| MT-7S              | 1.0                 | 8.1 | 2019         | 0.02        | 0.17        | 0.06        | 0.27        | 1.52       | 146         | -           | 0.30        | 20.48      | 4.38       | 0.24       |
| MT-7B              | 17.0                | 8.1 | -            | 0.02        | 0.19        | 0.07        | 0.10        | 0.92       | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-19

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 36.38                  | 4.29           | 1.00           | 125              | 0.810             |
| MR-1B              | 14.8                | -                      | 2.47           | -              | -                | -                 |
| MR-2S              | 1.0                 | 15.50                  | 13.94          | 1.14           | 130              | -                 |
| DR-1S              | 1.0                 | 2.79                   | 3.81           | 0.95           | 175              | -                 |
| DR-3S              | 1.0                 | 4.70                   | 10.46          | 0.96           | 140              | 0.881             |
| DR-3B              | 13.9                | -                      | 2.89           | -              | -                | -                 |
| DR-5S              | 1.0                 | 16.30                  | 4.56           | 1.31           | 175              | -                 |
| DR-5B              | 3.0                 | -                      | 5.42           | -              | -                | -                 |
| DR-7S              | 1.0                 | 11.50                  | 4.76           | 0.71           | 130              | 0.668             |
| DR-7B              | 2.4                 | -                      | 11.49          | -              | -                | -                 |
| PC-1S              | 1.0                 | -                      | 10.46          | 0.99           | 160              | -                 |
| PC-3S              | 1.0                 | 5.10                   | 8.39           | 1.34           | 160              | 0.679             |
| PC-3B              | 11.0                | -                      | 2.81           | -              | -                | -                 |
| PC-5S              | 1.0                 | 17.10                  | 5.01           | 0.85           | 175              | 0.448             |
| PC-5B              | 2.0                 | -                      | 5.47           | -              | -                | -                 |
| FR-3S              | 1.0                 | 12.70                  | 5.42           | 0.81           | 175              | 0.428             |
| FR-3B              | 13.5                | -                      | 4.74           | -              | -                | -                 |
| FR-5S              | 1.0                 | 13.64                  | 9.30           | 0.68           | 210              | -                 |
| FR-5B              | 2.5                 | -                      | 6.29           | -              | -                | -                 |
| WB-1S              | 1.0                 | 9.69                   | 2.47           | 0.80           | 175              | 0.321             |
| WB-3S              | 1.0                 | 7.10                   | 2.47           | 0.74           | 190              | 0.314             |
| WB-3B              | 13.0                | -                      | 3.64           | -              | -                | -                 |
| WB-5S              | 1.0                 | 11.19                  | 3.16           | 0.62           | 195              | -                 |
| WB-5B              | 2.5                 | -                      | 4.78           | -              | -                | -                 |
| WB-7S              | 1.0                 | 9.94                   | 2.44           | 0.58           | 220              | 0.333             |
| CP-3S              | 1.0                 | 4.94                   | -              | 0.50           | 170              | 0.282             |
| CP-3B              | 14.0                | -                      | 1.68           | -              | -                | -                 |
| FM-1S              | 1.0                 | 12.19                  | -              | 0.62           | 180              | -                 |

## MOBILE BAY CRUISE MB-19

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| FM-3S              | 1.0                 | 7.19                   | 2.32            | 0.55           | 170            | 0.472            | 1735.0            |
| FM-3B              | 13.0                | -                      | 2.26            | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 12.69                  | 1.34            | 0.46           | 190            | -                | -                 |
| FM-5B              | 3.5                 | -                      | 1.47            | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 13.69                  | 1.99            | 0.51           | 170            | 0.502            | 1881.0            |
| MS-1S              | 1.0                 | 12.25                  | 1.56            | 0.99           | 250            | 0.271            | 367.0             |
| MS-1B              | 3.6                 | -                      | 2.80            | -              | -              | -                | -                 |
| MS-3S              | 1.0                 | 11.71                  | 2.71            | 1.16           | 210            | -                | -                 |
| MS-5S              | 1.0                 | 9.43                   | 3.10            | 1.05           | 150            | 0.484            | 584.0             |
| MS-5B              | 3.6                 | -                      | 4.65            | -              | -              | -                | -                 |
| BS-1S              | 1.0                 | 23.00                  | 1.52            | 1.08           | 200            | -                | -                 |
| BS-3S              | 1.0                 | 7.43                   | -               | 0.89           | 175            | 0.330            | 643.0             |
| BS-3B              | 14.5                | -                      | 1.63            | -              | -              | -                | -                 |
| BS-5S              | 1.0                 | 16.57                  | 4.52            | 1.21           | 100            | -                | -                 |
| BS-7S              | 1.0                 | 13.60                  | 6.63            | 1.92           | 100            | 0.585            | 482.0             |
| BS-7B              | 3.2                 | -                      | 5.51            | -              | -              | -                | -                 |
| BS-9S              | 1.0                 | 12.86                  | 3.47            | 1.38           | 175            | -                | -                 |
| BS-11S             | 1.0                 | -                      | 7.66            | 1.38           | 125            | 0.566            | 697.0             |
| BS-11B             | 3.0                 | -                      | 6.63            | -              | -              | -                | -                 |
| MT-1S              | 1.0                 | 13.71                  | 3.20            | 0.58           | 210            | -                | -                 |
| MT-1B              | 12.4                | -                      | 1.22            | -              | -              | -                | -                 |
| MT-3S              | 1.0                 | 15.43                  | 1.70            | 0.38           | 400            | 0.158            | 640.0             |
| MT-3B              | 14.5                | -                      | 3.81            | -              | -              | -                | -                 |
| MT-5S              | 1.0                 | 13.25                  | 0.76            | 0.35           | 500            | -                | -                 |
| MT-5B              | 14.5                | -                      | 1.21            | -              | -              | -                | -                 |
| MT-7S              | 1.0                 | 14.50                  | 0.46            | 0.32           | 550            | 0.109            | 453.0             |
| MT-7B              | 17.0                | -                      | 1.46            | -              | -              | -                | -                 |

## ***Mobile Bay Cruise Report***

***MB-20***

6, 7 November 1991

***Vessel:*** *R/V Deborah B.*

***Operation Area:***

- \* 6 November: Mobile Bay from Fort Morgan to Mobile River
- \* 7 November: Mississippi Sound to Bon Secour Bay following the Intracoastal Waterway, Bay Mouth following ship channel to Farewell Buoy

***Scientific Party:***

Beth Gaza (Chief Scientist)  
Alan Gunter  
Laurie Sullivan

***Supporting Agency:*** U.S. Geological Survey

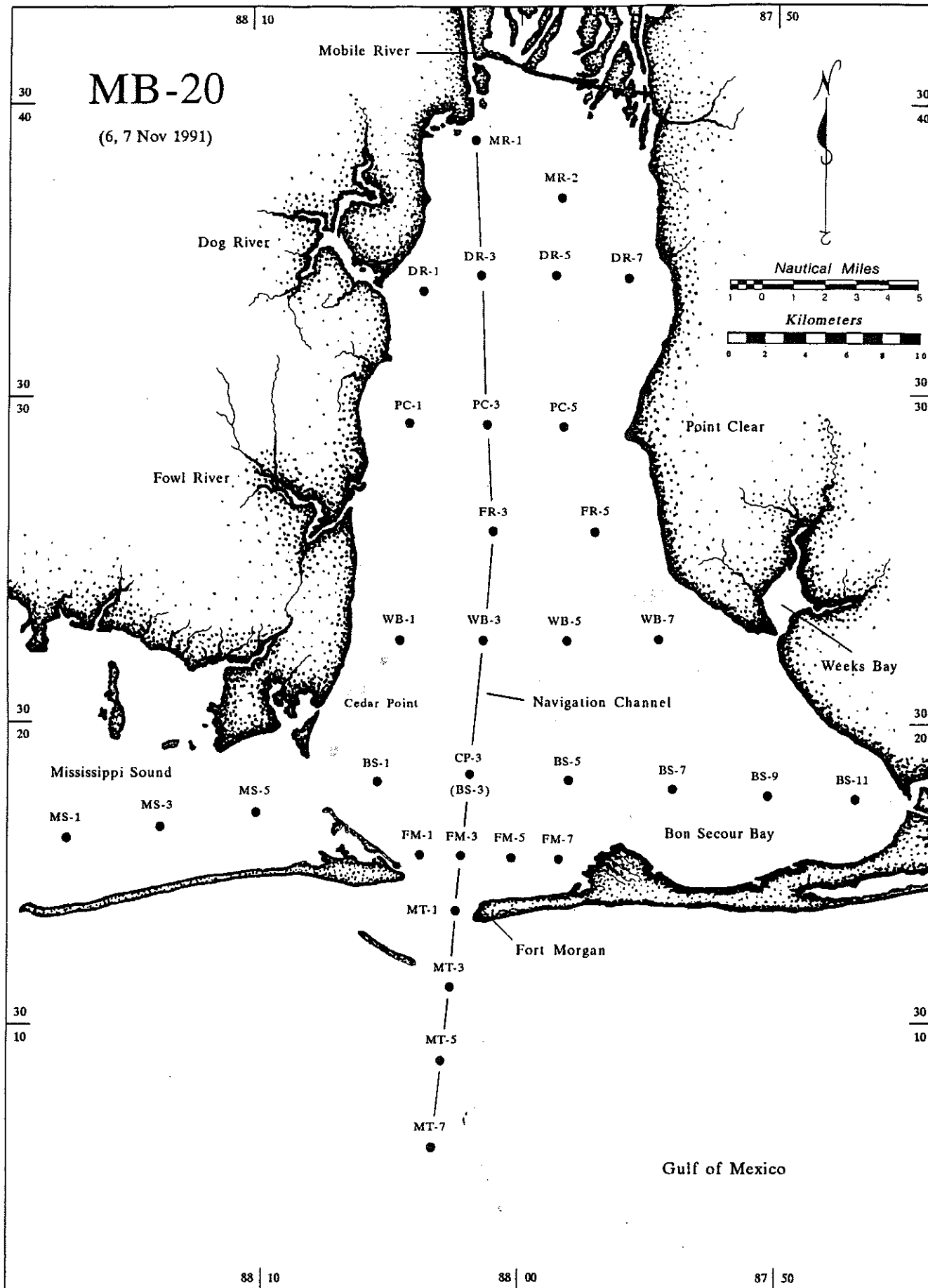
***Research Objectives:***

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 33 surface stations (22 of those including bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations; on 6 November casts for WB-3, WB-5, WB-7 were lost due to malfunction.

***Cruise Summary:***

6 November: Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0715. Stations were continued going upbay through station MR-1. Returned to DISL 1430.

7 November: Departed DISL 0700. Deadheaded to station MS-1. Began sampling 0750. Stations were continued going east to station BS-11, then south to MT-7. Returned to DISL 1300.



## MOBILE BAY CRUISE MB-20

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 11/6/91       | 1308          | 30         | 38.3       | 88          | 1.9         | 12780.6          | 47180.9          | 14.6                | 14.2              | 18.1        | -           | -           |
| MR-1B              | 13.6                | 11/6/91       | 1308          | 30         | 38.3       | 88          | 1.9         | 12780.6          | 47180.9          | 14.6                | 27.7              | 17.8        | -           | -           |
| MR-2S              | 1.0                 | 11/6/91       | 1244          | 30         | 36.3       | 87          | 58.6        | 12814.8          | 47175.3          | 3.0                 | 7.7               | 13.9        | -           | -           |
| DR-1S              | 1.0                 | 11/6/91       | 1139          | 30         | 32.5       | 88          | 4.0         | 12755.5          | 47158.9          | 2.4                 | 11.6              | 12.4        | -           | -           |
| DR-3S              | 1.0                 | 11/6/91       | 1155          | 30         | 34.2       | 88          | 1.7         | 12780.6          | 47165.9          | 14.6                | 12.5              | 14.7        | -           | -           |
| DR-3B              | 13.6                | 11/6/91       | 1155          | 30         | 34.2       | 88          | 1.7         | 12780.6          | 47165.9          | 14.6                | 28.2              | 17.4        | -           | -           |
| DR-5S              | 1.0                 | 11/6/91       | 1213          | 30         | 34.1       | 87          | 58.5        | 12814.5          | 47167.1          | 3.0                 | 9.7               | 12.6        | -           | -           |
| DR-5B              | 2.0                 | 11/6/91       | 1213          | 30         | 34.1       | 87          | 58.5        | 12814.5          | 47167.1          | 3.0                 | 15.5              | 13.9        | -           | -           |
| DR-7S              | 1.0                 | 11/6/91       | 1227          | 30         | 34.4       | 87          | 56.1        | 12840.2          | 47169.2          | 2.7                 | 12.1              | 13.7        | -           | -           |
| DR-7B              | 1.7                 | 11/6/91       | 1227          | 30         | 34.4       | 87          | 56.1        | 12840.2          | 47169.2          | 2.7                 | 14.4              | 13.9        | -           | -           |
| PC-1S              | 1.0                 | 11/6/91       | 1121          | 30         | 29.0       | 88          | 4.0         | 12753.1          | 47145.6          | 3.0                 | 14.6              | 12.6        | -           | -           |
| PC-3S              | 1.0                 | 11/6/91       | 1107          | 30         | 28.6       | 88          | 1.1         | 12783.5          | 47145.1          | 14.9                | 11.6              | 12.0        | -           | -           |
| PC-3B              | 13.9                | 11/6/91       | 1107          | 30         | 28.6       | 88          | 1.1         | 12783.5          | 47145.1          | 14.9                | 29.8              | 17.5        | -           | -           |
| PC-5S              | 1.0                 | 11/6/91       | 1041          | 30         | 28.3       | 87          | 58.0        | 12815.6          | 47145.0          | 3.4                 | 14.8              | 13.4        | -           | -           |
| PC-5B              | 2.4                 | 11/6/91       | 1041          | 30         | 28.3       | 87          | 58.0        | 12815.6          | 47145.0          | 3.4                 | 16.9              | 13.4        | -           | -           |
| FR-3S              | 1.0                 | 11/6/91       | 1017          | 30         | 25.2       | 88          | 0.8         | 12783.9          | 47131.8          | 1.0                 | 14.5              | 12.6        | -           | -           |
| FR-3B              | 13.9                | 11/6/91       | 1017          | 30         | 25.2       | 88          | 0.8         | 12783.9          | 47131.8          | 14.9                | 29.9              | 17.6        | -           | -           |
| FR-5S              | 1.0                 | 11/6/91       | 959           | 30         | 25.2       | 87          | 56.9        | 12825.5          | 47132.8          | 3.4                 | 16.0              | 13.1        | -           | -           |
| FR-5B              | 2.4                 | 11/6/91       | 959           | 30         | 25.2       | 87          | 56.9        | 12825.5          | 47132.8          | 3.4                 | 16.5              | 13.0        | -           | -           |
| WB-1S              | 1.0                 | 11/6/91       | 850           | 30         | 22.6       | 88          | 3.9         | 12750.6          | 47120.3          | 3.6                 | 17.3              | 12.1        | -           | -           |
| WB-3S              | 1.0                 | 11/6/91       | 907           | 30         | 22.5       | 88          | 1.2         | 12778.2          | 47120.8          | 7.6                 | 16.3              | 11.8        | -           | -           |
| WB-3B              | 6.6                 | 11/6/91       | 907           | 30         | 22.5       | 88          | 1.2         | 12778.2          | 47120.8          | 7.6                 | 26.2              | 15.6        | -           | -           |
| WB-5S              | 1.0                 | 11/6/91       | 926           | 30         | 22.7       | 87          | 58.2        | 12810.3          | 47122.5          | 3.4                 | 16.1              | 12.1        | -           | -           |
| WB-5B              | 2.4                 | 11/6/91       | 926           | 30         | 22.7       | 87          | 58.2        | 12810.3          | 47122.5          | 3.4                 | 17.1              | 12.6        | -           | -           |
| WB-7S              | 1.0                 | 11/6/91       | 942           | 30         | 22.7       | 87          | 55.3        | 12840.2          | 47123.0          | 3.0                 | 19.5              | 12.9        | -           | -           |
| CP-3S              | 1.0                 | 11/6/91       | 823           | 30         | 18.4       | 88          | 1.9         | 12769.0          | 47103.9          | 9.8                 | 18.4              | 12.2        | -           | -           |
| CP-3B              | 8.8                 | 11/6/91       | 823           | 30         | 18.4       | 88          | 1.9         | 12769.0          | 47103.9          | 9.8                 | 29.6              | 17.1        | -           | -           |
| FM-1S              | 1.0                 | 11/6/91       | 715           | 30         | 15.7       | 88          | 3.7         | 12748.4          | 47092.2          | 4.8                 | 21.6              | 12.8        | -           | -           |



## MOBILE BAY CRUISE MB-20

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LONG<br>DEG : MIN | LORANW<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|-------------------|-----------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3S              | 1.0                 | 11/6/91       | 730           | 30 : 15.5        | 88 : 2.3          | 12762.5         | 47091.5          | 14.3                | 20.6              | 12.8        | -           | -           |
| FM-3B              | 13.3                | 11/6/91       | 730           | 30 : 15.5        | 88 : 2.3          | 12762.5         | 47091.5          | 14.3                | 29.9              | 16.9        | -           | -           |
| FM-5S              | 1.0                 | 11/6/91       | 747           | 30 : 15.6        | 88 : 0.7          | 12778.9         | 47092.3          | 4.2                 | 21.4              | 12.4        | -           | -           |
| FM-5B              | 3.2                 | 11/6/91       | 747           | 30 : 15.6        | 88 : 0.7          | 12778.9         | 47092.3          | 4.2                 | 26.9              | 15.7        | -           | -           |
| FM-7S              | 1.0                 | 11/6/91       | 801           | 30 : 15.5        | 87 : 58.9         | 12798.1         | 47091.9          | 4.0                 | 22.2              | 12.0        | -           | -           |
| MS-1S              | 1.0                 | 11/7/91       | 754           | 30 : 15.2        | 88 : 18.4         | 12595.4         | 47087.5          | 2.1                 | 28.4              | 13.3        | -           | -           |
| MS-1B              | 1.1                 | 11/7/91       | 754           | 30 : 15.2        | 88 : 18.4         | 12595.4         | 47087.5          | 2.1                 | 28.5              | 13.3        | -           | -           |
| MS-3S              | 1.0                 | 11/7/91       | 816           | 30 : 15.6        | 88 : 14.4         | 12637.2         | 47089.6          | 3.0                 | 26.0              | 11.9        | -           | -           |
| MS-5S              | 1.0                 | 11/7/91       | 833           | 30 : 16.2        | 88 : 10.3         | 12680.4         | 47093.1          | 2.1                 | 23.0              | 11.7        | -           | -           |
| MS-5B              | 1.1                 | 11/7/91       | 833           | 30 : 16.2        | 88 : 10.3         | 12680.4         | 47093.1          | 2.1                 | 23.0              | 11.7        | -           | -           |
| BS-1S              | 1.0                 | 11/7/91       | 900           | 30 : 16.9        | 88 : 5.8          | 12727.4         | 47096.6          | 3.6                 | 22.4              | 12.6        | -           | -           |
| BS-3S              | 1.0                 | 11/7/91       | 916           | 30 : 17.1        | 88 : 2.0          | 12766.3         | 47098.4          | 14.6                | 20.7              | 12.9        | -           | -           |
| BS-3B              | 13.6                | 11/7/91       | 916           | 30 : 17.1        | 88 : 2.0          | 12766.3         | 47098.4          | 14.6                | 30.2              | 17.7        | -           | -           |
| BS-5S              | 1.0                 | 11/7/91       | 935           | 30 : 16.9        | 87 : 58.2         | 12805.6         | 47098.1          | 3.4                 | 20.7              | 12.7        | -           | -           |
| BS-7S              | 1.0                 | 11/7/91       | 947           | 30 : 16.9        | 87 : 54.9         | 12840.2         | 47098.6          | 3.0                 | 21.4              | 12.3        | -           | -           |
| BS-7B              | 2.0                 | 11/7/91       | 947           | 30 : 16.9        | 87 : 54.9         | 12840.2         | 47098.6          | 3.0                 | 23.1              | 13.1        | -           | -           |
| BS-9S              | 1.0                 | 11/7/91       | 1005          | 30 : 16.6        | 87 : 51.1         | 12880.0         | 47098.5          | 3.6                 | 21.9              | 11.9        | -           | -           |
| BS-11S             | 1.0                 | 11/7/91       | 1023          | 30 : 16.7        | 87 : 47.9         | 12913.0         | 47099.4          | 3.0                 | 22.2              | 11.8        | -           | -           |
| BS-11B             | 2.0                 | 11/7/91       | 1023          | 30 : 16.7        | 87 : 47.9         | 12913.0         | 47099.4          | 3.0                 | 22.2              | 11.6        | -           | -           |
| MT-1S              | 1.0                 | 11/7/91       | 1120          | 30 : 14.0        | 88 : 2.3          | 12761.9         | 47085.2          | -                   | 21.5              | 13.8        | -           | -           |
| MT-1B              |                     | 11/7/91       | 1120          | 30 : 14.0        | 88 : 2.3          | 12761.9         | 47085.2          | -                   | 27.6              | 16.2        | -           | -           |
| MT-3S              | 1.0                 | 11/7/91       | 1135          | 30 : 11.7        | 88 : 2.6          | 12757.1         | 47075.0          | 15.8                | 22.7              | 14.1        | -           | -           |
| MT-3B              | 14.8                | 11/7/91       | 1135          | 30 : 11.7        | 88 : 2.6          | 12757.1         | 47075.0          | 15.8                | 28.7              | 17.1        | -           | -           |
| MT-5S              | 1.0                 | 11/7/91       | 1149          | 30 : 9.5         | 88 : 3.2          | 12750.3         | 47065.7          | 14.9                | 26.8              | 16.0        | -           | -           |
| MT-5B              | 13.9                | 11/7/91       | 1149          | 30 : 9.5         | 88 : 3.2          | 12750.3         | 47065.7          | 14.9                | 30.8              | 18.8        | -           | -           |
| MT-7S              | 1.0                 | 11/7/91       | 1207          | 30 : 7.2         | 88 : 4.1          | 12740.0         | 47055.4          | 17.9                | 27.4              | 16.9        | -           | -           |
| MT-7B              | 16.9                | 11/7/91       | 1207          | 30 : 7.2         | 88 : 4.1          | 12740.0         | 47055.4          | 17.9                | 32.1              | 20.7        | -           | -           |

## MOBILE BAY CRUISE MB-20

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -   | 1558         | 0.93        | 5.20        | 0.37        | 9.10        | 37.73      | 341         | 20.09       | 0.01        | 75.82      | 7.62       | 0.57       |
| MR-1B              | 13.6                | -   | -            | 0.52        | 0.68        | 0.20        | 2.90        | 8.69       | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 8.0 | -            | 0.57        | 3.91        | 0.38        | 0.83        | 47.79      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 8.2 | -            | 0.83        | 4.30        | 0.50        | 2.87        | 42.67      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 8.0 | 1470         | 0.72        | 4.60        | 0.46        | 5.27        | 40.46      | 286         | 9.41        | 0.05        | 35.14      | 3.81       | 0.29       |
| DR-3B              | 13.6                | 8.2 | -            | 0.41        | 0.52        | 0.20        | 5.40        | 7.86       | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 8.5 | -            | 0.72        | 1.83        | 0.39        | 0.33        | 41.49      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.0                 | 8.3 | -            | 0.62        | 2.74        | 0.36        | 1.83        | 29.95      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 8.4 | 1277         | 0.62        | 2.49        | 0.37        | 0.40        | 35.83      | 313         | 16.99       | 0.55        | 133.70     | 16.35      | 0.73       |
| DR-7B              | 1.7                 | 8.3 | -            | 0.67        | 3.12        | 0.34        | 1.80        | 32.20      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 8.2 | -            | 0.67        | 2.92        | 0.56        | 1.63        | 32.19      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 8.2 | 1341         | 0.26        | 3.94        | 0.46        | 3.57        | 40.18      | 292         | 14.13       | 0.39        | 64.56      | 7.68       | 0.45       |
| PC-3B              | 13.9                | 8.2 | -            | 0.57        | 0.29        | 0.13        | 0.80        | 5.49       | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 8.2 | 1440         | 0.59        | 1.22        | 0.23        | 0.90        | 22.54      | 275         | 15.05       | 0.00        | 76.31      | 9.22       | 0.49       |
| PC-5B              | 2.4                 | 8.2 | -            | 0.57        | 1.56        | 0.25        | 1.53        | 20.21      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 8.2 | 1415         | 0.57        | 2.22        | 0.32        | 1.10        | 29.17      | 288         | 12.28       | 0.37        | 53.71      | 6.95       | 0.43       |
| FR-3B              | 13.9                | 8.2 | -            | 0.23        | 0.28        | 0.13        | 1.17        | 4.96       | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | -   | -            | 0.62        | 0.83        | 0.24        | 0.33        | 17.43      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.4                 | -   | -            | 0.62        | 1.17        | 0.28        | 1.00        | 19.42      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | 8.3 | 1481         | 0.41        | 0.97        | 0.21        | 0.37        | 20.38      | 271         | 13.58       | 0.19        | 61.81      | 7.47       | 0.36       |
| WB-3S              | 1.0                 | -   | 1470         | 0.57        | 1.90        | 0.30        | 1.13        | 24.20      | 274         | 13.23       | 0.20        | 57.39      | 5.98       | 0.36       |
| WB-3B              | 6.6                 | -   | -            | 0.34        | 0.41        | 0.17        | 1.00        | 6.33       | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | -   | -            | 0.47        | 0.69        | 0.23        | 0.97        | 17.75      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.4                 | -   | -            | 0.44        | 0.83        | 0.22        | 0.83        | 16.61      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | -   | 1578         | 0.39        | 0.16        | 0.12        | 0.47        | 8.84       | 274         | -           | 0.32        | 132.76     | 17.87      | 0.78       |
| CP-3S              | 1.0                 | 8.3 | 1537         | 0.36        | 0.44        | 0.19        | 0.20        | 12.79      | 274         | 13.27       | 0.29        | 66.98      | 9.09       | 0.57       |
| CP-3B              | 8.8                 | 8.2 | -            | 0.16        | 0.16        | 0.13        | 1.27        | 6.44       | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 8.1 | -            | 0.44        | 0.98        | 0.24        | 0.00        | 11.82      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-20

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | 8.2 | 1603         | 0.36        | 0.35        | 0.17        | 0.00        | 8.67       | 240         | 12.95       | 0.24        | 74.66      | 8.96       | 0.59       |
| FM-3B              | 13.3                | 8.2 | -            | 0.16        | 0.19        | 0.12        | 0.00        | 5.60       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.3 | -            | 0.31        | 0.15        | 0.12        | 0.47        | 5.73       | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.2                 | 8.3 | -            | 0.26        | 0.23        | 0.14        | 0.00        | 6.86       | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 8.3 | 1661         | 0.28        | 0.28        | 0.14        | 0.53        | 6.64       | 225         | 12.81       | 0.14        | 90.19      | 11.59      | 0.72       |
| MS-1S              | 1.0                 | 7.9 | 1873         | 0.36        | 0.17        | 0.15        | 1.93        | 10.27      | 225         | 9.92        | 0.29        | 63.05      | 7.54       | 0.49       |
| MS-1B              | 1.1                 | 8.1 | -            | 0.34        | 0.15        | 0.16        | 0.97        | 8.25       | -           | -           | -           | -          | -          | -          |
| MS-3S              | 1.0                 | 8.2 | -            | 0.36        | 0.26        | 0.22        | 0.20        | 14.15      | -           | -           | -           | -          | -          | -          |
| MS-5S              | 1.0                 | 8.2 | 1627         | 0.28        | 0.28        | 0.16        | 0.10        | 11.27      | 241         | 10.61       | 0.14        | 64.08      | 7.11       | 0.47       |
| MS-5B              | 1.1                 | 8.2 | -            | 0.26        | 0.25        | 0.15        | 0.00        | 11.69      | -           | -           | -           | -          | -          | -          |
| BS-1S              | 1.0                 | 8.3 | -            | 0.31        | 0.31        | 0.19        | 0.20        | 11.04      | -           | -           | -           | -          | -          | -          |
| BS-3S              | 1.0                 | 8.3 | 1612         | 0.31        | 0.16        | 0.13        | 0.23        | 10.79      | 264         | 10.64       | 0.11        | 68.38      | 7.97       | 0.47       |
| BS-3B              | 13.6                | 8.2 | -            | 0.21        | 0.21        | 0.10        | 0.35        | 6.57       | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | 8.4 | -            | 0.13        | 0.12        | 0.13        | 0.00        | 6.81       | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | 8.4 | 1586         | 0.00        | 0.17        | 0.09        | 0.00        | 3.13       | 253         | 12.32       | 0.08        | -          | -          | 0.56       |
| BS-7B              | 2.0                 | 8.3 | -            | 0.10        | 0.12        | 0.13        | 0.00        | 3.85       | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | 8.5 | -            | 0.00        | 0.16        | 0.07        | 0.10        | 3.71       | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | 8.4 | 1595         | 0.00        | 0.14        | 0.10        | 0.00        | 3.34       | 272         | 12.88       | 0.60        | 116.01     | 12.40      | 0.60       |
| BS-11B             | 2.0                 | 8.4 | -            | 0.00        | 0.17        | 0.12        | 0.00        | 3.31       | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | 8.3 | -            | 0.10        | 0.19        | 0.11        | 0.00        | 7.53       | -           | -           | -           | -          | -          | -          |
| MT-1B              |                     | 8.3 | -            | 0.10        | 0.20        | 0.11        | 0.15        | 6.27       | -           | -           | -           | -          | -          | -          |
| MT-3S              | 1.0                 | 8.4 | 1671         | 0.10        | 0.11        | 0.14        | 0.10        | 6.65       | 236         | 11.33       | 0.27        | 63.83      | 7.41       | 0.36       |
| MT-3B              | 14.8                | 8.3 | -            | 0.10        | 0.14        | 0.12        | 0.10        | 6.11       | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | 8.4 | -            | 0.10        | 0.17        | 0.14        | 0.20        | 6.06       | -           | -           | -           | -          | -          | -          |
| MT-5B              | 13.9                | 8.3 | -            | 0.03        | 0.08        | 0.17        | 0.00        | 5.43       | -           | -           | -           | -          | -          | -          |
| MT-7S              | 1.0                 | 8.4 | 1857         | 0.08        | 0.14        | 0.14        | 0.20        | 5.36       | 174         | 8.16        | 0.17        | 46.99      | 5.12       | 0.28       |
| MT-7B              | 16.9                | 8.2 | -            | 0.03        | 0.19        | 0.12        | 0.25        | 4.58       | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-20

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTE<br>(-/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m <sup>2</sup> /d |
|--------------------|---------------------|------------------------|---------------|----------------|------------------|--------------------------------|
| MR-1S              | 1.0                 | 16.00                  | 4.35          | 1.31           | 110              | 0.244                          |
| MR-1B              | 13.6                | -                      | 5.55          | -              | -                | -                              |
| MR-2S              | 1.0                 | 21.33                  | 14.72         | 1.06           | 120              | -                              |
| DR-1S              | 1.0                 | 9.33                   | 12.14         | 1.01           | 130              | -                              |
| DR-3S              | 1.0                 | 11.33                  | 2.13          | 1.03           | 175              | 0.161                          |
| DR-3B              | 13.6                | -                      | 4.94          | -              | -                | -                              |
| DR-5S              | 1.0                 | 15.33                  | 26.34         | 1.21           | 110              | -                              |
| DR-5B              | 2.0                 | -                      | 17.59         | -              | -                | -                              |
| DR-7S              | 1.0                 | 16.00                  | 37.18         | 1.34           | 100              | 0.927                          |
| DR-7B              | 1.7                 | -                      | 17.75         | -              | -                | -                              |
| PC-1S              | 1.0                 | 14.67                  | 9.30          | 0.97           | 125              | -                              |
| PC-3S              | 1.0                 | 6.00                   | 4.98          | 1.17           | 110              | 0.269                          |
| PC-3B              | 13.9                | -                      | 5.81          | -              | -                | -                              |
| PC-5S              | 1.0                 | 12.00                  | 9.55          | 1.38           | 95               | 0.426                          |
| PC-5B              | 2.4                 | -                      | 14.72         | -              | -                | -                              |
| FR-3S              | 1.0                 | 9.33                   | 5.44          | 1.19           | 100              | 0.455                          |
| FR-3B              | 13.9                | -                      | 6.57          | -              | -                | -                              |
| FR-5S              | 1.0                 | 14.67                  | 17.94         | 1.44           | 90               | -                              |
| FR-5B              | 2.4                 | -                      | 14.90         | -              | -                | -                              |
| WB-1S              | 1.0                 | 9.33                   | 5.38          | 1.02           | 125              | 0.313                          |
| WB-3S              | 1.0                 | 13.33                  | 3.63          | 1.24           | 110              | 0.217                          |
| WB-3B              | 6.6                 | -                      | 5.85          | -              | -                | -                              |
| WB-5S              | 1.0                 | 17.33                  | 10.33         | 1.37           | 80               | -                              |
| WB-5B              | 2.4                 | -                      | 8.78          | -              | -                | -                              |
| WB-7S              | 1.0                 | 15.33                  | 18.33         | 1.41           | 85               | 0.556                          |
| CP-3S              | 1.0                 | 12.00                  | 7.49          | 1.04           | 50               | 0.291                          |
| CP-3B              | 8.8                 | -                      | 7.72          | -              | -                | -                              |
| FM-1S              | 1.0                 | 17.33                  | 6.84          | 1.51           | 75               | -                              |

## MOBILE BAY CRUISE MB-20

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| FM-3S              | 1.0                 | 15.33                  | 7.10            | 1.14           | 55             | 0.258            | 520.0             |
| FM-3B              | 13.3                | -                      | 4.00            | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 18.00                  | -               | 1.46           | 70             | -                | -                 |
| FM-5B              | 3.2                 | -                      | 6.89            | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 18.67                  | 9.55            | 1.17           | 45             | 0.298            | 586.0             |
| MS-1S              | 1.0                 | 39.33                  | 2.97            | 1.05           | 70             | 0.207            | 210.0             |
| MS-1B              | 1.1                 | -                      | 2.84            | -              | -              | -                | -                 |
| MS-3S              | 1.0                 | 24.00                  | 5.28            | 1.26           | 70             | -                | -                 |
| MS-5S              | 1.0                 | 20.00                  | 4.30            | 1.24           | 85             | 0.220            | 272.0             |
| MS-5B              | 1.1                 | -                      | 4.80            | -              | -              | -                | -                 |
| BS-1S              | 1.0                 | 16.00                  | 4.53            | 1.20           | 105            | -                | -                 |
| BS-3S              | 1.0                 | 20.67                  | 6.84            | 1.22           | 115            | 0.247            | 354.0             |
| BS-3B              | 13.6                | -                      | 6.46            | -              | -              | -                | -                 |
| BS-5S              | 1.0                 | 24.00                  | 5.42            | 1.53           | 70             | -                | -                 |
| BS-7S              | 1.0                 | 14.00                  | 8.91            | 1.26           | 115            | 0.232            | 293.0             |
| BS-7B              | 2.0                 | -                      | 9.94            | -              | -              | -                | -                 |
| BS-9S              | 1.0                 | 29.33                  | 10.97           | 1.45           | 60             | -                | -                 |
| BS-11S             | 1.0                 | 16.00                  | 7.75            | 2.31           | 120            | 0.149            | 123.0             |
| BS-11B             | 2.0                 | -                      | 7.75            | -              | -              | -                | -                 |
| MT-1S              | 1.0                 | 12.00                  | 5.37            | 1.00           | 110            | -                | -                 |
| MT-1B              | -                   | -                      | 4.09            | -              | -              | -                | -                 |
| MT-3S              | 1.0                 | 13.33                  | 4.47            | 0.84           | 110            | 0.127            | 281.0             |
| MT-3B              | 14.8                | -                      | 3.90            | -              | -              | -                | -                 |
| MT-5S              | 1.0                 | -                      | 3.85            | 0.86           | 125            | -                | -                 |
| MT-5B              | 13.9                | -                      | 5.31            | -              | -              | -                | -                 |
| MT-7S              | 1.0                 | 30.67                  | 2.79            | 0.63           | 155            | 0.081            | 243.0             |
| MT-7B              | 16.9                | -                      | 3.15            | -              | -              | -                | -                 |

## ***Mobile Bay Cruise Report***

### ***MB-21***

11, 12 December 1991

***Vessel:***

*R/V Deborah B.*

***Operation Area:***

- \* 11 December: Mobile Bay from Fort Morgan to Mobile River
- \* 12 December: Mississippi Sound to Bon Secour Bay following the Intracoastal Waterway, Bay Mouth following ship channel to Farewell Buoy

***Scientific Party:***

Felix Fernandez (Chief Scientist)  
Alma Robichaux  
Laurie Sullivan

***Supporting Agency:***

U.S. Geological Survey

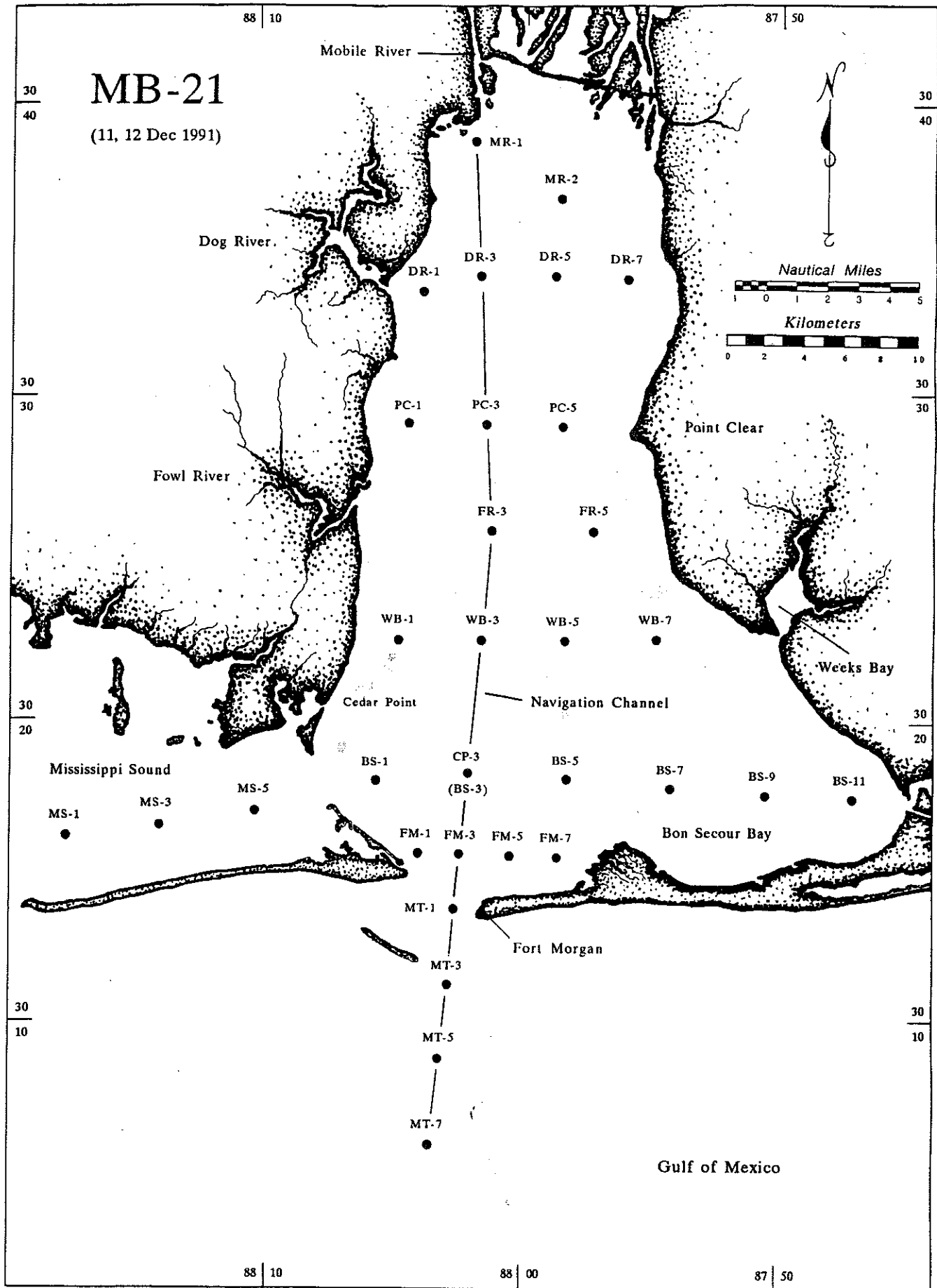
***Research Objectives:***

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 33 surface stations (22 of those including bottom water casts). Samples were taken for  $\text{TCO}_2$ , DOC, DON, DOP, POP, PC/PN, taxonomy identification and  $^{14}\text{C}$  productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations.

***Cruise Summary:***

11 December: Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0710. Stations were continued going upbay through station MR-1. Returned to DISL 1400.

12 December: Departed DISL 0700. Deadheaded to station MS-1. Began sampling 0750. Stations were continued going east to station BS-11, then south to MT-7. Returned to DISL 1300.



## MOBILE BAY CRUISE MB-21

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 12/11/91      | 1218          | 30         | 38.1       | 88          | 2.0         | 12780.4          | 47180.1          | 14.6                | 1.5               | 14.3        | -           | -           |
| MR-1B              | 13.6                | 12/11/91      | 1218          | 30         | 38.1       | 88          | 2.0         | 12780.4          | 47180.1          | 14.6                | 29.7              | 17.2        | -           | -           |
| MR-2S              | 1.0                 | 12/11/91      | 1158          | 30         | 36.2       | 87          | 58.6        | 12815.0          | 47174.8          | 3.0                 | 1.0               | 13.7        | -           | -           |
| DR-1S              | 1.0                 | 12/11/91      | 1101          | 30         | 32.6       | 88          | 4.0         | 12755.5          | 47159.2          | 2.4                 | 3.3               | 14.9        | -           | -           |
| DR-3S              | 1.0                 | 12/11/91      | 1116          | 30         | 34.1       | 88          | 1.7         | 12781.0          | 47165.7          | 12.5                | 3.3               | 14.7        | -           | -           |
| DR-3B              | 11.5                | 12/11/91      | 1116          | 30         | 34.1       | 88          | 1.7         | 12781.0          | 47165.7          | 12.5                | 29.9              | 17.0        | -           | -           |
| DR-5S              | 1.0                 | 12/11/91      | 1133          | 30         | 34.2       | 87          | 58.5        | 12814.5          | 47167.3          | 3.6                 | 0.6               | 14.1        | -           | -           |
| DR-5B              | 2.6                 | 12/11/91      | 1133          | 30         | 34.2       | 87          | 58.5        | 12814.5          | 47167.3          | 3.6                 | 8.1               | 14.7        | -           | -           |
| DR-7S              | 1.0                 | 12/11/91      | 1144          | 30         | 34.4       | 87          | 56.0        | 12840.5          | 47169.1          | 2.7                 | 4.4               | 13.9        | -           | -           |
| DR-7B              | 1.7                 | 12/11/91      | 1144          | 30         | 34.4       | 87          | 56.0        | 12840.5          | 47169.1          | 2.7                 | 9.4               | 14.6        | -           | -           |
| PC-1S              | 1.0                 | 12/11/91      | 1043          | 30         | 29.0       | 88          | 4.0         | 12753.2          | 47145.7          | 2.7                 | 3.0               | 14.8        | -           | -           |
| PC-3S              | 1.0                 | 12/11/91      | 1027          | 30         | 28.5       | 88          | 1.0         | 12784.0          | 47144.6          | 14.0                | 1.9               | 14.5        | -           | -           |
| PC-3B              | 13.0                | 12/11/91      | 1027          | 30         | 28.5       | 88          | 1.0         | 12784.0          | 47144.6          | 14.0                | 29.8              | 16.6        | -           | -           |
| PC-5S              | 1.0                 | 12/11/91      | 1008          | 30         | 28.4       | 87          | 58.0        | 12815.5          | 47145.4          | 3.4                 | 6.4               | 15.3        | -           | -           |
| PC-5B              | 2.4                 | 12/11/91      | 1008          | 30         | 28.4       | 87          | 58.0        | 12815.5          | 47145.4          | 3.4                 | 12.3              | 15.2        | -           | -           |
| FR-3S              | 1.0                 | 12/11/91      | 946           | 30         | 25.3       | 88          | 0.8         | 12783.9          | 47132.2          | 14.9                | 4.0               | 15.0        | -           | -           |
| FR-3B              | 13.9                | 12/11/91      | 946           | 30         | 25.3       | 88          | 0.8         | 12783.9          | 47132.2          | 14.9                | 30.2              | 16.9        | -           | -           |
| FR-5S              | 1.0                 | 12/11/91      | 929           | 30         | 25.2       | 87          | 56.9        | 12825.0          | 47132.7          | 3.4                 | 11.8              | 15.0        | -           | -           |
| FR-5B              | 2.4                 | 12/11/91      | 929           | 30         | 25.2       | 87          | 56.9        | 12825.0          | 47132.7          | 3.4                 | 17.6              | 15.3        | -           | -           |
| WB-1S              | 1.0                 | 12/11/91      | 830           | 30         | 22.6       | 88          | 4.4         | 12745.0          | 47120.4          | 3.4                 | 6.3               | 15.1        | -           | -           |
| WB-3S              | 1.0                 | 12/11/91      | 845           | 30         | 22.7       | 88          | 1.2         | 12778.2          | 47121.3          | 11.6                | 6.2               | 14.9        | -           | -           |
| WB-3B              | 10.6                | 12/11/91      | 845           | 30         | 22.7       | 88          | 1.2         | 12778.2          | 47121.3          | 11.6                | 30.9              | 16.9        | -           | -           |
| WB-5S              | 1.0                 | 12/11/91      | 901           | 30         | 22.8       | 87          | 58.2        | 12810.4          | 47122.8          | 3.6                 | 9.6               | 14.8        | -           | -           |
| WB-5B              | 2.6                 | 12/11/91      | 901           | 30         | 22.8       | 87          | 58.2        | 12810.4          | 47122.8          | 3.6                 | 14.9              | 15.1        | -           | -           |
| WB-7S              | 1.0                 | 12/11/91      | 915           | 30         | 22.6       | 87          | 55.3        | 12840.2          | 47122.7          | 3.0                 | 15.4              | 15.0        | -           | -           |
| CP-3S              | 1.0                 | 12/11/91      | 804           | 30         | 18.3       | 88          | 1.9         | 12768.4          | 47103.2          | 15.2                | 10.5              | 15.1        | -           | -           |
| CP-3B              | 14.2                | 12/11/91      | 804           | 30         | 18.3       | 88          | 1.9         | 12768.4          | 47103.2          | 15.2                | 31.0              | 17.0        | -           | -           |
| FM-1S              | 1.0                 | 12/11/91      | 711           | 30         | 15.9       | 88          | 3.7         | 12748.2          | 47092.7          | 4.6                 | 10.8              | 15.0        | -           | -           |



## MOBILE BAY CRUISE MB-21

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LON<br>DEG | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3S              | 1.0                 | 12/11/91      | 720           | 30         | 15.4       | 88         | 2.3        | 12762.4          | 47091.2          | 14.3                | 11.1              | 15.1        | -           | -           |
| FM-3B              | 13.3                | 12/11/91      | 720           | 30         | 15.4       | 88         | 2.3        | 12762.4          | 47091.2          | 14.3                | 31.0              | 17.0        | -           | -           |
| FM-5S              | 1.0                 | 12/11/91      | 732           | 30         | 15.6       | 88         | 0.8        | 12778.8          | 47092.3          | 4.2                 | 12.4              | 15.0        | -           | -           |
| FM-5B              | 3.2                 | 12/11/91      | 732           | 30         | 15.6       | 88         | 0.8        | 12778.8          | 47092.3          | 4.2                 | 17.9              | 15.5        | -           | -           |
| FM-7S              | 1.0                 | 12/11/91      | 746           | 30         | 15.5       | 87         | 58.9       | 12797.8          | 47092.1          | 4.0                 | 19.1              | 15.5        | -           | -           |
| MS-1S              | 1.0                 | 12/12/91      | 754           | 30         | 15.3       | 88         | 18.3       | 12596.5          | 47087.8          | 4.0                 | 21.8              | 16.1        | -           | -           |
| MS-1B              | 3.0                 | 12/12/91      | 754           | 30         | 15.3       | 88         | 18.3       | 12596.5          | 47087.8          | 4.0                 | 24.6              | 16.2        | -           | -           |
| MS-3S              | 1.0                 | 12/12/91      | 813           | 30         | 15.6       | 88         | 14.4       | 12637.2          | 47089.8          | 3.0                 | 16.9              | 15.9        | -           | -           |
| MS-5S              | 1.0                 | 12/12/91      | 830           | 30         | 16.9       | 88         | 10.3       | 12680.2          | 47092.9          | 2.1                 | 14.6              | 15.9        | -           | -           |
| MS-5B              | 1.1                 | 12/12/91      | 830           | 30         | 16.9       | 88         | 10.3       | 12680.2          | 47092.9          | 2.1                 | 17.4              | 15.8        | -           | -           |
| BS-1S              | 1.0                 | 12/12/91      | 900           | 30         | 16.9       | 88         | 5.8        | 12727.1          | 47096.7          | 4.0                 | 11.4              | 15.6        | -           | -           |
| BS-3S              | 1.0                 | 12/12/91      | 916           | 30         | 17.1       | 88         | 2.1        | 12765.7          | 47098.4          | 15.2                | 8.9               | 15.4        | -           | -           |
| BS-3B              | 14.2                | 12/12/91      | 916           | 30         | 17.1       | 88         | 2.1        | 12765.7          | 47098.4          | 15.2                | 28.6              | 16.9        | -           | -           |
| BS-5S              | 1.0                 | 12/12/91      | 928           | 30         | 17.1       | 88         | 0.2        | 12785.5          | 47098.4          | 3.4                 | 12.5              | 15.6        | -           | -           |
| BS-7S              | 1.0                 | 12/12/91      | 950           | 30         | 16.7       | 87         | 54.9       | 12839.8          | 47098.0          | 3.6                 | 16.2              | 15.8        | -           | -           |
| BS-7B              | 2.6                 | 12/12/91      | 950           | 30         | 16.7       | 87         | 54.9       | 12839.8          | 47098.0          | 3.6                 | 19.0              | 15.9        | -           | -           |
| BS-9S              | 1.0                 | 12/12/91      | 1006          | 30         | 16.7       | 87         | 51.1       | 12879.8          | 47098.7          | 3.0                 | 17.6              | 16.1        | -           | -           |
| BS-11S             | 1.0                 | 12/12/91      | 1021          | 30         | 16.7       | 87         | 47.9       | 12912.8          | 47099.4          | 2.7                 | 18.3              | 16.3        | -           | -           |
| BS-11B             | 1.7                 | 12/12/91      | 1021          | 30         | 16.7       | 87         | 47.9       | 12912.8          | 47099.4          | 2.7                 | 18.3              | 16.2        | -           | -           |
| MT-1S              | 1.0                 | 12/12/91      | 1113          | 30         | 13.9       | 88         | 2.3        | 12762.1          | 47084.5          | 14.9                | 11.2              | 15.9        | -           | -           |
| MT-1B              | 13.9                | 12/12/91      | 1113          | 30         | 13.9       | 88         | 2.3        | 12762.1          | 47084.5          | 14.9                | 29.7              | 17.3        | -           | -           |
| MT-3S              | 1.0                 | 12/12/91      | 1127          | 30         | 11.6       | 88         | 2.6        | 12757.2          | 47074.8          | 15.5                | 13.7              | 16.0        | -           | -           |
| MT-3B              | 14.5                | 12/12/91      | 1127          | 30         | 11.6       | 88         | 2.6        | 12757.2          | 47074.8          | 15.5                | 30.5              | 17.3        | -           | -           |
| MT-5S              | 1.0                 | 12/12/91      | 1142          | 30         | 9.5        | 88         | 3.2        | 12750.3          | 47065.6          | 15.2                | 18.3              | 16.8        | -           | -           |
| MT-5B              | 14.2                | 12/12/91      | 1142          | 30         | 9.5        | 88         | 3.2        | 12750.3          | 47065.6          | 15.2                | 32.1              | 17.8        | -           | -           |
| MT-7S              | 1.0                 | 12/12/91      | 1158          | 30         | 7.2        | 88         | 4.1        | 12739.4          | 47055.4          | 17.9                | 28.8              | 17.9        | -           | -           |
| MT-7B              | 16.9                | 12/12/91      | 1158          | 30         | 7.2        | 88         | 4.1        | 12739.4          | 47055.4          | 17.9                | 32.7              | 17.8        | -           | -           |

## MOBILE BAY CRUISE MB-21

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 7.6 | -            | 0.95        | 11.36       | 0.55        | 3.86        | 80.30      | 552         | 22.05       | 0.00        | 194.03     | 16.12      | 2.67       |
| MR-1B              | 13.6                | 8.2 | -            | 0.38        | 1.06        | 0.17        | 2.29        | 8.82       | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 7.7 | -            | 0.89        | 11.48       | 0.56        | 3.79        | 83.04      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 7.6 | -            | 0.84        | 12.23       | 0.65        | 4.93        | 76.84      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 7.6 | -            | 0.76        | 11.55       | 0.50        | 3.94        | 78.85      | 376         | 18.50       | 0.14        | 153.05     | 13.82      | 2.00       |
| DR-3B              | 11.5                | 8.2 | -            | 0.33        | 0.80        | 0.31        | 1.38        | 10.10      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 7.9 | -            | 0.87        | 12.03       | 0.53        | 3.77        | 79.75      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.6                 | 7.5 | -            | 0.81        | 10.59       | 0.59        | 4.72        | 69.02      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 7.6 | -            | 0.81        | 11.99       | 0.61        | 4.42        | 79.66      | 360         | 20.52       | 0.00        | 118.46     | 8.51       | 1.15       |
| DR-7B              | 1.7                 | 7.5 | -            | 0.81        | 8.72        | 0.52        | 5.17        | 66.36      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 7.7 | -            | 0.79        | 14.13       | 0.68        | 4.54        | 78.09      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 7.6 | -            | 0.79        | 14.25       | 0.65        | 4.37        | 66.63      | 392         | 26.27       | 0.11        | 145.56     | 9.74       | -          |
| PC-3B              | 13.0                | 8.2 | -            | 0.46        | 1.10        | 0.20        | 1.49        | 8.68       | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 7.9 | -            | 0.38        | 8.91        | 0.54        | 2.87        | 75.39      | 333         | 22.36       | 0.07        | 54.08      | 5.03       | 0.41       |
| PC-5B              | 2.4                 | 7.9 | -            | 0.65        | 7.59        | 0.52        | 2.33        | 55.41      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 7.8 | -            | 0.38        | 7.45        | 0.45        | 3.34        | 77.89      | 346         | 26.10       | 0.32        | 72.36      | 5.84       | 0.79       |
| FR-3B              | 13.9                | 8.2 | -            | 0.30        | 1.01        | 0.15        | 0.24        | 5.99       | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 8.3 | -            | 0.09        | 3.16        | 0.30        | 0.35        | 54.83      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.4                 | 8.1 | -            | 0.30        | 3.28        | 0.51        | 1.13        | 32.46      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | 8.0 | -            | 0.68        | 8.29        | 0.51        | 1.75        | 76.40      | 341         | 21.93       | 0.00        | 51.95      | 5.51       | 0.44       |
| WB-3S              | 1.0                 | 8.0 | -            | 0.63        | 12.84       | 0.73        | 3.58        | 74.40      | 335         | 15.70       | 0.00        | 54.39      | 5.44       | 0.54       |
| WB-3B              | 10.6                | 7.9 | -            | 0.17        | 0.99        | 0.12        | 0.11        | 4.82       | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | 8.2 | -            | 0.30        | 8.60        | 0.57        | 1.66        | 64.78      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.6                 | 8.0 | -            | 0.30        | 5.38        | 0.43        | 1.25        | 34.00      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | 8.4 | -            | 0.09        | 0.89        | 0.09        | 0.00        | 28.51      | 291         | 12.95       | 0.21        | 162.76     | 22.53      | 1.28       |
| CP-3S              | 1.0                 | 8.1 | -            | 0.14        | 4.87        | 0.40        | 0.01        | 60.99      | 311         | 15.91       | 0.11        | 49.86      | 6.37       | 0.40       |
| CP-3B              | 14.2                | 8.3 | -            | 0.14        | 1.00        | 0.11        | 0.00        | 4.93       | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 8.3 | -            | 0.30        | 8.59        | 0.71        | 1.53        | 59.16      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-21

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | 8.3 | -            | 0.20        | 4.11        | 0.45        | 0.39        | 55.24      | 317         | 12.55       | 0.05        | 52.84      | 8.32       | 0.43       |
| FM-3B              | 13.3                | 8.2 | -            | 0.12        | 0.99        | 0.13        | 0.24        | 10.73      | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.4 | -            | 0.09        | 4.14        | 0.42        | 0.14        | 49.20      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.2                 | 8.3 | -            | 0.17        | 3.47        | 0.34        | 0.20        | 37.83      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 8.5 | -            | 0.12        | 1.16        | 0.17        | 0.09        | 26.54      | 264         | 11.21       | 0.28        | 83.36      | 11.92      | 0.64       |
| MS-1S              | 1.0                 | 8.3 | -            | 0.22        | 0.75        | 0.07        | 1.99        | 7.44       | 239         | 8.98        | 0.13        | 52.07      | 6.06       | 0.28       |
| MS-1B              | 3.0                 | 8.2 | -            | 0.12        | 0.81        | 0.10        | 0.48        | 5.38       | -           | -           | -           | -          | -          | -          |
| MS-3S              | 1.0                 | 8.3 | -            | 0.25        | 4.41        | 0.36        | 0.09        | 38.66      | -           | -           | -           | -          | -          | -          |
| MS-5S              | 1.0                 | 8.3 | -            | 0.49        | 4.85        | 0.33        | 0.57        | 45.27      | 292         | 14.12       | 0.01        | 64.78      | 9.39       | 0.52       |
| MS-5B              | 1.1                 | 8.3 | -            | 0.41        | 3.65        | 0.31        | 0.54        | 37.10      | -           | -           | -           | -          | -          | -          |
| BS-1S              | 1.0                 | 8.5 | -            | 0.09        | 3.66        | 0.48        | 0.54        | 54.26      | -           | -           | -           | -          | -          | -          |
| BS-3S              | 1.0                 | 8.2 | -            | 0.30        | 7.83        | 0.59        | 1.51        | 67.62      | 320         | 12.50       | 0.15        | 53.06      | 7.29       | 0.38       |
| BS-3B              | 14.2                | 8.3 | -            | 0.25        | 1.14        | 0.14        | 1.43        | 15.85      | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | 8.6 | -            | 0.20        | 1.82        | 0.27        | 0.09        | 48.49      | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | 8.6 | -            | 0.17        | 0.77        | 0.08        | 0.33        | 20.99      | 284         | 12.06       | 0.23        | 104.95     | 13.49      | 0.58       |
| BS-7B              | 2.6                 | 8.3 | -            | 0.25        | 0.73        | 0.12        | 1.04        | 20.29      | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | 8.5 | -            | 0.14        | 0.76        | 0.09        | 0.33        | 14.65      | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | 8.5 | -            | 0.30        | 0.73        | 0.08        | 0.11        | 10.26      | 276         | 19.87       | 0.20        | 109.33     | 11.34      | 0.82       |
| BS-11B             | 1.7                 | 8.5 | -            | 0.14        | 0.75        | 0.05        | 0.18        | 12.07      | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | 8.4 | -            | 0.57        | 4.24        | 0.43        | 0.09        | 56.39      | -           | -           | -           | -          | -          | -          |
| MT-1B              | 13.9                | 8.3 | -            | 0.17        | 0.97        | 0.11        | 1.96        | 7.79       | -           | -           | -           | -          | -          | -          |
| MT-3S              | 1.0                 | 8.6 | -            | 0.14        | 1.67        | 0.26        | 0.22        | 49.07      | 290         | 7.91        | 0.11        | 84.50      | 12.39      | 0.54       |
| MT-3B              | 14.5                | 8.3 | -            | 0.09        | 0.80        | 0.17        | 2.95        | 6.24       | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | 8.4 | -            | 0.06        | 0.73        | 0.08        | 0.00        | 34.12      | -           | -           | -           | -          | -          | -          |
| MT-5B              | 14.2                | 8.3 | -            | 0.22        | 0.81        | 0.19        | 0.35        | 14.32      | -           | -           | -           | -          | -          | -          |
| MT-7S              | 1.0                 | 8.3 | -            | 0.06        | 0.77        | 0.09        | 0.00        | 8.55       | 187         | 9.16        | 0.54        | 42.82      | 4.82       | 0.14       |
| MT-7B              | 16.9                | 8.3 | -            | 0.28        | 0.86        | 0.16        | 0.54        | 4.95       | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-21

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | SESTON CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|------------------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 75.80                  | 20.14                  | 5.08           | 20             | 0.285            | 88.0              |
| MR-1B              | 13.6                | -                      | 2.22                   | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 68.53                  | 12.91                  | 4.27           | 20             | -                | -                 |
| DR-1S              | 1.0                 | 20.53                  | 1.86                   | 3.10           | 40             | -                | -                 |
| DR-3S              | 1.0                 | 52.53                  | 0.57                   | 3.41           | 30             | 0.156            | 85.0              |
| DR-3B              | 11.5                | -                      | 3.72                   | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 71.20                  | 2.20                   | 4.31           | 15             | -                | -                 |
| DR-5B              | 2.6                 | -                      | 0.53                   | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 39.20                  | 1.08                   | -              | 25             | 0.088            | 78.0              |
| DR-7B              | 1.7                 | -                      | 1.56                   | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 45.20                  | 3.07                   | 3.07           | 30             | -                | -                 |
| PC-3S              | 1.0                 | 45.87                  | 1.58                   | 3.19           | 25             | 0.001            | 100.0             |
| PC-3B              | 13.0                | -                      | 11.10                  | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 22.90                  | 2.61                   | 1.15           | 120            | 0.294            | 408.0             |
| PC-5B              | 2.4                 | -                      | 3.38                   | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 25.40                  | 2.75                   | 1.94           | 60             | 0.222            | 186.0             |
| FR-3B              | 13.9                | -                      | 5.16                   | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 9.90                   | 8.78                   | -              | 130            | -                | -                 |
| FR-5B              | 2.4                 | -                      | 7.92                   | -              | -              | -                | -                 |
| WB-1S              | 1.0                 | 21.40                  | 5.25                   | 1.33           | 125            | 0.482            | 569.0             |
| WB-3S              | 1.0                 | 7.40                   | 3.28                   | 1.50           | 80             | 0.410            | 417.0             |
| WB-3B              | 10.6                | -                      | 3.58                   | -              | -              | -                | -                 |
| WB-5S              | 1.0                 | 21.90                  | 6.54                   | 0.99           | 140            | -                | -                 |
| WB-5B              | 2.6                 | -                      | 5.51                   | -              | -              | -                | -                 |
| WB-7S              | 1.0                 | 16.90                  | 24.01                  | 0.96           | 150            | 1.769            | 336.0             |
| CP-3S              | 1.0                 | 11.40                  | 5.85                   | 0.86           | 160            | 0.396            | 832.0             |
| CP-3B              | 14.2                | -                      | 2.98                   | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 7.93                   | 4.84                   | 1.16           | 160            | -                | -                 |

## MOBILE BAY CRUISE MB-21

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTE<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |        |
|--------------------|---------------------|------------------------|---------------|----------------|------------------|-------------------|--------|
| FM-3S              | 1.0                 | 4.72                   | 6.91          | 0.94           | 150              | 0.288             | 484.0  |
| FM-3B              | 13.3                | -                      | 3.49          | -              | -                | -                 | -      |
| FM-5S              | 1.0                 | 19.92                  | 9.47          | 1.08           | 140              | -                 | -      |
| FM-5B              | 3.2                 | -                      | 8.52          | -              | -                | -                 | -      |
| FM-7S              | 1.0                 | 27.20                  | 9.81          | 1.12           | 150              | 0.347             | 600.0  |
| MS-1S              | 1.0                 | 18.40                  | 4.22          | 0.67           | 180              | 0.288             | 872.0  |
| MS-1B              | 3.0                 | -                      | 4.39          | -              | -                | -                 | -      |
| MS-3S              | 1.0                 | 21.90                  | 5.68          | 0.72           | 175              | -                 | -      |
| MS-5S              | 1.0                 | 14.40                  | 7.23          | 0.98           | 115              | 0.496             | 973.0  |
| MS-5B              | 1.1                 | -                      | 10.59         | -              | -                | -                 | -      |
| BS-1S              | 1.0                 | 15.90                  | 8.00          | 0.68           | 200              | -                 | -      |
| BS-3S              | 1.0                 | 8.90                   | 6.71          | 0.78           | 180              | 0.461             | 1061.0 |
| BS-3B              | 14.2                | -                      | 4.82          | -              | -                | -                 | -      |
| BS-5S              | 1.0                 | 22.40                  | 11.53         | 0.84           | 190              | -                 | -      |
| BS-7S              | 1.0                 | 12.90                  | 8.43          | 1.03           | 160              | 0.428             | 836.0  |
| BS-7B              | 2.6                 | -                      | 12.22         | -              | -                | -                 | -      |
| BS-9S              | 1.0                 | 16.40                  | 7.49          | 1.48           | 135              | -                 | -      |
| BS-11S             | 1.0                 | 16.40                  | 5.85          | 1.24           | 135              | 0.298             | 550.0  |
| BS-11B             | 1.7                 | -                      | 6.89          | -              | -                | -                 | -      |
| MT-1S              | 1.0                 | 15.40                  | 8.95          | 0.68           | 215              | -                 | -      |
| MT-1B              | 13.9                | -                      | 4.82          | -              | -                | -                 | -      |
| MT-3S              | 1.0                 | 18.40                  | 11.79         | 0.85           | 95               | 0.720             | 1662.0 |
| MT-3B              | 14.5                | -                      | 4.56          | -              | -                | -                 | -      |
| MT-5S              | 1.0                 | 28.90                  | 7.40          | 0.47           | 250              | -                 | -      |
| MT-5B              | 14.2                | -                      | 20.40         | -              | -                | -                 | -      |
| MT-7S              | 1.0                 | 38.40                  | 22.98         | 0.39           | 280              | 0.110             | 576.0  |
| MT-7B              | 16.9                | -                      | 23.15         | -              | -                | -                 | -      |

## ***Mobile Bay Cruise Report***

***MB-22***

21 January 1992

***Vessel:***

*R/V Deborah B.*

***Operation Area:***

Mobile Bay: from Fort Morgan to Mobile River

***Scientific Party:***

Felix Fernandez (Chief Scientist)  
Alma Robichaux  
Laurie Sullivan

***Supporting Agency:***

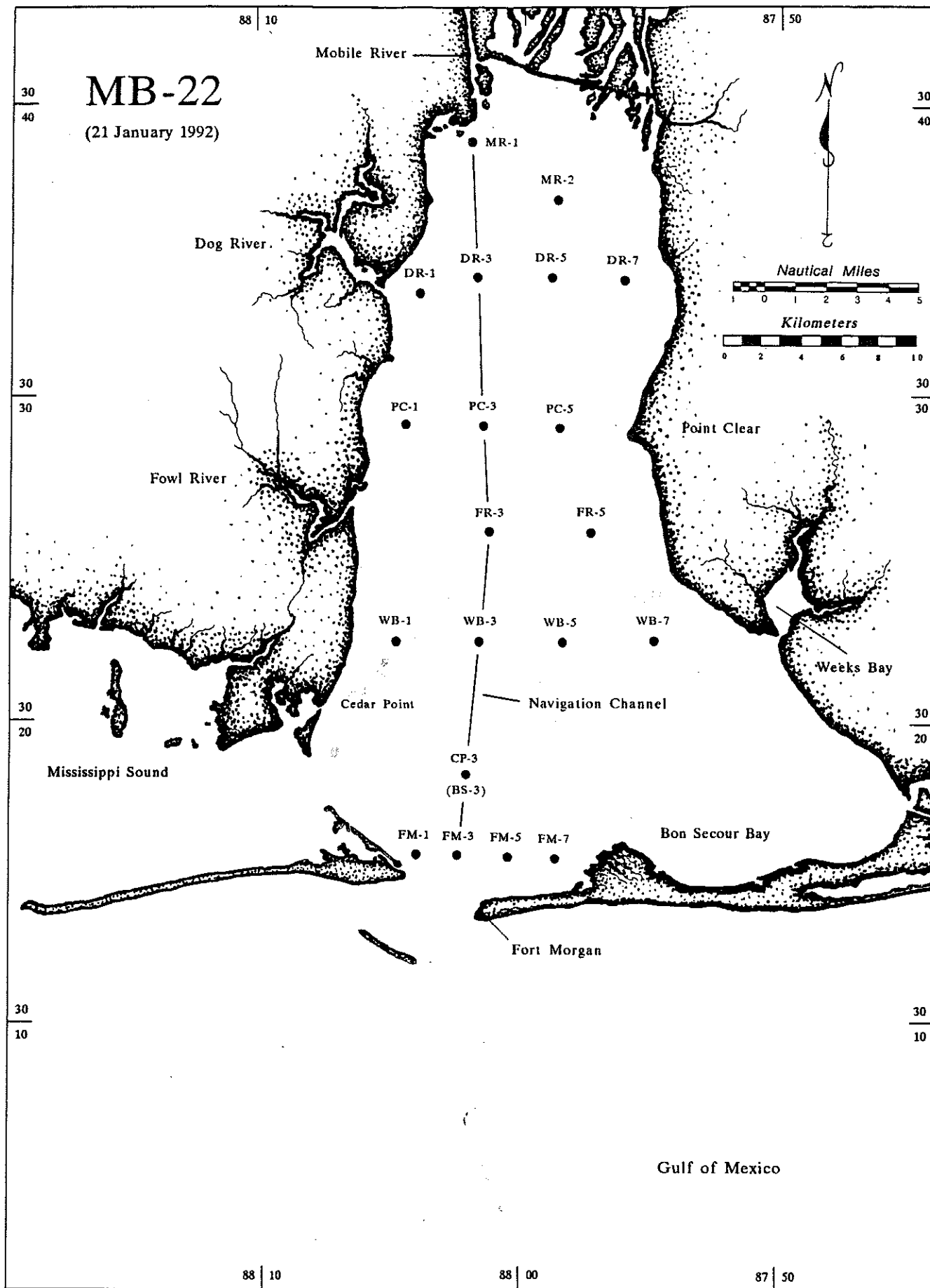
U.S. Geological Survey

***Research Objectives:***

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 20 surface stations (13 of those including bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations.

***Cruise Summary:***

Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0715. Stations were continued going upbay through station MR-1. Returned to DISL 1400.



## MOBILE BAY CRUISE MB-22

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 1/21/92       | 1224          | 30 :       | 38.1       | 88 :        | 2.0         | 12780.4          | 47180.2          | 14.9                | 1.2               | 9.3         | 11.5        | 100         |
| MR-1B              | 13.9                | 1/21/92       | 1224          | 30 :       | 38.1       | 88 :        | 2.0         | 12780.4          | 47180.2          | 14.9                | 29.5              | 13.7        | 6.7         | 78          |
| MR-2S              | 1.0                 | 1/21/92       | 1205          | 30 :       | 36.4       | 87 :        | 58.5        | 12815.4          | 47175.4          | 3.0                 | 0.1               | 9.3         | 8.8         | 77          |
| DR-1S              | 1.0                 | 1/21/92       | 1105          | 30 :       | 32.6       | 88 :        | 4.0         | 12755.5          | 47159.3          | 2.4                 | 3.6               | 9.3         | 10.9        | 97          |
| DR-3S              | 1.0                 | 1/21/92       | 1120          | 30 :       | 34.1       | 88 :        | 1.6         | 12781.0          | 47165.6          | 14.0                | 3.8               | 10.1        | 10.4        | 95          |
| DR-3B              | 13.0                | 1/21/92       | 1120          | 30 :       | 34.1       | 88 :        | 1.6         | 12781.0          | 47165.6          | 14.0                | 29.8              | 13.7        | 7.8         | 90          |
| DR-5S              | 1.0                 | 1/21/92       | 1136          | 30 :       | 34.2       | 87 :        | 58.5        | 12814.6          | 47167.5          | 3.4                 | 0.6               | 9.1         | 10.9        | 94          |
| DR-5B              | 2.4                 | 1/21/92       | 1136          | 30 :       | 34.2       | 87 :        | 58.5        | 12814.6          | 47167.5          | 3.4                 | 5.1               | 9.6         | 8.5         | 76          |
| DR-7S              | 1.0                 | 1/21/92       | 1150          | 30 :       | 34.4       | 87 :        | 56.1        | 12840.4          | 47169.3          | 2.7                 | 1.5               | 9.5         | 12.1        | 106         |
| DR-7B              | 1.7                 | 1/21/92       | 1150          | 30 :       | 34.4       | 87 :        | 56.1        | 12840.4          | 47169.3          | 2.7                 | 5.8               | 8.9         | 11.2        | 100         |
| PC-1S              | 1.0                 | 1/21/92       | 1048          | 30 :       | 28.9       | 88 :        | 4.0         | 12752.6          | 47145.3          | 2.7                 | 7.4               | 9.1         | 11.2        | 102         |
| PC-3S              | 1.0                 | 1/21/92       | 1032          | 30 :       | 28.5       | 88 :        | 1.0         | 12783.9          | 47144.6          | 14.0                | 3.5               | 7.6         | 12.3        | 129         |
| PC-3B              | 13.0                | 1/21/92       | 1032          | 30 :       | 28.5       | 88 :        | 1.0         | 12783.9          | 47144.6          | 14.0                | 29.9              | 13.5        | 7.4         | 85          |
| PC-5S              | 1.0                 | 1/21/92       | 1015          | 30 :       | 28.5       | 87 :        | 58.0        | 12815.4          | 47145.6          | 3.4                 | 5.3               | 8.7         | 12.4        | 110         |
| PC-5B              | 2.4                 | 1/21/92       | 1015          | 30 :       | 28.5       | 87 :        | 58.0        | 12815.4          | 47145.6          | 3.4                 | 9.5               | 9.1         | 10.9        | 100         |
| FR-3S              | 1.0                 | 1/21/92       | 954           | 30 :       | 25.4       | 88 :        | 0.8         | 12784.2          | 47132.5          | 13.1                | 4.7               | 8.4         | 11.5        | 101         |
| FR-3B              | 12.1                | 1/21/92       | 954           | 30 :       | 25.4       | 88 :        | 0.8         | 12784.2          | 47132.5          | 13.1                | 29.3              | 13.4        | 7.8         | 89          |
| FR-5S              | 1.0                 | 1/21/92       | 937           | 30 :       | 25.1       | 87 :        | 56.9        | 12825.2          | 47132.5          | 3.0                 | 6.9               | 8.4         | 11.7        | 104         |
| FR-5B              | 2.0                 | 1/21/92       | 937           | 30 :       | 25.1       | 87 :        | 56.9        | 12825.2          | 47132.5          | 3.0                 | 9.3               | 8.9         | 10.9        | 100         |
| WB-1S              | 1.0                 | 1/21/92       | 835           | 30 :       | 22.6       | 88 :        | 4.4         | 12745.0          | 47120.3          | 3.4                 | 6.1               | 7.5         | 12.7        | 110         |
| WB-3S              | 1.0                 | 1/21/92       | 850           | 30 :       | 22.6       | 88 :        | 1.3         | 12777.5          | 47120.9          | 14.3                | 6.9               | 8.0         | 12.0        | 105         |
| WB-3B              | 13.3                | 1/21/92       | 850           | 30 :       | 22.6       | 88 :        | 1.3         | 12777.5          | 47120.9          | 14.3                | 29.8              | 13.3        | 7.9         | 90          |
| WB-5S              | 1.0                 | 1/21/92       | 907           | 30 :       | 22.7       | 87 :        | 58.1        | 12810.4          | 47122.4          | 3.4                 | 6.1               | 7.6         | 12.1        | 105         |
| WB-5B              | 2.4                 | 1/21/92       | 907           | 30 :       | 22.7       | 87 :        | 58.1        | 12810.4          | 47122.4          | 3.4                 | 8.1               | 8.5         | 10.4        | 93          |
| WB-7S              | 1.0                 | 1/21/92       | 922           | 30 :       | 22.5       | 87 :        | 55.3        | 12840.4          | 47122.4          | 2.7                 | 11.0              | 8.8         | 12.3        | 114         |
| CP-3S              | 1.0                 | 1/21/92       | 810           | 30 :       | 18.3       | 88 :        | 1.9         | 12768.5          | 47103.2          | 14.9                | 8.0               | 7.5         | 12.6        | 110         |
| CP-3B              | 13.9                | 1/21/92       | 810           | 30 :       | 18.3       | 88 :        | 1.9         | 12768.5          | 47103.2          | 14.9                | 29.0              | 13.3        | 8.3         | 95          |
| FM-1S              | 1.0                 | 1/21/92       | 714           | 30 :       | 15.9       | 88 :        | 3.7         | 12748.6          | 47092.9          | 4.6                 | 9.2               | 7.1         | 12.2        | 107         |



## MOBILE BAY CRUISE MB-22

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LON<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3S              | 1.0                 | 1/21/92       | 724           | 30 : 15.5        | 88 : 2.3         | 12762.2          | 47091.4          | 14.3                | 9.8               | 7.1         | 12.8        | 112         |
| FM-3B              | 13.3                | 1/21/92       | 724           | 30 : 15.5        | 88 : 2.3         | 12762.2          | 47091.4          | 14.3                | 28.5              | 13.0        | 8.2         | 93          |
| FM-5S              | 1.0                 | 1/21/92       | 737           | 30 : 15.7        | 88 : 0.8         | 12778.8          | 47092.5          | 3.6                 | 11.7              | 7.9         | 12.6        | 114         |
| FM-5B              | 2.6                 | 1/21/92       | 737           | 30 : 15.7        | 88 : 0.8         | 12778.8          | 47092.5          | 3.6                 | 20.4              | 10.4        | 9.9         | 100         |
| FM-7S              | 1.0                 | 1/21/92       | 749           | 30 : 15.6        | 87 : 58.9        | 12797.9          | 47092.3          | 3.6                 | 9.8               | 7.1         | 12.5        | 110         |

## MOBILE BAY CRUISE MB-22

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 7.4 | 787          | 0.71        | 17.90       | 0.58        | 0.83        | -          | 441         | 18.10       | 0.04        | 80.65      | 8.30       | 0.81       |
| MR-1B              | 13.9                | 7.3 | -            | 0.25        | 1.60        | 0.37        | 0.73        | -          | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 7.4 | -            | 0.74        | 15.05       | 0.48        | 0.66        | 123.20     | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 7.4 | -            | 0.69        | 16.64       | 0.65        | 1.35        | 112.10     | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 7.4 | 882          | 0.71        | 17.24       | 0.60        | 1.18        | 105.70     | 419         | 21.81       | 0.29        | 74.52      | 12.97      | 0.73       |
| DR-3B              | 13.0                | 7.3 | -            | 0.20        | 1.17        | 0.31        | 0.49        | 7.33       | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 7.4 | -            | 0.71        | 17.87       | 0.58        | 1.02        | 117.60     | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.4                 | 7.3 | -            | 0.66        | 15.83       | 0.55        | 1.20        | 109.40     | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 7.4 | 812          | 0.71        | 17.16       | 0.61        | 0.81        | 120.10     | 444         | 18.59       | 0.14        | 79.15      | 9.53       | 0.70       |
| DR-7B              | 1.7                 | 7.4 | -            | 0.46        | 15.75       | 0.56        | 0.86        | 103.00     | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 7.4 | -            | 0.71        | 15.85       | 0.66        | 1.41        | 95.43      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 7.4 | 843          | 0.31        | 6.55        | 0.30        | 1.00        | 115.30     | 410         | 28.36       | 0.54        | 93.55      | 15.67      | 1.03       |
| PC-3B              | 13.0                | 7.3 | -            | 0.20        | 1.10        | 0.36        | 0.48        | 11.98      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 7.4 | 902          | 0.31        | 16.37       | 0.52        | 0.65        | 106.50     | 369         | 13.26       | 0.19        | 146.41     | 18.85      | 1.84       |
| PC-5B              | 2.4                 | 7.4 | -            | 0.31        | 13.67       | 0.47        | 0.90        | 89.64      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 8.3 | 898          | 0.64        | 17.27       | 0.62        | 1.06        | 102.00     | 426         | 15.43       | 0.36        | 97.06      | 13.34      | 1.17       |
| FR-3B              | 12.1                | 8.3 | -            | -           | -           | -           | -           | 10.97      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 8.4 | -            | 0.13        | 13.10       | 0.34        | 0.04        | 97.83      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.0                 | 8.3 | -            | 0.15        | 13.22       | 0.43        | 0.45        | 90.06      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | 8.3 | 907          | 0.20        | 15.95       | 0.50        | 0.87        | 99.16      | 377         | -           | 0.25        | 157.92     | 25.21      | 2.01       |
| WB-3S              | 1.0                 | 8.3 | 941          | 0.20        | 15.67       | 0.46        | 0.77        | 98.51      | 379         | 18.53       | 0.25        | 225.85     | 30.84      | 2.72       |
| WB-3B              | 13.3                | 8.3 | -            | 0.05        | 1.13        | 0.33        | 0.09        | -          | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | 8.5 | -            | 0.10        | 14.51       | 0.32        | 0.29        | 94.50      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.4                 | 8.1 | -            | 0.10        | 11.82       | 0.34        | -           | 9.90       | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | 8.6 | 1008         | 0.15        | 4.55        | 0.22        | 0.04        | 76.36      | 331         | 14.15       | 0.20        | 733.61     | 98.53      | 4.78       |
| CP-3S              | 1.0                 | 8.4 | 998          | 0.20        | 14.17       | 0.49        | 0.63        | 94.47      | 349         | 14.75       | 0.05        | 109.28     | 13.27      | 1.20       |
| CP-3B              | 13.9                | 8.3 | -            | 0.05        | 1.43        | 0.33        | 0.12        | -          | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 8.4 | -            | 0.50        | 12.23       | 0.43        | 0.30        | 81.80      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-22

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | 8.6 | 1082         | 0.08        | 11.01       | 0.40        | 0.15        | 81.63      | 323         | 12.96       | 0.17        | 65.72      | 7.72       | 0.50       |
| FM-3B              | 13.3                | 8.3 | -            | 0.05        | 1.51        | 0.27        | 0.11        | 13.07      | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.6 | -            | 0.08        | 5.27        | 0.24        | 0.45        | 71.19      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 2.6                 | 8.3 | -            | 0.08        | 3.19        | 0.28        | 0.08        | 40.28      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 8.7 | 1068         | 0.08        | 9.92        | 0.39        | 0.11        | 82.23      | 313         | 15.61       | 0.12        | 94.02      | 14.08      | 0.86       |

## MOBILE BAY CRUISE MB-22

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 21.33                  | 2.14            | 2.33           | 50             | 0.076            | 68.0              |
| MR-1B              | 13.9                | -                      | 2.79            | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 18.67                  | 1.83            | 2.40           | 55             | -                | -                 |
| DR-1S              | 1.0                 | 14.67                  | 0.94            | 2.03           | 85             | -                | -                 |
| DR-3S              | 1.0                 | 18.67                  | 0.79            | 2.46           | 55             | 0.059            | 59.0              |
| DR-3B              | 13.0                | -                      | 1.56            | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 22.00                  | 0.83            | 1.98           | 75             | -                | -                 |
| DR-5B              | 2.4                 | -                      | 0.76            | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 28.67                  | 2.56            | 2.17           | 55             | 0.124            | 114.0             |
| DR-7B              | 1.7                 | -                      | 3.49            | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 28.67                  | 1.54            | 1.87           | 55             | -                | -                 |
| PC-3S              | 1.0                 | 22.00                  | 2.04            | 2.52           | 50             | 0.145            | 111.0             |
| PC-3B              | 13.0                | -                      | 1.08            | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 42.00                  | 6.45            | 2.27           | 55             | 0.875            | 720.0             |
| PC-5B              | 2.4                 | -                      | 4.00            | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 26.00                  | 3.29            | 2.52           | 60             | 0.190            | 161.0             |
| FR-3B              | 12.1                | -                      | 1.55            | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 24.67                  | 40.28           | 2.36           | 40             | -                | -                 |
| FR-5B              | 2.0                 | -                      | 13.30           | -              | -              | -                | -                 |
| WB-1S              | 1.0                 | 32.67                  | 11.75           | 2.40           | 60             | 0.805            | 773.0             |
| WB-3S              | 1.0                 | 16.00                  | 25.17           | 2.32           | 65             | 1.378            | 1298.0            |
| WB-3B              | 13.3                | -                      | 1.81            | -              | -              | -                | -                 |
| WB-5S              | 1.0                 | 32.00                  | 32.15           | 2.24           | 50             | -                | -                 |
| WB-5B              | 2.4                 | -                      | 18.72           | -              | -              | -                | -                 |
| WB-7S              | 1.0                 | 33.00                  | 73.85           | 2.01           | 35             | 2.837            | 3529.0            |
| CP-3S              | 1.0                 | -                      | 5.03            | 1.72           | 65             | 0.352            | 444.0             |
| CP-3B              | 13.9                | -                      | 0.86            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 12.00                  | 0.61            | 1.74           | 80             | -                | -                 |

MOBILE BAY CRUISE MB-22

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| FM-3S              | 1.0                 | 16.67                  | 1.19            | 1.50           | 70             | 0.071            | 93.0              |
| FM-3B              | 13.3                | -                      | 1.01            | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 33.33                  | 3.74            | 1.71           | 70             | -                | -                 |
| FM-5B              | 2.6                 | -                      | 2.07            | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 40.67                  | 2.32            | 1.79           | 70             | 0.314            | 326.0             |

## **Mobile Bay Cruise Report**

**MB-23**

13, 18 February 1992

**Vessel:**

*R/V Deborah B.*

**Operation Area:**

- \* 13 February: Mississippi Sound to Bon Secour Bay following the Intracoastal Waterway, Bay Mouth following ship channel to Farewell Buoy
- \* 18 February: Mobile Bay from Fort Morgan to Mobile River

**Scientific Party:**

Felix Fernandez (Chief Scientist)  
Jean Cowan  
Alma Robichaux  
Tim Thibaut

**Supporting Agency:**

U.S. Geological Survey

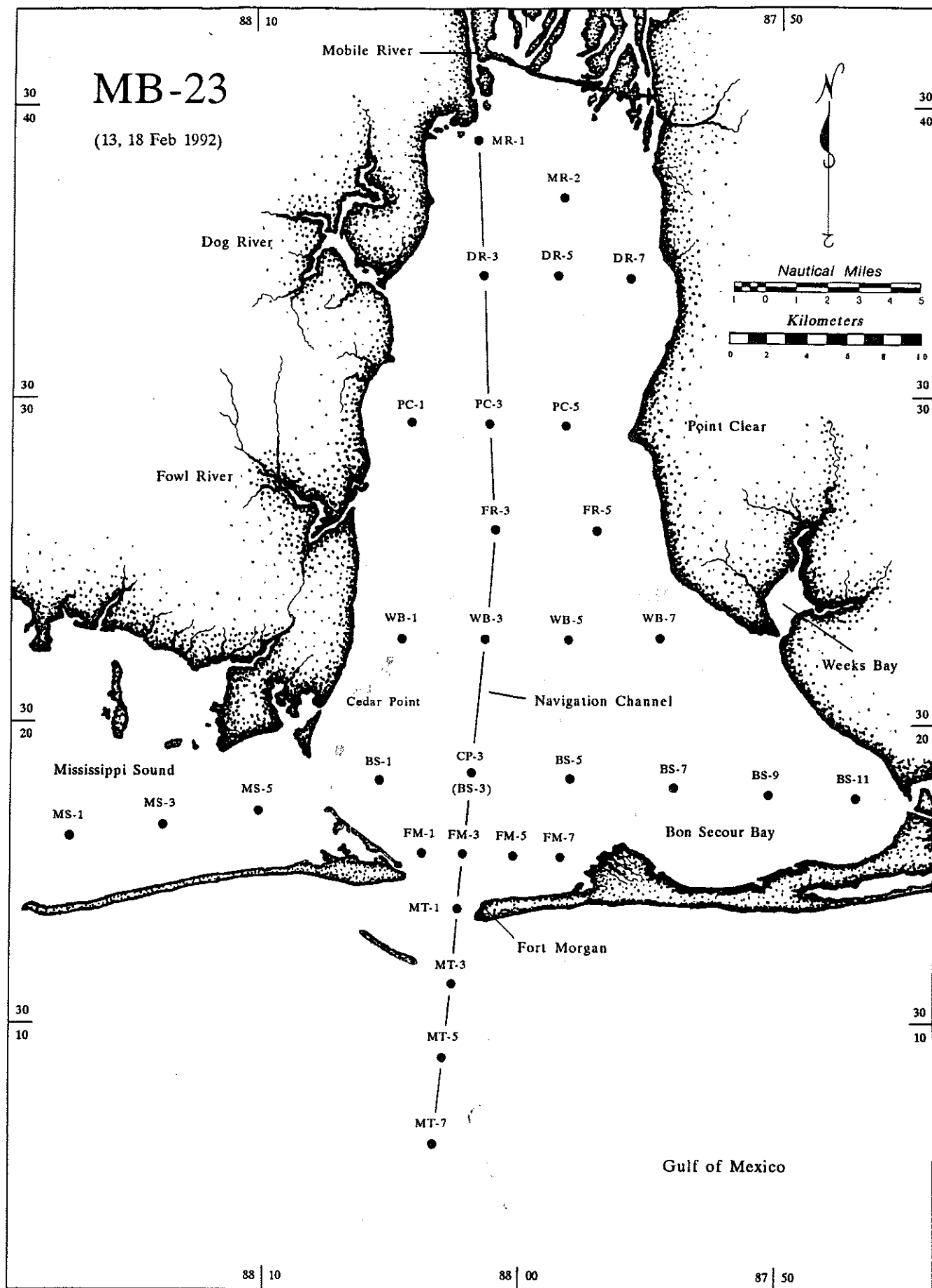
**Research Objectives:**

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 32 surface stations (22 of those including bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations. Surface sediment samples for PC/PN analysis were collected using a Shipek bottom sampler at selected Bay stations.

**Cruise Summary:**

13 February: Departed DISL 0700. Deadheaded to station MS-1. Began sampling 0800. Stations were continued going east to station BS-11, then south to MT-7. Returned to DISL 1330.

18 February: Departed DISL 0900. Deadheaded to station FM-1. Began sampling 0910. Stations were continued going upbay through station MR-1. Returned to DISL 1600.



## MOBILE BAY CRUISE MB-23

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 2/18/92       | 1437          | 30         | 38.2       | 88          | 1.9         | 12780.6          | 47180.8          | 14.6                | 2.4               | 14.8        | -           | -           |
| MR-1B              | 13.6                | 2/18/92       | 1437          | 30         | 38.2       | 88          | 1.9         | 12780.6          | 47180.8          | 14.6                | 27.9              | 15.2        | -           | -           |
| MR-2S              | 1.0                 | 2/18/92       | 1414          | 30         | 36.3       | 87          | 58.6        | 12814.8          | 47175.1          | 3.4                 | 0.1               | 14.2        | -           | -           |
| DR-3S              | 1.0                 | 2/18/92       | 1326          | 30         | 34.1       | 88          | 1.7         | 12780.6          | 47165.5          | 14.9                | 2.6               | 15.6        | -           | -           |
| DR-3B              | 13.9                | 2/18/92       | 1326          | 30         | 34.1       | 88          | 1.7         | 12780.6          | 47165.5          | 14.9                | 28.2              | 15.3        | -           | -           |
| DR-5S              | 1.0                 | 2/18/92       | 1342          | 30         | 34.3       | 87          | 58.5        | 12814.3          | 47167.7          | 4.0                 | 0.2               | 15.0        | -           | -           |
| DR-5B              | 3.0                 | 2/18/92       | 1342          | 30         | 34.3       | 87          | 58.5        | 12814.3          | 47167.7          | 4.0                 | 0.7               | 14.9        | -           | -           |
| DR-7S              | 1.0                 | 2/18/92       | 1356          | 30         | 34.4       | 87          | 56.1        | 12840.5          | 47169.2          | 3.2                 | 0.2               | 14.7        | -           | -           |
| DR-7B              | 2.2                 | 2/18/92       | 1356          | 30         | 34.4       | 87          | 56.1        | 12840.5          | 47169.2          | 3.2                 | 3.8               | 16.6        | -           | -           |
| PC-1S              | 1.0                 | 2/18/92       | 1259          | 30         | 29.1       | 88          | 4.0         | 12753.1          | 47145.9          | 3.4                 | 5.1               | 16.5        | -           | -           |
| PC-3S              | 1.0                 | 2/18/92       | 1243          | 30         | 28.4       | 88          | 1.0         | 12783.7          | 47144.5          | 14.6                | 4.5               | 16.3        | -           | -           |
| PC-3B              | 13.6                | 2/18/92       | 1243          | 30         | 28.4       | 88          | 1.0         | 12783.7          | 47144.5          | 14.6                | 29.1              | 15.8        | -           | -           |
| PC-5S              | 1.0                 | 2/18/92       | 1225          | 30         | 28.5       | 87          | 58.0        | 12815.4          | 47145.4          | 3.8                 | 1.1               | 15.7        | -           | -           |
| PC-5B              | 2.8                 | 2/18/92       | 1225          | 30         | 28.5       | 87          | 58.0        | 12815.4          | 47145.4          | 3.8                 | 10.1              | 15.5        | -           | -           |
| FR-3S              | 1.0                 | 2/18/92       | 1203          | 30         | 25.3       | 88          | 0.8         | 12783.8          | 47132.1          | 14.9                | 3.3               | 16.2        | -           | -           |
| FR-3B              | 13.9                | 2/18/92       | 1203          | 30         | 25.3       | 88          | 0.8         | 12783.8          | 47132.1          | 14.9                | 29.2              | 15.9        | -           | -           |
| FR-5S              | 1.0                 | 2/18/92       | 1145          | 30         | 25.2       | 87          | 56.9        | 12824.9          | 47132.8          | 3.6                 | 7.8               | 16.6        | -           | -           |
| FR-5B              | 2.6                 | 2/18/92       | 1145          | 30         | 25.2       | 87          | 56.9        | 12824.9          | 47132.8          | 3.6                 | 12.5              | 15.7        | -           | -           |
| WB-1S              | 1.0                 | 2/18/92       | 1042          | 30         | 22.6       | 88          | 4.4         | 12745.1          | 47120.4          | 3.6                 | 5.7               | 16.6        | -           | -           |
| WB-3S              | 1.0                 | 2/18/92       | 1058          | 30         | 22.7       | 88          | 1.2         | 12777.9          | 47121.4          | 14.6                | 3.5               | 16.3        | -           | -           |
| WB-3B              | 13.6                | 2/18/92       | 1058          | 30         | 22.7       | 88          | 1.2         | 12777.9          | 47121.4          | 14.6                | 29.3              | 15.9        | -           | -           |
| WB-5S              | 1.0                 | 2/18/92       | 1114          | 30         | 22.8       | 87          | 58.1        | 12810.4          | 47122.7          | 3.6                 | 10.1              | 16.6        | -           | -           |
| WB-5B              | 2.6                 | 2/18/92       | 1114          | 30         | 22.8       | 87          | 58.1        | 12810.4          | 47122.7          | 3.6                 | 12.1              | 16.2        | -           | -           |
| WB-7S              | 1.0                 | 2/18/92       | 1129          | 30         | 22.6       | 87          | 55.3        | 12840.2          | 47122.8          | 3.4                 | 9.6               | 17.0        | -           | -           |
| CP-3S              | 1.0                 | 2/18/92       | 1016          | 30         | 18.3       | 88          | 1.9         | 12768.4          | 47103.2          | 15.5                | 5.4               | 16.5        | -           | -           |
| CP-3B              | 14.5                | 2/18/92       | 1016          | 30         | 18.2       | 88          | 1.9         | 12768.4          | 47103.2          | 15.5                | 29.4              | 16.1        | -           | -           |
| FM-1S              | 1.0                 | 2/18/92       | 912           | 30         | 15.8       | 88          | 3.7         | 12747.9          | 47092.5          | 4.8                 | 7.7               | 17.0        | -           | -           |
| FM-3S              | 1.0                 | 2/18/92       | 933           | 30         | 15.5       | 88          | 2.3         | 12762.7          | 47091.4          | 14.6                | 7.5               | 16.4        | -           | -           |



## MOBILE BAY CRUISE MB-23

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3B              | 13.6                | 2/18/92       | 933           | 30         | 15.5       | 88          | 2.3         | 12762.7          | 47091.4          | 14.6                | 29.2              | 16.1        | -           | -           |
| FM-5S              | 1.0                 | 2/18/92       | 946           | 30         | 15.6       | 88          | 0.7         | 12778.9          | 47092.1          | 4.2                 | 7.8               | 16.5        | -           | -           |
| FM-5B              | 3.2                 | 2/18/92       | 946           | 30         | 15.6       | 88          | 0.7         | 12778.9          | 47092.1          | 4.2                 | 21.2              | 16.3        | -           | -           |
| FM-7S              | 1.0                 | 2/18/92       | 956           | 30         | 15.5       | 87          | 58.9        | 12797.6          | 47092.2          | 4.0                 | 13.3              | 17.2        | -           | -           |
| MS-1S              | 1.0                 | 2/13/92       | 801           | 30         | 15.3       | 88          | 18.4        | 12595.5          | 47087.7          | 4.2                 | 22.5              | 14.7        | -           | -           |
| MS-1B              | 3.2                 | 2/13/92       | 801           | 30         | 15.3       | 88          | 18.4        | 12595.5          | 47087.7          | 4.2                 | 27.7              | 14.7        | -           | -           |
| MS-3S              | 1.0                 | 2/13/92       | 820           | 30         | 15.5       | 88          | 14.4        | 12636.9          | 47089.2          | 4.0                 | 27.9              | 14.8        | -           | -           |
| MS-5S              | 1.0                 | 2/13/92       | 838           | 30         | 16.0       | 88          | 9.3         | 12690.3          | 47092.4          | 4.0                 | 16.2              | 13.8        | -           | -           |
| MS-5B              | 3.0                 | 2/13/92       | 838           | 30         | 16.0       | 88          | 9.3         | 12690.3          | 47092.4          | 4.0                 | 25.2              | 14.5        | -           | -           |
| BS-1S              | 1.0                 | 2/13/92       | 900           | 30         | 16.8       | 88          | 5.8         | 12727.3          | 47096.4          | 1.0                 | 9.9               | 13.2        | -           | -           |
| BS-3S              | 1.0                 | 2/13/92       | 916           | 30         | 17.1       | 88          | 2.1         | 12765.8          | 47098.1          | 15.5                | 11.2              | 13.5        | -           | -           |
| BS-3B              | 14.5                | 2/13/92       | 916           | 30         | 17.1       | 88          | 2.1         | 12765.8          | 47098.1          | 15.5                | 30.7              | 15.4        | -           | -           |
| BS-5S              | 1.0                 | 2/13/92       | 935           | 30         | 16.9       | 87          | 58.3        | 12805.1          | 47098.2          | 3.4                 | 11.9              | 13.3        | -           | -           |
| BS-7S              | 1.0                 | 2/13/92       | -             | 30         | 16.7       | 87          | 54.9        | 12840.0          | 47097.9          | 4.0                 | 13.4              | 13.6        | -           | -           |
| BS-7B              | 3.0                 | 2/13/92       | -             | 30         | 16.7       | 87          | 54.9        | 12840.0          | 47097.9          | 4.0                 | 19.7              | 13.9        | -           | -           |
| BS-9S              | 1.0                 | 2/13/92       | 1011          | 30         | 16.7       | 87          | 50.1        | 12890.1          | 47098.8          | 4.0                 | 11.8              | 13.2        | -           | -           |
| BS-11S             | 1.0                 | 2/13/92       | 1026          | 30         | 16.7       | 87          | 47.9        | 12913.1          | 47099.3          | 4.0                 | 13.8              | 14.1        | -           | -           |
| BS-11B             | 3.0                 | 2/13/92       | 1026          | 30         | 16.7       | 87          | 47.9        | 12913.1          | 47099.3          | 4.0                 | 15.0              | 13.6        | -           | -           |
| MT-1S              | 1.0                 | 2/13/92       | 1127          | 30         | 13.9       | 88          | 2.3         | 12761.8          | 47084.7          | 14.0                | 23.5              | 15.4        | -           | -           |
| MT-1B              | 13.0                | 2/13/92       | 1127          | 30         | 13.9       | 88          | 2.3         | 12761.8          | 47084.7          | 14.0                | 30.5              | 15.2        | -           | -           |
| MT-3S              | 1.0                 | 2/13/92       | 1145          | 30         | 11.6       | 88          | 2.7         | 12756.7          | 47074.7          | 15.8                | 23.3              | 15.8        | -           | -           |
| MT-3B              | 14.8                | 2/13/92       | 1145          | 30         | 11.6       | 88          | 2.7         | 12756.7          | 47074.7          | 15.8                | 31.6              | 15.0        | -           | -           |
| MT-5S              | 1.0                 | 2/13/92       | 1203          | 30         | 9.5        | 88          | 3.2         | 12750.2          | 47065.4          | 15.2                | 27.2              | 15.5        | -           | -           |
| MT-5B              | 14.2                | 2/13/92       | 1203          | 30         | 9.5        | 88          | 3.2         | 12750.2          | 47065.4          | 15.2                | 32.0              | 15.2        | -           | -           |
| MT-7S              | 1.0                 | 2/13/92       | 1220          | 30         | 7.2        | 88          | 4.2         | 12738.3          | 47055.5          | 18.3                | 26.0              | 15.3        | -           | -           |
| MT-7B              | 17.3                | 2/13/92       | 1220          | 30         | 7.2        | 88          | 4.2         | 12738.3          | 47055.5          | 18.3                | 32.6              | 15.4        | -           | -           |

## MOBILE BAY CRUISE MB-23

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 7.3 | 754          | 0.81        | 11.03       | 0.46        | 4.93        | 102.90     | 425         | 18.81       | 0.04        | 114.55     | 12.38      | 1.05       |
| MR-1B              | 13.6                | 7.2 | -            | 0.38        | 13.28       | 0.22        | 5.68        | 13.08      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 7.3 | -            | 1.01        | 12.10       | 0.40        | 3.54        | 125.60     | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 7.2 | 825          | 0.78        | 11.14       | 0.44        | 0.00        | 106.90     | 413         | 25.47       | 0.22        | 150.69     | 26.44      | 1.05       |
| DR-3B              | 13.9                | 7.2 | -            | 0.23        | 10.10       | 0.18        | 7.71        | 9.19       | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 7.3 | -            | 0.83        | 11.62       | 0.44        | 3.93        | 121.40     | -           | -           | -           | -          | -          | -          |
| DR-5B              | 3.0                 | 7.3 | -            | 1.01        | 13.21       | 0.52        | 4.56        | 120.20     | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 7.2 | 739          | 1.01        | 13.81       | 0.40        | 4.56        | 125.50     | -           | 20.81       | 0.00        | 60.14      | 7.47       | 0.47       |
| DR-7B              | 2.2                 | 7.2 | -            | 0.35        | 11.42       | 0.18        | 1.84        | 110.70     | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 7.2 | -            | 0.13        | 7.01        | 0.33        | 1.36        | 100.80     | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 8.3 | 862          | 0.15        | 3.22        | 0.21        | 0.45        | 108.50     | 387         | 21.99       | 0.45        | 76.29      | 10.67      | 0.81       |
| PC-3B              | 13.6                | 8.3 | -            | 0.05        | 4.36        | 0.07        | 0.94        | 3.82       | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 7.9 | 765          | 0.05        | 0.00        | 0.08        | 0.70        | 4.28       | 433         | 32.65       | 0.60        | 463.35     | 58.63      | 4.39       |
| PC-5B              | 2.8                 | 7.9 | -            | 0.13        | 2.65        | 0.24        | 3.29        | 86.72      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 8.1 | 827          | 0.20        | 5.98        | 0.22        | 2.42        | 104.50     | 380         | 14.65       | 0.45        | 221.11     | 32.91      | 2.25       |
| FR-3B              | 13.9                | 8.3 | -            | 0.10        | 7.87        | 0.07        | 0.70        | 5.06       | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 8.8 | -            | 0.20        | 0.45        | 0.16        | 0.57        | 89.91      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.6                 | 8.3 | -            | 0.10        | 1.78        | 0.32        | 1.96        | 74.21      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | 8.7 | 868          | 0.10        | 1.99        | 0.18        | 0.36        | 79.67      | 377         | 11.89       | 0.30        | 168.76     | 25.77      | 1.48       |
| WB-3S              | 1.0                 | 8.6 | 802          | 0.40        | 6.78        | 0.35        | 2.66        | 104.20     | 404         | 8.83        | 0.45        | 584.55     | 85.12      | 3.26       |
| WB-3B              | 13.6                | 8.3 | -            | 0.76        | 10.39       | 0.31        | 4.44        | -          | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | 8.8 | -            | 0.20        | 10.18       | 0.10        | 0.36        | 74.32      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.6                 | 8.1 | -            | 0.15        | 0.38        | 0.11        | 1.15        | 57.49      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | 8.7 | 1026         | 0.20        | 0.64        | 0.16        | 0.45        | 75.01      | 348         | 14.03       | 0.25        | 162.47     | 26.92      | 0.91       |
| CP-3S              | 1.0                 | 8.6 | 864          | 0.13        | 3.42        | 0.19        | 0.09        | 84.58      | 380         | 15.05       | 0.37        | 170.00     | 23.49      | 1.44       |
| CP-3B              | 14.5                | 8.3 | -            | 0.05        | 4.52        | 0.06        | 0.27        | 4.02       | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 8.6 | -            | 0.15        | 1.74        | 0.28        | 3.84        | 89.07      | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | 8.5 | 956          | 0.20        | 3.12        | 0.25        | 0.60        | 91.11      | 373         | 15.70       | 0.10        | 103.30     | 16.67      | 0.66       |

## MOBILE BAY CRUISE MB-23

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3B              | 13.6                | 8.3 | -            | 0.15        | 3.64        | 0.06        | 3.78        | 4.25       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.5 | -            | 0.18        | 3.58        | 0.26        | 0.60        | 87.73      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.2                 | 8.3 | -            | 0.18        | 0.00        | 0.09        | 1.13        | 18.05      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 8.5 | 1190         | 0.10        | 4.53        | 0.05        | 0.27        | 53.88      | 305         | 6.64        | 0.20        | 145.80     | 28.31      | 0.41       |
| MS-1S              | 1.0                 | 8.4 | 1573         | 0.03        | 0.00        | 0.07        | 0.88        | 21.77      | 247         | 10.37       | 0.37        | 80.21      | 13.18      | 0.42       |
| MS-1B              | 3.2                 | 8.3 | -            | 0.00        | 0.00        | 0.06        | 0.48        | 2.10       | -           | -           | -           | -          | -          | -          |
| MS-3S              | 1.0                 | 8.2 | -            | 0.03        | 0.00        | 0.07        | 0.21        | 11.64      | -           | -           | -           | -          | -          | -          |
| MS-5S              | 1.0                 | 8.4 | 1311         | 0.10        | 0.87        | 0.21        | 0.45        | 53.02      | 341         | 9.63        | 0.25        | 82.31      | 14.65      | 0.59       |
| MS-5B              | 3.0                 | 8.2 | -            | 0.13        | 0.32        | 0.14        | 0.48        | 16.52      | -           | -           | -           | -          | -          | -          |
| BS-1S              | 1.0                 | 8.7 | -            | 0.10        | 1.80        | 0.26        | 0.09        | 68.91      | -           | -           | -           | -          | -          | -          |
| BS-3S              | 1.0                 | 8.5 | 1066         | 0.10        | 1.78        | 0.27        | 0.09        | 76.16      | -           | 11.19       | 0.20        | 77.51      | 18.68      | 0.51       |
| BS-3B              | 14.5                | 8.3 | -            | 0.03        | 0.20        | 0.05        | 0.03        | 2.01       | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | 8.8 | -            | 0.25        | 0.06        | 0.07        | 0.45        | 65.68      | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | 8.8 | 1174         | 0.61        | 0.00        | 0.07        | 0.60        | 53.82      | 325         | 17.47       | 0.14        | 691.35     | 89.29      | 3.42       |
| BS-7B              | 3.0                 | 8.3 | -            | 0.30        | 0.00        | 0.12        | 0.24        | 35.19      | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | 8.7 | -            | 0.48        | 0.00        | 0.07        | 0.27        | 67.92      | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | 8.7 | 1186         | 0.35        | 0.00        | 0.06        | 0.09        | 43.36      | 348         | 23.85       | 0.75        | 724.75     | 71.73      | 4.96       |
| BS-11B             | 3.0                 | 8.6 | -            | 0.20        | 0.08        | 0.14        | 1.81        | 42.95      | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | 8.5 | -            | 0.05        | 0.00        | 0.04        | 0.45        | 16.78      | -           | -           | -           | -          | -          | -          |
| MT-1B              | 13.0                | 8.4 | -            | 0.03        | 0.00        | 0.05        | 0.00        | 1.55       | -           | -           | -           | -          | -          | -          |
| MT-3S              | 1.0                 | 8.5 | 1563         | 0.00        | 0.00        | 0.04        | 0.15        | 11.90      | 201         | 7.92        | 0.50        | 100.13     | 15.54      | 0.55       |
| MT-3B              | 14.8                | 8.4 | -            | 0.00        | 0.00        | 0.05        | 0.03        | 1.68       | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | 8.5 | -            | 0.05        | 0.00        | 0.06        | 0.00        | 17.86      | -           | -           | -           | -          | -          | -          |
| MT-5B              | 14.2                | 8.4 | -            | 0.08        | 0.00        | 0.04        | 0.06        | 1.48       | -           | -           | -           | -          | -          | -          |
| MT-7S              | 1.0                 | 8.4 | 1669         | 0.05        | 0.00        | 0.06        | 0.00        | 17.78      | 259         | -           | 0.55        | 109.64     | 14.22      | 0.61       |
| MT-7B              | 17.3                | 8.4 | -            | 0.00        | 0.00        | 0.05        | 0.00        | 1.22       | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-23

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m <sup>2</sup> /d |
|--------------------|---------------------|------------------------|----------------|----------------|------------------|--------------------------------|
| MR-1S              | 1.0                 | 28.00                  | 1.10           | 3.11           | 45               | 0.117                          |
| MR-1B              | 13.6                | -                      | 5.12           | -              | -                | -                              |
| MR-2S              | 1.0                 | 20.67                  | 1.42           | 2.69           | 45               | -                              |
| DR-3S              | 1.0                 | 19.33                  | 4.73           | 2.43           | 50               | 0.632                          |
| DR-3B              | 13.9                | -                      | 4.36           | -              | -                | 482.0                          |
| DR-5S              | 1.0                 | 22.67                  | 0.84           | 2.97           | 45               | -                              |
| DR-5B              | 3.0                 | -                      | 1.70           | -              | -                | -                              |
| DR-7S              | 1.0                 | 11.33                  | 2.33           | 1.73           | 65               | 0.197                          |
| DR-7B              | 2.2                 | -                      | -              | -              | -                | 221.0                          |
| PC-1S              | 1.0                 | 19.33                  | 2.54           | 1.84           | 70               | -                              |
| PC-3S              | 1.0                 | 14.00                  | 2.02           | 1.59           | 50               | 0.299                          |
| PC-3B              | 13.6                | -                      | 5.35           | -              | -                | 420.0                          |
| PC-5S              | 1.0                 | 47.50                  | 48.38          | 6.03           | 25               | -                              |
| PC-5B              | 2.8                 | -                      | 19.25          | -              | -                | 106.0                          |
| FR-3S              | 1.0                 | 21.67                  | 25.49          | 2.27           | 50               | 0.341                          |
| FR-3B              | 13.9                | -                      | 5.49           | -              | -                | 1323.0                         |
| FR-5S              | 1.0                 | 20.00                  | 19.67          | 1.06           | 115              | -                              |
| FR-5B              | 2.6                 | -                      | 9.45           | -              | -                | -                              |
| WB-1S              | 1.0                 | 9.33                   | 33.71          | 1.32           | 105              | 1.455                          |
| WB-3S              | 1.0                 | 23.85                  | 75.07          | 1.95           | 50               | 1579.0                         |
| WB-3B              | 13.6                | -                      | 5.35           | -              | -                | 4060.0                         |
| WB-5S              | 1.0                 | 26.40                  | 24.95          | 1.27           | 60               | -                              |
| WB-5B              | 2.6                 | -                      | 17.72          | -              | -                | -                              |
| WB-7S              | 1.0                 | 15.33                  | 6.53           | 1.19           | 145              | 0.528                          |
| CP-3S              | 1.0                 | 19.33                  | 14.49          | 1.43           | 100              | 900.0                          |
| CP-3B              | 14.5                | -                      | 5.60           | -              | -                | 2159.0                         |
| FM-1S              | 1.0                 | 25.33                  | 5.32           | 0.91           | 155              | -                              |
| FM-3S              | 1.0                 | 10.00                  | 7.12           | 1.03           | 150              | -                              |
|                    |                     |                        |                |                | 0.539            | 850.0                          |

## MOBILE BAY CRUISE MB-23

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTE<br>(m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m <sup>2</sup> /d |
|--------------------|---------------------|------------------------|-------------|----------------|------------------|--------------------------------|
| FM-3B              | 13.6                | -                      | 4.38        | -              | -                | -                              |
| FM-5S              | 1.0                 | -                      | 4.45        | 160            | -                | -                              |
| FM-5B              | 3.2                 | -                      | 8.86        | -              | -                | -                              |
| FM-7S              | 1.0                 | 6.67                   | 2.61        | 160            | 0.626            | 1227.0                         |
| MS-1S              | 1.0                 | 20.67                  | 4.61        | 170            | 0.285            | 696.0                          |
| MS-1B              | 3.2                 | -                      | 5.27        | -              | -                | -                              |
| MS-3S              | 1.0                 | 18.67                  | 5.20        | 95             | -                | -                              |
| MS-5S              | 1.0                 | 4.67                   | 6.99        | 125            | 0.500            | 648.0                          |
| MS-5B              | 3.0                 | -                      | 7.07        | -              | -                | -                              |
| BS-1S              | 1.0                 | 30.67                  | 2.63        | 185            | -                | -                              |
| BS-3S              | 1.0                 | 9.33                   | 4.88        | 170            | 0.353            | 640.0                          |
| BS-3B              | 14.5                | -                      | 6.75        | -              | -                | -                              |
| BS-5S              | 1.0                 | 34.00                  | 12.95       | 70             | -                | -                              |
| BS-7S              | 1.0                 | 25.33                  | 36.85       | 75             | 2.422            | 2068.0                         |
| BS-7B              | 3.0                 | -                      | 21.39       | -              | -                | -                              |
| BS-9S              | 1.0                 | 28.67                  | 31.87       | 85             | -                | -                              |
| BS-11S             | 1.0                 | 35.33                  | 30.64       | 50             | 2.239            | 1814.0                         |
| BS-11B             | 3.0                 | -                      | 29.75       | -              | -                | -                              |
| MT-1S              | 1.0                 | 37.00                  | 6.33        | 150            | -                | -                              |
| MT-1B              | 13.0                | -                      | 4.44        | -              | -                | -                              |
| MT-3S              | 1.0                 | 34.00                  | 4.11        | 175            | 0.279            | 993.0                          |
| MT-3B              | 14.8                | -                      | 2.33        | -              | -                | -                              |
| MT-5S              | 1.0                 | 42.67                  | 1.46        | 170            | -                | -                              |
| MT-5B              | 14.2                | -                      | 2.85        | -              | -                | -                              |
| MT-7S              | 1.0                 | 42.67                  | 1.72        | 210            | 0.272            | 1009.0                         |
| MT-7B              | 17.3                | -                      | 1.94        | -              | -                | -                              |

## **Mobile Bay Cruise Report**

**MB-24**

27, 30 March 1992

**Vessel:**

*R/V Deborah B.*

**Operation Area:**

- \* 27 March: Mobile Bay from Fort Morgan to Mobile River
- \* 30 March: Mississippi Sound to Bon Secour Bay following the Intracoastal Waterway, Bay Mouth following ship channel to Farewell Buoy

**Scientific Party:**

Felix Fernandez (Chief Scientist)  
Jean Cowan  
Alma Robichaux  
Tim Thibaut

**Supporting Agency:**

U.S. Geological Survey

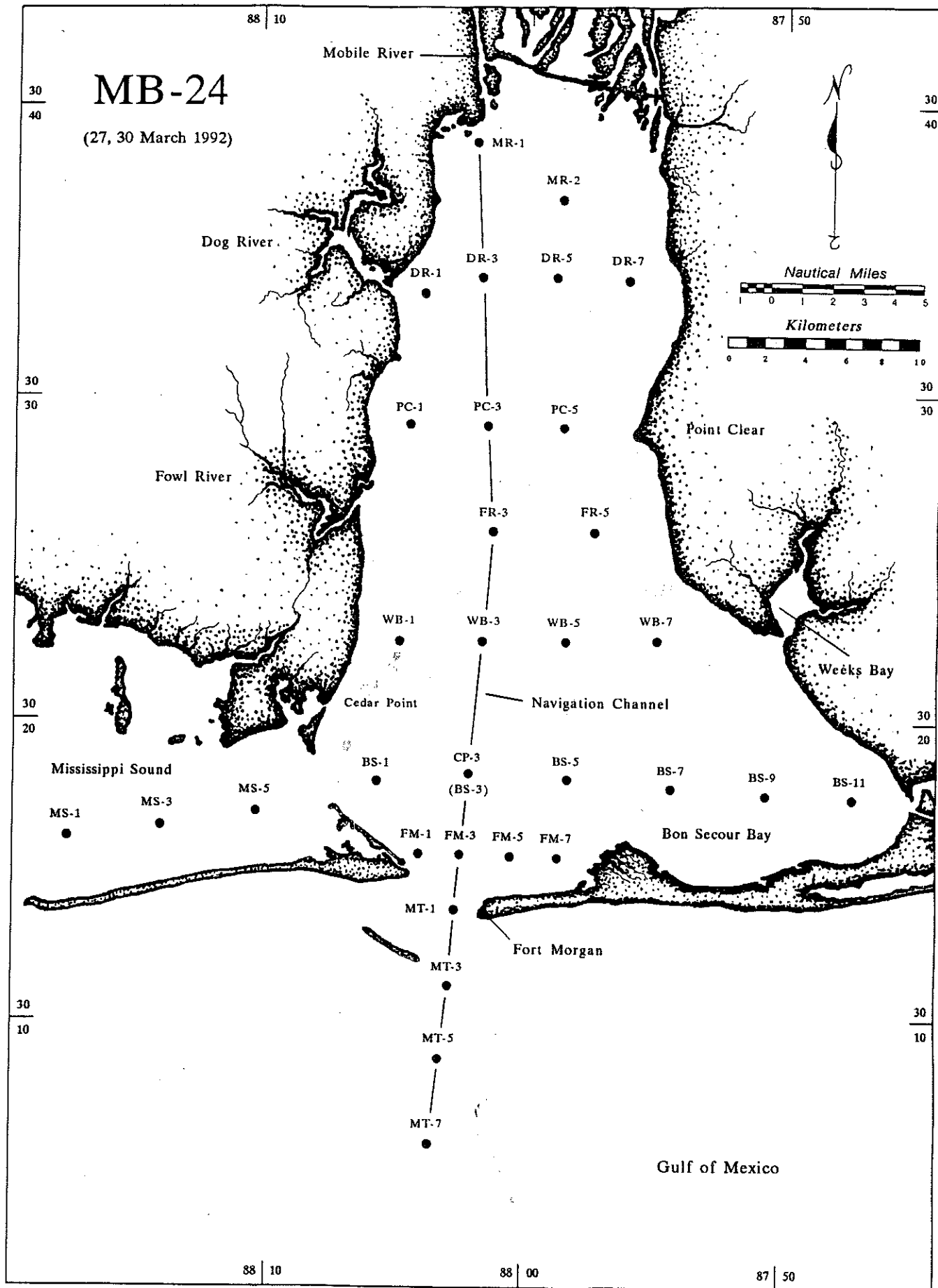
**Research Objectives:**

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 33 surface stations (22 of those including bottom water casts). Samples were taken for  $\text{TCO}_2$ , DOC, DON, DOP, POP, PC/PN, taxonomy identification and  $^{14}\text{C}$  productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk (only on 3/30) and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations. Surface sediment samples for PC/PN analysis were collected using a Shipek bottom sampler at selected Bay stations.

**Cruise Summary:**

27 March: Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0710. Stations were continued going upbay through station MR-1. Returned to DISL 1400.

30 March: Departed DISL 0730. Deadheaded to station MS-1. Began sampling 0830. Stations were continued going east to station BS-11, then south to MT-7. Returned to DISL 1330.



## MOBILE BAY CRUISE MB-24

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 3/27/92       | 1237          | 30         | 38.0       | 88          | 2.0         | 12780.3          | 47180.1          | 14.9                | 0.5               | 18.7        | 7.8         | 84          |
| MR-1B              | 13.9                | 3/27/92       | 1237          | 30         | 38.0       | 88          | 2.0         | 12780.3          | 47180.1          | 14.9                | 24.5              | 17.8        | 5.6         | 68          |
| MR-2S              | 1.0                 | 3/27/92       | 1217          | 30         | 36.3       | 87          | 58.5        | 12815.6          | 47175.4          | 3.6                 | 0.0               | 18.0        | 10.3        | 109         |
| DR-1S              | 1.0                 | 3/27/92       | 1109          | 30         | 32.5       | 88          | 3.9         | 12755.8          | 47158.9          | 2.7                 | 4.0               | 18.2        | 11.7        | 128         |
| DR-3S              | 1.0                 | 3/27/92       | 1129          | 30         | 34.0       | 88          | 1.6         | 12781.0          | 47165.2          | 14.3                | 1.4               | 17.9        | 8.7         | 93          |
| DR-3B              | 13.3                | 3/27/92       | 1129          | 30         | 34.0       | 88          | 1.6         | 12781.0          | 47165.2          | 14.3                | 29.1              | 17.9        | 5.8         | 73          |
| DR-5S              | 1.0                 | 3/27/92       | 1146          | 30         | 34.2       | 87          | 58.5        | 12814.2          | 47167.4          | 3.6                 | 0.2               | 17.4        | 8.6         | 90          |
| DR-5B              | 2.6                 | 3/27/92       | 1146          | 30         | 34.2       | 87          | 58.5        | 12814.2          | 47167.4          | 3.6                 | 0.4               | 16.9        | 8.2         | 85          |
| DR-7S              | 1.0                 | 3/27/92       | 1159          | 30         | 34.5       | 87          | 56.1        | 12840.3          | 47169.4          | 2.7                 | 0.1               | 18.2        | 9.9         | 105         |
| DR-7B              | 1.7                 | 3/27/92       | 1159          | 30         | 34.5       | 87          | 56.1        | 12840.3          | 47169.4          | 2.7                 | 0.1               | 16.8        | 8.0         | 83          |
| PC-1S              | 1.0                 | 3/27/92       | 1051          | 30         | 29.1       | 88          | 4.0         | 12753.1          | 47145.8          | 3.0                 | 4.9               | 17.2        | 10.6        | 113         |
| PC-3S              | 1.0                 | 3/27/92       | 1033          | 30         | 28.4       | 88          | 1.1         | 12783.1          | 47144.1          | 14.3                | 2.0               | 18.8        | 9.2         | 100         |
| PC-3B              | 13.3                | 3/27/92       | 1033          | 30         | 28.4       | 88          | 1.1         | 12783.1          | 47144.1          | 14.3                | 14.1              | 17.3        | 6.7         | 76          |
| PC-5S              | 1.0                 | 3/27/92       | 1017          | 30         | 28.4       | 87          | 58.0        | 12815.3          | 47145.4          | 3.6                 | 1.9               | 17.4        | 10.1        | 106         |
| PC-5B              | 2.6                 | 3/27/92       | 1017          | 30         | 28.4       | 87          | 58.0        | 12815.3          | 47145.4          | 3.6                 | 8.0               | 16.6        | 7.2         | 77          |
| FR-3S              | 1.0                 | 3/27/92       | 955           | 30         | 25.4       | 88          | 0.8         | 12784.9          | 47132.3          | 6.4                 | 2.9               | 18.3        | 10.2        | 110         |
| FR-3B              | 5.4                 | 3/27/92       | 955           | 30         | 25.4       | 88          | 0.8         | 12784.9          | 47132.3          | 6.4                 | 20.2              | 17.4        | 7.7         | 91          |
| FR-5S              | 1.0                 | 3/27/92       | 935           | 30         | 25.1       | 87          | 56.9        | 12825.2          | 47132.2          | 3.4                 | 3.3               | 16.9        | 10.6        | 112         |
| FR-5B              | 2.4                 | 3/27/92       | 935           | 30         | 25.1       | 87          | 56.9        | 12825.2          | 47132.2          | 3.4                 | 12.5              | 16.3        | 5.1         | 56          |
| WB-1S              | 1.0                 | 3/27/92       | 832           | 30         | 22.6       | 88          | 4.3         | 12745.7          | 47120.3          | 3.4                 | 6.3               | 16.8        | 11.3        | 121         |
| WB-3S              | 1.0                 | 3/27/92       | 848           | 30         | 22.7       | 88          | 1.3         | 12777.7          | 47121.6          | 14.3                | 4.3               | 17.2        | 11.4        | 122         |
| WB-3B              | 13.3                | 3/27/92       | 848           | 30         | 22.7       | 88          | 1.3         | 12777.7          | 47121.6          | 14.3                | 26.6              | 17.8        | 8.1         | 100         |
| WB-5S              | 1.0                 | 3/27/92       | 904           | 30         | 22.8       | 87          | 58.1        | 12810.4          | 47122.6          | 3.4                 | 3.5               | 17.1        | 8.9         | 94          |
| WB-5B              | 2.4                 | 3/27/92       | 904           | 30         | 22.8       | 87          | 58.1        | 12810.4          | 47122.6          | 3.4                 | 4.1               | 16.6        | 9.5         | 100         |
| WB-7S              | 1.0                 | 3/27/92       | 918           | 30         | 22.4       | 87          | 55.2        | 12840.9          | 47122.1          | 3.0                 | 4.8               | 16.7        | 10.8        | 114         |
| CP-3S              | 1.0                 | 3/27/92       | 807           | 30         | 18.3       | 88          | 1.9         | 12768.5          | 47103.2          | 14.6                | 7.0               | 16.5        | 11.4        | 122         |
| CP-3B              | 13.6                | 3/27/92       | 807           | 30         | 18.3       | 88          | 1.9         | 12768.5          | 47103.2          | 14.6                | 23.8              | 17.6        | 8.4         | 101         |
| FM-1S              | 1.0                 | 3/27/92       | 709           | 30         | 15.7       | 88          | 3.7         | 12748.1          | 47092.1          | 4.6                 | 8.1               | 16.5        | 9.5         | 103         |



## MOBILE BAY CRUISE MB-24

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3S              | 1.0                 | 3/27/92       | 721           | 30         | 15.5       | 88          | 2.3         | 12762.5          | 47091.4          | 14.6                | 6.5               | 16.4        | 8.5         | 91          |
| FM-3B              | 13.6                | 3/27/92       | 721           | 30         | 15.5       | 88          | 2.3         | 12762.5          | 47091.4          | 14.6                | 29.7              | 18.1        | 7.5         | 95          |
| FM-5S              | 1.0                 | 3/27/92       | 733           | 30         | 15.6       | 88          | 0.8         | 12778.6          | 47092.3          | 4.2                 | 5.4               | 16.2        | 8.8         | 92          |
| FM-5B              | 3.2                 | 3/27/92       | 733           | 30         | 15.6       | 88          | 0.8         | 12778.6          | 47092.3          | 4.2                 | 5.4               | 16.1        | 9.0         | 95          |
| FM-7S              | 1.0                 | 3/27/92       | 746           | 30         | 15.6       | 87          | 58.9        | 12798.2          | 47092.4          | 3.6                 | 5.9               | 16.4        | 11.5        | 122         |
| MS-1S              | 1.0                 | 3/30/92       | 835           | 30         | 15.3       | 88          | 18.4        | 12595.6          | 47087.7          | 4.0                 | 17.6              | 18.2        | 7.9         | 93          |
| MS-1B              | 3.0                 | 3/30/92       | 835           | 30         | 15.3       | 88          | 18.4        | 12595.6          | 47087.7          | 4.0                 | 23.9              | 18.2        | 7.4         | 91          |
| MS-3S              | 1.0                 | 3/30/92       | 854           | 30         | 15.5       | 88          | 14.4        | 12636.8          | 47089.4          | 3.0                 | 11.9              | 18.3        | 8.4         | 96          |
| MS-5S              | 1.0                 | 3/30/92       | 912           | 30         | 16.1       | 88          | 10.3        | 12680.3          | 47092.6          | 4.6                 | 13.8              | 18.4        | 8.6         | 100         |
| MS-5B              | 3.6                 | 3/30/92       | 912           | 30         | 16.1       | 88          | 10.3        | 12680.3          | 47092.6          | 4.6                 | 17.4              | 18.1        | 9.7         | 114         |
| BS-1S              | 1.0                 | 3/30/92       | 933           | 30         | 16.9       | 88          | 5.8         | 12727.1          | 47096.7          | 4.0                 | 7.5               | 18.0        | 9.2         | 101         |
| BS-3S              | 1.0                 | 3/30/92       | 945           | 30         | 17.1       | 88          | 2.1         | 12765.7          | 47098.2          | 15.5                | 7.5               | 18.7        | 7.1         | 80          |
| BS-3B              | 14.5                | 3/30/92       | 945           | 30         | 17.1       | 88          | 2.1         | 12765.7          | 47098.2          | 15.5                | 29.6              | 18.6        | 6.6         | 84          |
| BS-5S              | 1.0                 | 3/30/92       | 1008          | 30         | 16.9       | 87          | 58.3        | 12804.8          | 47098.2          | 3.6                 | 7.1               | 18.1        | 9.3         | 103         |
| BS-7S              | 1.0                 | 3/30/92       | 1021          | 30         | 16.8       | 87          | 54.9        | 12839.9          | 47098.2          | 3.6                 | 6.6               | 18.8        | 9.4         | 105         |
| BS-7B              | 2.6                 | 3/30/92       | 1021          | 30         | 16.8       | 87          | 54.9        | 12839.9          | 47098.2          | 3.6                 | 15.5              | 18.3        | 7.1         | 83          |
| BS-9S              | 1.0                 | 3/30/92       | 1035          | 30         | 16.8       | 87          | 51.1        | 12879.4          | 47098.9          | 2.7                 | 7.5               | 18.6        | 9.3         | 104         |
| BS-11S             | 1.0                 | 3/30/92       | 1053          | 30         | 16.7       | 87          | 47.9        | 12912.8          | 47099.3          | 5.2                 | 6.9               | 18.9        | 9.0         | 101         |
| BS-11B             | 4.2                 | 3/30/92       | 1053          | 30         | 16.7       | 87          | 47.9        | 12912.8          | 47099.3          | 5.2                 | 12.1              | 17.7        | 4.8         | 55          |
| MT-1S              | 1.0                 | 3/30/92       | 1149          | 30         | 13.9       | 88          | 2.3         | 12761.3          | 47084.7          | 15.5                | 13.5              | 19.6        | 8.8         | 104         |
| MT-1B              | 14.5                | 3/30/92       | 1149          | 30         | 13.9       | 88          | 2.3         | 12761.3          | 47084.7          | 15.5                | 29.7              | 18.5        | 6.9         | 88          |
| MT-3S              | 1.0                 | 3/30/92       | 1205          | 30         | 11.6       | 88          | 2.7         | 12756.3          | 47074.8          | 13.7                | 25.6              | 19.5        | 7.6         | 96          |
| MT-3B              | 12.7                | 3/30/92       | 1205          | 30         | 11.6       | 88          | 2.7         | 12756.3          | 47074.8          | 13.7                | 30.5              | 18.5        | 7.0         | 90          |
| MT-5S              | 1.0                 | 3/30/92       | 1220          | 30         | 9.5        | 88          | 3.2         | 12750.1          | 47065.8          | 15.8                | 27.7              | 19.6        | 8.1         | 105         |
| MT-5B              | 14.8                | 3/30/92       | 1220          | 30         | 9.5        | 88          | 3.2         | 12750.1          | 47065.8          | 15.8                | 31.1              | 18.6        | 7.3         | 94          |
| MT-7S              | 1.0                 | 3/30/92       | 1237          | 30         | 7.3        | 88          | 4.2         | 12738.5          | 47055.7          | 18.0                | 28.7              | 19.7        | 7.8         | 101         |
| MT-7B              | 17.0                | 3/30/92       | 1237          | 30         | 7.3        | 88          | 4.2         | 12738.5          | 47055.7          | 18.0                | 32.4              | 18.7        | 6.4         | 84          |

## MOBILE BAY CRUISE MB-24

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -  | 737          | 0.84        | 16.14       | 0.46        | 5.95        | 107.80     | -           | 18.74       | 0.00        | 93.61      | 6.68       | 0.76       |
| MR-1B              | 13.9                | -  | -            | 0.89        | 6.37        | 0.80        | 13.19       | 40.39      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -  | -            | 1.16        | 15.00       | 0.35        | 3.81        | 101.20     | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | -  | -            | 0.26        | 9.51        | 0.35        | 1.51        | 89.58      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -  | 760          | 1.05        | 16.41       | 0.50        | 4.94        | 105.60     | -           | 15.10       | 0.00        | 83.55      | 6.90       | 0.76       |
| DR-3B              | 13.3                | -  | -            | 0.74        | 1.63        | 0.61        | 6.57        | 26.16      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -  | -            | 1.08        | 15.70       | 0.40        | 3.10        | 106.50     | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.6                 | -  | -            | 1.11        | 17.38       | 0.50        | 3.42        | 105.10     | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -  | 695          | 1.37        | 16.82       | 0.52        | 2.40        | 106.50     | -           | 17.20       | 0.00        | 105.13     | 8.36       | 1.09       |
| DR-7B              | 1.7                 | -  | -            | 1.26        | 17.24       | 0.51        | 2.52        | 107.00     | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | -  | -            | 0.42        | 13.52       | 0.41        | 0.57        | 94.08      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | -  | 770          | 0.74        | 15.90       | 0.48        | 2.68        | 102.40     | -           | 16.49       | 0.01        | 85.24      | 8.77       | 0.78       |
| PC-3B              | 13.3                | -  | -            | 0.76        | 10.08       | 0.58        | 6.88        | 68.91      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | -  | 748          | 0.76        | 15.30       | 0.50        | 1.55        | 104.10     | -           | 15.32       | 0.04        | 102.80     | 10.19      | 0.95       |
| PC-5B              | 2.6                 | -  | -            | 0.79        | 13.01       | 0.53        | 4.97        | 87.04      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -  | 809          | 0.74        | 15.96       | 0.50        | 3.26        | 102.00     | -           | 14.14       | 0.11        | 66.96      | 6.34       | 0.85       |
| FR-3B              | 5.4                 | -  | -            | 0.74        | 6.85        | 0.54        | 5.21        | 49.36      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | -  | -            | 0.76        | 14.68       | 0.52        | 3.10        | 100.70     | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.4                 | -  | -            | 0.87        | 11.13       | 0.88        | 8.95        | 83.64      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | -  | 857          | 0.21        | 4.99        | 0.31        | 0.45        | 75.09      | -           | 10.89       | 0.19        | 104.36     | 13.53      | 0.93       |
| WB-3S              | 1.0                 | -  | 854          | 0.68        | 13.86       | 0.48        | 2.60        | 99.42      | -           | 13.61       | 0.07        | 84.99      | 9.36       | 0.78       |
| WB-3B              | 13.3                | -  | -            | 0.53        | 3.84        | 0.44        | 4.16        | 30.87      | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | -  | -            | 0.74        | 14.70       | 0.47        | 3.30        | 100.20     | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.4                 | -  | -            | 0.74        | 15.28       | 0.49        | 2.21        | 99.66      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | -  | 851          | 0.47        | 12.32       | 0.44        | 0.49        | 94.78      | -           | 15.02       | 0.13        | 107.89     | 14.13      | 1.06       |
| CP-3S              | 1.0                 | -  | 967          | 0.53        | 11.88       | 0.45        | 1.08        | 90.23      | -           | 12.40       | 0.00        | 64.58      | 7.11       | 0.55       |
| CP-3B              | 13.6                | -  | -            | 0.61        | 4.55        | 0.41        | 2.17        | 34.99      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.42        | 9.15        | 0.48        | 0.26        | 84.93      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-24

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | -  | 938          | 0.55        | 11.55       | 0.43        | 0.61        | 90.70      | -           | 12.53       | 0.00        | 64.71      | 8.11       | 0.59       |
| FM-3B              | 13.6                | -  | -            | 0.21        | 2.38        | 0.17        | 1.58        | 14.62      | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -  | -            | 0.61        | 10.22       | 0.42        | 1.94        | 93.03      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.2                 | -  | -            | 0.63        | 12.38       | 0.44        | 1.62        | 93.05      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | 912          | 0.47        | 11.31       | 0.39        | 0.61        | 91.39      | -           | 11.43       | 0.03        | 74.70      | 9.13       | 0.79       |
| MS-1S              | 1.0                 | -  | 1401         | 0.32        | 0.19        | 0.12        | 1.86        | 15.63      | -           | 12.45       | 0.43        | 74.08      | 9.87       | 0.71       |
| MS-1B              | 3.0                 | -  | -            | 0.29        | 0.16        | 0.10        | 1.00        | 35.30      | -           | -           | -           | -          | -          | -          |
| MS-3S              | 1.0                 | -  | -            | 0.21        | 0.90        | 0.23        | 0.45        | 57.18      | -           | -           | -           | -          | -          | -          |
| MS-5S              | 1.0                 | -  | 1212         | 0.21        | 1.40        | 0.32        | 0.69        | 58.50      | -           | 9.55        | -           | 55.65      | 6.57       | 0.44       |
| MS-5B              | 3.6                 | -  | -            | 0.29        | 1.36        | 0.43        | 3.10        | 58.09      | -           | -           | -           | -          | -          | -          |
| BS-1S              | 1.0                 | -  | -            | 0.21        | 7.03        | 0.45        | 0.06        | 85.84      | -           | -           | -           | -          | -          | -          |
| BS-3S              | 1.0                 | -  | 961          | 0.21        | 8.08        | 0.49        | 0.10        | 85.41      | -           | 13.63       | 0.14        | 94.25      | 13.95      | 0.82       |
| BS-3B              | 14.5                | -  | -            | 0.21        | 2.89        | 0.31        | 3.30        | 52.76      | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | -  | -            | 0.21        | 6.88        | 0.49        | 0.18        | 89.42      | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | -  | 932          | 0.21        | 7.50        | 0.52        | 0.06        | 87.16      | -           | 14.07       | 0.14        | 135.50     | 18.65      | 1.21       |
| BS-7B              | 2.6                 | -  | -            | 0.42        | 3.84        | 0.58        | 3.18        | 58.34      | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | -  | -            | 0.21        | 0.53        | 0.18        | 0.10        | 80.57      | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | -  | 930          | 0.21        | 0.69        | 0.31        | 0.14        | 85.77      | -           | 15.54       | 0.14        | 166.26     | 21.53      | 1.08       |
| BS-11B             | 4.2                 | -  | -            | 0.21        | 2.84        | 0.68        | 10.58       | 85.74      | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | -  | -            | 0.21        | 2.41        | 0.37        | 0.18        | 64.40      | -           | -           | -           | -          | -          | -          |
| MT-1B              | 14.5                | -  | -            | 0.21        | 0.30        | 0.11        | 0.92        | 15.00      | -           | -           | -           | -          | -          | -          |
| MT-3S              | 1.0                 | -  | 1621         | 0.11        | 0.17        | 0.11        | 0.06        | 24.37      | -           | 6.18        | 0.24        | 57.33      | 7.45       | 0.41       |
| MT-3B              | 12.7                | -  | -            | 0.11        | 0.92        | 0.07        | 0.06        | 10.80      | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | -  | -            | 0.11        | 0.01        | 0.08        | 0.14        | 18.66      | -           | -           | -           | -          | -          | -          |
| MT-5B              | 14.8                | -  | -            | 0.11        | 0.11        | 0.06        | 0.00        | 8.61       | -           | -           | -           | -          | -          | -          |
| MT-7S              | 1.0                 | -  | 1742         | 0.08        | 0.00        | 0.07        | 0.00        | 16.40      | -           | 4.87        | 0.32        | 36.06      | 5.01       | 0.19       |
| MT-7B              | 17.0                | -  | -            | 0.08        | 0.00        | 0.15        | 0.45        | 11.73      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-24

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 15.67                  | 3.82            | 2.41           | -              | 0.199            | 143.0             |
| MR-1B              | 13.9                | -                      | 1.77            | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 9.00                   | 1.81            | 2.23           | -              | -                | -                 |
| DR-1S              | 1.0                 | 5.67                   | 7.05            | 1.30           | -              | -                | -                 |
| DR-3S              | 1.0                 | 15.00                  | 3.37            | 2.28           | -              | 0.151            | 115.0             |
| DR-3B              | 13.3                | -                      | 4.29            | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 17.67                  | 4.21            | 2.90           | -              | -                | -                 |
| DR-5B              | 2.6                 | -                      | 3.34            | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 21.67                  | 5.18            | 3.55           | -              | 0.176            | 90.0              |
| DR-7B              | 1.7                 | -                      | 7.78            | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 10.33                  | 37.71           | 1.46           | -              | -                | -                 |
| PC-3S              | 1.0                 | 9.67                   | 8.86            | 1.82           | -              | 0.285            | 365.0             |
| PC-3B              | 13.3                | -                      | 2.83            | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 13.00                  | 10.63           | 1.82           | -              | 0.540            | 520.0             |
| PC-5B              | 2.6                 | -                      | 6.53            | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 12.33                  | 10.43           | 1.76           | -              | 0.872            | 841.0             |
| FR-3B              | 5.4                 | -                      | 4.68            | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 13.00                  | 8.06            | 1.87           | -              | -                | -                 |
| FR-5B              | 2.4                 | -                      | 4.21            | -              | -              | -                | -                 |
| WB-1S              | 1.0                 | 12.33                  | 24.50           | 1.46           | -              | 1.014            | 1241.0            |
| WB-3S              | 1.0                 | 7.00                   | 8.41            | 1.62           | -              | 0.649            | 694.0             |
| WB-3B              | 13.3                | -                      | 4.80            | -              | -              | -                | -                 |
| WB-5S              | 1.0                 | 11.67                  | 5.42            | 1.86           | -              | -                | -                 |
| WB-5B              | 2.4                 | -                      | 7.82            | -              | -              | -                | -                 |
| WB-7S              | 1.0                 | 9.00                   | 3.75            | 1.80           | -              | 1.220            | 1129.0            |
| CP-3S              | 1.0                 | 9.00                   | 6.81            | 1.14           | -              | 0.376            | 539.0             |
| CP-3B              | 13.6                | -                      | 6.12            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 7.00                   | 5.49            | 1.33           | -              | -                | -                 |

## MOBILE BAY CRUISE MB-24

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | SESTON CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|------------------------|----------------|----------------|------------------|-------------------|
| FM-3S              | 1.0                 | 11.67                  | 8.76                   | 1.33           | -              | 0.265            | 377.0             |
| FM-3B              | 13.6                | -                      | 7.65                   | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 9.67                   | 8.34                   | 1.42           | -              | -                | -                 |
| FM-5B              | 3.2                 | -                      | 9.35                   | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 9.00                   | 3.75                   | 1.53           | -              | 0.471            | 592.0             |
| MS-1S              | 1.0                 | 13.57                  | 4.66                   | 1.05           | 125            | 0.678            | 968.0             |
| MS-1B              | 3.0                 | -                      | 3.54                   | -              | -              | -                | -                 |
| MS-3S              | 1.0                 | 10.60                  | 3.73                   | 1.20           | 115            | -                | -                 |
| MS-5S              | 1.0                 | 14.50                  | 2.34                   | 1.32           | 140            | 0.346            | 465.0             |
| MS-5B              | 3.6                 | -                      | 2.40                   | -              | -              | -                | -                 |
| BS-1S              | 1.0                 | 6.83                   | 5.00                   | 1.17           | 125            | -                | -                 |
| BS-3S              | 1.0                 | 8.20                   | 5.82                   | 1.00           | 130            | 0.635            | 1027.0            |
| BS-3B              | 14.5                | -                      | 9.15                   | -              | -              | -                | -                 |
| BS-5S              | 1.0                 | 8.83                   | 9.32                   | 1.84           | 90             | -                | -                 |
| BS-7S              | 1.0                 | 15.25                  | 8.34                   | 2.42           | 110            | 0.943            | 645.0             |
| BS-7B              | 2.6                 | -                      | 7.30                   | -              | -              | -                | -                 |
| BS-9S              | 1.0                 | 12.25                  | 10.60                  | 2.58           | 100            | -                | -                 |
| BS-11S             | 1.0                 | 9.40                   | 8.78                   | 2.30           | 95             | 0.722            | 575.0             |
| BS-11B             | 4.2                 | -                      | 10.95                  | -              | -              | -                | -                 |
| MT-1S              | 1.0                 | 9.50                   | 3.42                   | 0.86           | 170            | -                | -                 |
| MT-1B              | 14.5                | -                      | 2.23                   | -              | -              | -                | -                 |
| MT-3S              | 1.0                 | 5.87                   | 1.88                   | 0.53           | 190            | 0.173            | 621.0             |
| MT-3B              | 12.7                | -                      | 2.41                   | -              | -              | -                | -                 |
| MT-5S              | 1.0                 | 5.37                   | 1.51                   | 0.38           | 260            | -                | -                 |
| MT-5B              | 14.8                | -                      | 1.20                   | -              | -              | -                | -                 |
| MT-7S              | 1.0                 | 4.11                   | 0.87                   | 0.32           | 415            | 0.115            | 655.0             |
| MT-7B              | 17.0                | -                      | 1.95                   | -              | -              | -                | -                 |

## **Mobile Bay Cruise Report**

**MB-25**

22, 23 April 1992

**Vessel:**

*R/V Deborah B.*

**Operation Area:**

- \* 22 April: Mobile Bay from Fort Morgan to Mobile River
- \* 23 April: Bay Mouth following ship channel to Farewell Buoy; Bon Secour Bay to Mississippi Sound following the Intracoastal Waterway

**Scientific Party:**

Felix Fernandez (Chief Scientist)  
Jean Cowan  
Leslie Hartman  
Alma Robichaux

**Supporting Agency:**

U.S. Geological Survey

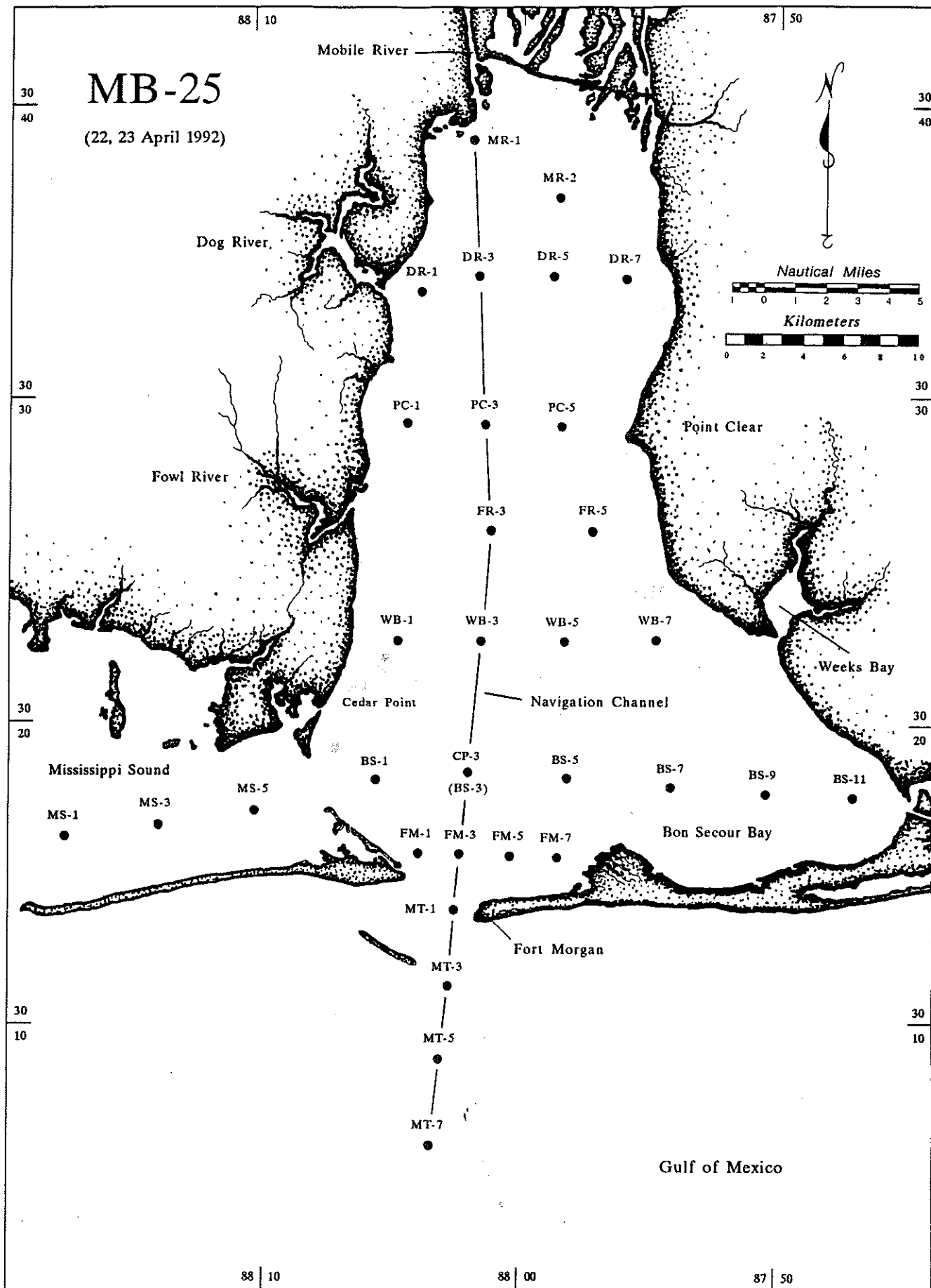
**Research Objectives:**

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 33 surface stations (22 of those including bottom water casts). Samples were taken for  $\text{TCO}_2$ , DOC, DON, DOP, POP, PC/PN, taxonomy identification and  $^{14}\text{C}$  productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations. Surface sediment samples for PC/PN analysis were collected using a Shipek bottom sampler at selected Bay stations.

**Cruise Summary:**

22 April: Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0715. Stations were continued going upbay through station MR-1. Returned to DISL 1400.

23 April: Departed DISL 0700. Deadheaded to station MT-7. Began sampling 0740. Stations were continued going north to station MT-1, then from BS-11 west to MS-1. Returned to DISL 1230.



## MOBILE BAY CRUISE MB-25

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 4/22/92       | 1231          | 30         | 38.0       | 88          | 2.0         | 12780.1          | 47180.1          | 14.6                | 2.6               | 2.7         | -           | -           |
| MR-1B              | 13.6                | 4/22/92       | 1231          | 30         | 38.0       | 88          | 2.0         | 12780.1          | 47180.1          | 14.6                | 26.9              | 22.6        | 5.3         | 72          |
| MR-2S              | 1.0                 | 4/22/92       | 1209          | 30         | 36.3       | 87          | 58.5        | 12815.5          | 47175.1          | 3.6                 | 0.9               | 22.9        | 9.0         | 104         |
| DR-1S              | 1.0                 | 4/22/92       | 1108          | 30         | 32.5       | 88          | 3.9         | 12755.7          | 47158.8          | 2.7                 | 4.2               | 22.6        | 8.9         | 105         |
| DR-3S              | 1.0                 | 4/22/92       | 1128          | 30         | 33.9       | 88          | 1.6         | 12780.9          | 47165.0          | 14.6                | 1.9               | 22.6        | 8.7         | 102         |
| DR-3B              | 13.6                | 4/22/92       | 1128          | 30         | 33.9       | 88          | 1.6         | 12780.9          | 47165.0          | 14.6                | 27.3              | 22.4        | 5.5         | 74          |
| DR-5S              | 1.0                 | 4/22/92       | 1143          | 30         | 34.2       | 87          | 58.5        | 12814.4          | 47167.3          | 4.0                 | 1.6               | 22.2        | 8.0         | 93          |
| DR-5B              | 3.0                 | 4/22/92       | 1143          | 30         | 34.2       | 87          | 58.5        | 12814.4          | 47167.3          | 4.0                 | 3.3               | 22.5        | 7.4         | 87          |
| DR-7S              | 1.0                 | 4/22/92       | 1153          | 30         | 34.4       | 87          | 56.0        | 12840.5          | 47169.2          | 3.0                 | 2.1               | 22.5        | 8.2         | 96          |
| DR-7B              | 2.0                 | 4/22/92       | 1153          | 30         | 34.4       | 87          | 56.0        | 12840.5          | 47169.2          | 3.0                 | 4.3               | 22.4        | 7.4         | 88          |
| PC-1S              | 1.0                 | 4/22/92       | 1048          | 30         | 29.1       | 88          | 4.1         | 12751.8          | 47145.8          | 3.0                 | 7.7               | 23.1        | 8.8         | 108         |
| PC-3S              | 1.0                 | 4/22/92       | 1033          | 30         | 28.5       | 88          | 1.0         | 12784.0          | 47144.5          | 15.5                | 5.9               | 23.0        | 8.8         | 88          |
| PC-3B              | 14.5                | 4/22/92       | 1033          | 30         | 28.5       | 88          | 1.0         | 12784.0          | 47144.5          | 15.5                | 28.3              | 22.4        | 5.9         | 80          |
| PC-5S              | 1.0                 | 4/22/92       | 1018          | 30         | 28.5       | 87          | 58.1        | 12815.0          | 47145.4          | 3.6                 | 6.4               | 22.6        | 7.9         | 95          |
| PC-5B              | 2.6                 | 4/22/92       | 1018          | 30         | 28.5       | 87          | 58.1        | 12815.0          | 47145.4          | 3.6                 | 9.1               | 22.7        | 6.9         | 85          |
| FR-3S              | 1.0                 | 4/22/92       | 1001          | 30         | 25.4       | 88          | 0.8         | 12784.1          | 47132.4          | 13.7                | 6.1               | 22.2        | 8.3         | 99          |
| FR-3B              | 12.7                | 4/22/92       | 1001          | 30         | 25.4       | 88          | 0.8         | 12784.1          | 47132.4          | 13.7                | 28.3              | 22.3        | 5.6         | 76          |
| FR-5S              | 1.0                 | 4/22/92       | 942           | 30         | 25.0       | 87          | 56.9        | 12825.0          | 47132.1          | 3.6                 | 6.7               | 21.7        | 8.2         | 97          |
| FR-5B              | 2.6                 | 4/22/92       | 942           | 30         | 25.0       | 87          | 56.9        | 12825.0          | 47132.1          | 3.6                 | 10.5              | 22.2        | 6.8         | 83          |
| WB-1S              | 1.0                 | 4/22/92       | 839           | 30         | 22.7       | 88          | 4.4         | 12745.1          | 47120.5          | 3.6                 | 9.4               | 22.1        | 8.3         | 101         |
| WB-3S              | 1.0                 | 4/22/92       | 854           | 30         | 22.5       | 88          | 1.3         | 12777.3          | 47120.5          | 10.4                | 7.8               | 22.1        | 8.3         | 100         |
| WB-3B              | 9.4                 | 4/22/92       | 854           | 30         | 22.5       | 88          | 1.3         | 12777.3          | 47120.5          | 10.4                | 28.1              | 22.0        | 6.0         | 80          |
| WB-5S              | 1.0                 | 4/22/92       | 911           | 30         | 22.6       | 87          | 58.1        | 12810.5          | 47121.8          | 3.6                 | 6.5               | 22.1        | 7.9         | 94          |
| WB-5B              | 2.6                 | 4/22/92       | 911           | 30         | 22.6       | 87          | 58.1        | 12810.5          | 47121.8          | 3.6                 | 9.7               | 22.4        | 7.5         | 91          |
| WB-7S              | 1.0                 | 4/22/92       | 924           | 30         | 22.4       | 87          | 55.3        | 12840.4          | 47122.1          | 3.6                 | 8.4               | 21.3        | 8.1         | 96          |
| CP-3S              | 1.0                 | 4/22/92       | 813           | 30         | 18.3       | 88          | 1.8         | 12769.1          | 47103.5          | 11.3                | 10.6              | 22.2        | 8.6         | 105         |
| CP-3B              | 10.3                | 4/22/92       | 813           | 30         | 18.3       | 88          | 1.8         | 12769.1          | 47103.5          | 11.3                | 28.3              | 22.3        | 6.3         | 86          |
| FM-1S              | 1.0                 | 4/22/92       | 716           | 30         | 15.7       | 88          | 3.7         | 12748.0          | 47092.2          | 4.2                 | 10.2              | 22.2        | 8.3         | 101         |



## MOBILE BAY CRUISE MB-25

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3S              | 1.0                 | 4/22/92       | 729           | 30         | 15.6       | 88          | 2.3         | 12763.0          | 47091.7          | 13.1                | 11.5              | 21.9        | 8.4         | 102         |
| FM-3B              | 12.1                | 4/22/92       | 729           | 30         | 15.6       | 88          | 2.3         | 12763.0          | 47091.7          | 13.1                | 30.5              | 22.0        | 6.4         | 88          |
| FM-5S              | 1.0                 | 4/22/92       | 740           | 30         | 15.6       | 88          | 0.8         | 12778.6          | 47092.1          | 4.2                 | 12.7              | 22.0        | 8.2         | 101         |
| FM-5B              | 3.2                 | 4/22/92       | 740           | 30         | 15.6       | 88          | 0.8         | 12778.6          | 47092.1          | 4.2                 | 23.6              | 22.3        | 6.8         | 89          |
| FM-7S              | 1.0                 | 4/22/92       | 751           | 30         | 15.5       | 87          | 58.9        | 12797.3          | 47092.1          | 4.0                 | 14.1              | 22.0        | 7.9         | 98          |
| MS-1S              | 1.0                 | 4/23/92       | 1129          | 30         | 15.3       | 88          | 18.4        | 12595.3          | 47087.7          | 2.7                 | 27.5              | 22.8        | 7.7         | 105         |
| MS-1B              | 1.7                 | 4/23/92       | 1129          | 30         | 15.3       | 88          | 18.4        | 12595.3          | 47087.7          | 2.7                 | 28.4              | 22.6        | 6.6         | 90          |
| MS-3S              | 1.0                 | 4/23/92       | 1114          | 30         | 15.5       | 88          | 4.4         | 12637.3          | 47089.3          | 4.2                 | 21.3              | 23.1        | 8.4         | 111         |
| MS-5S              | 1.0                 | 4/23/92       | 1057          | 30         | 16.1       | 88          | 10.3        | 12680.5          | 47092.6          | 4.2                 | 16.6              | 23.4        | 8.6         | 111         |
| MS-5B              | 3.2                 | 4/23/92       | 1057          | 30         | 16.1       | 88          | 10.3        | 12680.5          | 47092.6          | 4.2                 | 23.6              | 23.1        | 6.6         | 88          |
| BS-1S              | 1.0                 | 4/23/92       | 1034          | 30         | 17.0       | 88          | 5.8         | 12726.8          | 47097.2          | 3.0                 | 11.4              | 23.2        | 9.1         | 114         |
| BS-3S              | 1.0                 | 4/23/92       | 1018          | 30         | 17.1       | 88          | 2.1         | 12765.9          | 47098.4          | 15.5                | 12.6              | 23.1        | 8.9         | 112         |
| BS-3B              | 14.5                | 4/23/92       | 1018          | 30         | 17.1       | 88          | 2.1         | 12765.9          | 47098.4          | 15.5                | 29.7              | 22.4        | 6.7         | 92          |
| BS-5S              | 1.0                 | 4/23/92       | 956           | 30         | 16.9       | 87          | 58.2        | 12805.6          | 47098.2          | 3.4                 | 16.9              | 22.9        | 8.2         | 105         |
| BS-7S              | 1.0                 | 4/23/92       | 852           | 30         | 16.8       | 87          | 54.9        | 12840.0          | 47098.2          | 3.6                 | 12.1              | 22.2        | 8.9         | 110         |
| BS-7B              | 2.6                 | 4/23/92       | 852           | 30         | 16.8       | 87          | 54.9        | 12840.0          | 47098.2          | 3.6                 | 18.8              | 22.4        | 5.3         | 68          |
| BS-9S              | 1.0                 | 4/23/92       | 908           | 30         | 16.7       | 87          | 51.0        | 12880.1          | 47098.7          | 4.0                 | 13.0              | 22.5        | 8.4         | 105         |
| BS-11S             | 1.0                 | 4/23/92       | 923           | 30         | 16.7       | 87          | 84.0        | 12913.2          | 47099.3          | 2.4                 | 14.0              | 22.6        | 7.9         | 99          |
| BS-11B             | 1.4                 | 4/23/92       | 923           | 30         | 16.7       | 87          | 84.0        | 12913.2          | 47099.3          | 2.4                 | 14.0              | 22.5        | 7.4         | 92          |
| MT-1S              | 1.0                 | 4/23/92       | 821           | 30         | 14.0       | 88          | 2.3         | 12761.7          | 47085.2          | 15.2                | 12.2              | 22.6        | 9.0         | 111         |
| MT-1B              | 14.2                | 4/23/92       | 821           | 30         | 14.0       | 88          | 2.3         | 12761.7          | 47085.2          | 15.2                | 30.7              | 22.1        | 6.7         | 92          |
| MT-3S              | 1.0                 | 4/23/92       | 808           | 30         | 11.7       | 88          | 2.6         | 12756.7          | 47075.2          | 15.5                | 28.4              | 22.6        | 7.4         | 101         |
| MT-3B              | 14.5                | 4/23/92       | 808           | 30         | 11.7       | 88          | 2.6         | 12756.7          | 47075.2          | 15.5                | 32.2              | 21.6        | 6.4         | 88          |
| MT-5S              | 1.0                 | 4/23/92       | 755           | 30         | 9.6        | 88          | 3.2         | 12750.1          | 47065.9          | 15.2                | 20.3              | 22.2        | 8.1         | 105         |
| MT-5B              | 14.2                | 4/23/92       | 755           | 30         | 9.6        | 88          | 3.2         | 12750.1          | 47065.9          | 15.2                | 32.8              | 21.2        | 6.5         | 89          |
| MT-7S              | 1.0                 | 4/23/92       | 738           | 30         | 7.5        | 88          | 4.1         | 12739.4          | 47056.6          | 17.1                | 19.9              | 22.3        | 7.9         | 102         |
| MT-7B              | 16.1                | 4/23/92       | 738           | 30         | 7.5        | 88          | 4.1         | 12739.4          | 47056.6          | 17.1                | 33.0              | 21.0        | 6.4         | 87          |

## MOBILE BAY CRUISE MB-25

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -  | 897          | 0.48        | 2.89        | 0.51        | 5.22        | 57.97      | 436         | 21.62       | 0.23        | 95.81      | 11.04      | 0.79       |
| MR-1B              | 13.6                | -  | -            | 0.58        | 0.67        | 0.39        | 2.78        | 15.34      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -  | -            | 0.35        | 0.66        | 0.37        | 2.27        | 62.69      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | -  | -            | 0.15        | 2.09        | 0.50        | 1.24        | 56.96      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -  | 738          | 0.30        | 2.00        | 0.51        | 1.41        | 60.12      | 358         | 16.19       | -           | 114.76     | 12.44      | 1.15       |
| DR-3B              | 13.6                | -  | -            | 0.45        | 0.56        | 0.33        | 1.88        | 14.72      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -  | -            | 0.60        | 2.08        | 0.49        | 2.63        | 64.02      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 3.0                 | -  | -            | 0.60        | 2.76        | 0.50        | 3.22        | 62.80      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -  | 696          | 0.40        | 1.91        | 0.46        | 1.80        | 63.75      | 339         | 21.19       | 0.20        | 82.22      | 9.78       | 0.83       |
| DR-7B              | 2.0                 | -  | -            | 0.60        | 2.61        | 0.42        | 2.46        | 64.33      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | -  | -            | 0.15        | 1.12        | 0.37        | 0.05        | 59.09      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | -  | 846          | 0.30        | 1.86        | 0.49        | 0.17        | 62.99      | 307         | 12.70       | 0.41        | 91.45      | 12.62      | 0.94       |
| PC-3B              | 14.5                | -  | -            | 0.45        | 0.42        | 0.26        | 1.02        | 11.28      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | -  | 922          | 0.43        | 1.35        | 0.45        | 0.59        | 66.75      | 303         | 17.75       | -           | 110.39     | 15.44      | 1.08       |
| PC-5B              | 2.6                 | -  | -            | 0.48        | 1.73        | 0.53        | 1.00        | 64.87      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -  | 883          | 0.38        | 1.08        | 0.34        | 0.12        | 58.08      | 290         | 18.25       | 0.04        | 88.19      | 13.64      | 0.86       |
| FR-3B              | 12.7                | -  | -            | 0.63        | 0.26        | 0.33        | 3.02        | 12.28      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | -  | -            | 0.45        | 1.03        | 0.42        | 0.78        | 64.70      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.6                 | -  | -            | 0.45        | 1.37        | 0.48        | 1.46        | 61.12      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | -  | 1065         | 0.45        | 0.26        | 0.15        | 0.05        | 63.63      | 286         | 11.82       | 0.00        | 52.70      | 8.42       | 0.54       |
| WB-3S              | 1.0                 | -  | 992          | 0.60        | 0.36        | 0.38        | 0.10        | 65.77      | 266         | 12.66       | 0.00        | 65.82      | 10.00      | 0.72       |
| WB-3B              | 9.4                 | -  | -            | 0.45        | 0.18        | 0.28        | 0.68        | 13.11      | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | -  | -            | 0.40        | 0.78        | 0.36        | 0.24        | 66.53      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.6                 | -  | -            | 0.48        | 1.14        | 0.43        | 0.80        | 62.08      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | -  | 1025         | 0.30        | 0.90        | 0.51        | 0.37        | 65.69      | 271         | 12.25       | 0.07        | 92.38      | 14.21      | 1.10       |
| CP-3S              | 1.0                 | -  | 1122         | 0.33        | 0.17        | 0.16        | 0.10        | 60.31      | -           | -           | 0.00        | 64.01      | 10.15      | 0.71       |
| CP-3B              | 10.3                | -  | -            | 0.18        | 0.13        | 0.25        | 0.34        | 11.03      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.45        | 0.16        | 0.22        | 0.17        | 60.49      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-25

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | -  | 1158         | 0.23        | 0.07        | 0.21        | 0.17        | 59.31      | 268         | 11.13       | 0.00        | 54.74      | 6.77       | 0.44       |
| FM-3B              | 12.1                | -  | -            | 0.15        | 0.14        | 0.19        | 0.34        | 7.95       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -  | -            | 0.25        | 0.02        | 0.15        | 0.07        | 58.66      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.2                 | -  | -            | 0.15        | 0.17        | 0.19        | 0.20        | 23.75      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | 1290         | 0.25        | 0.03        | 0.16        | 0.10        | 54.54      | -           | 12.89       | 0.00        | 80.11      | 12.28      | 0.66       |
| MS-1S              | 1.0                 | -  | 1738         | 0.20        | 0.00        | 0.17        | 0.59        | 17.06      | 170         | 9.29        | 0.17        | 68.83      | 10.13      | 0.36       |
| MS-1B              | 1.7                 | -  | -            | 0.38        | 0.00        | 0.18        | 2.27        | 18.61      | -           | -           | -           | -          | -          | -          |
| MS-3S              | 1.0                 | -  | -            | 0.15        | 0.03        | 0.13        | 0.22        | 31.91      | -           | -           | -           | -          | -          | -          |
| MS-5S              | 1.0                 | -  | 1342         | 0.18        | 0.00        | 0.15        | 0.34        | 43.14      | 241         | 6.96        | 0.24        | 59.30      | 8.36       | 0.33       |
| MS-5B              | 3.2                 | -  | -            | 0.25        | 0.09        | 0.21        | 0.49        | 28.63      | -           | -           | -           | -          | -          | -          |
| BS-1S              | 1.0                 | -  | -            | 0.05        | 0.01        | 0.15        | 0.15        | 56.12      | -           | -           | -           | -          | -          | -          |
| BS-3S              | 1.0                 | -  | 1166         | 0.03        | 0.00        | 0.12        | 0.00        | 55.89      | 229         | 8.30        | 0.39        | 53.88      | 7.72       | 0.34       |
| BS-3B              | 14.5                | -  | -            | 0.15        | 0.10        | 0.21        | -           | 10.99      | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | -  | -            | 0.15        | 0.03        | 0.16        | 0.07        | 52.25      | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | -  | 1156         | 0.08        | 0.00        | 0.15        | 0.02        | 62.10      | 243         | 10.35       | 0.29        | 95.15      | 14.93      | 0.61       |
| BS-7B              | 2.6                 | -  | -            | 0.15        | 0.02        | 0.19        | 0.27        | 49.08      | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | -  | -            | 0.05        | 0.06        | 0.18        | 0.29        | 66.97      | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | -  | 1266         | 0.13        | 0.00        | 0.18        | 0.07        | 65.27      | 292         | 10.70       | 0.81        | 176.00     | 26.93      | 1.42       |
| BS-11B             | 1.4                 | -  | -            | 0.10        | 0.00        | 0.20        | 0.56        | 65.38      | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | -  | -            | 0.00        | 0.00        | 0.12        | 0.37        | 56.85      | -           | -           | -           | -          | -          | -          |
| MT-1B              | 14.2                | -  | -            | -           | -           | -           | -           | -          | -           | -           | -           | -          | -          | -          |
| MT-3S              | 1.0                 | -  | 1790         | 0.00        | 0.00        | 0.20        | 0.00        | 10.92      | 137         | 4.14        | 0.42        | 45.99      | 6.54       | 0.31       |
| MT-3B              | 14.5                | -  | -            | 0.00        | 0.04        | 0.21        | 0.32        | 6.11       | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | -  | -            | 0.00        | 0.03        | 0.17        | 0.00        | 34.53      | -           | -           | -           | -          | -          | -          |
| MT-5B              | 14.2                | -  | -            | 0.00        | 0.04        | 0.24        | 0.46        | 5.61       | -           | -           | -           | -          | -          | -          |
| MT-7S              | 1.0                 | -  | 1516         | 0.00        | 0.03        | 0.13        | 0.00        | 35.00      | -           | 5.94        | 0.37        | 51.09      | 7.24       | 0.32       |
| MT-7B              | 16.1                | -  | -            | 0.00        | 0.13        | 0.23        | 0.59        | 6.23       | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-25

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | SESTON CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|------------------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 8.86                   | 6.90                   | 1.96           | 120            | 1.511            | 1049.0            |
| MR-1B              | 13.6                | -                      | 2.56                   | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 6.50                   | 4.88                   | 1.35           | 100            | -                | -                 |
| DR-1S              | 1.0                 | 7.00                   | 7.68                   | 1.48           | 70             | -                | -                 |
| DR-3S              | 1.0                 | 16.80                  | 8.34                   | 1.87           | 60             | 1.247            | 1152.0            |
| DR-3B              | 13.6                | -                      | 3.03                   | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 18.57                  | 5.21                   | 1.77           | 75             | -                | -                 |
| DR-5B              | 3.0                 | -                      | 3.73                   | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 12.33                  | 5.94                   | 1.57           | 60             | 1.196            | 1186.0            |
| DR-7B              | 2.0                 | -                      | 4.05                   | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 10.29                  | 6.93                   | 1.53           | 90             | -                | -                 |
| PC-3S              | 1.0                 | 12.86                  | 6.00                   | 1.43           | 70             | 0.629            | 815.0             |
| PC-3B              | 14.5                | -                      | 3.85                   | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 10.86                  | 7.53                   | 1.61           | 80             | 1.089            | 1186.0            |
| PC-5B              | 2.6                 | -                      | 3.67                   | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 12.86                  | 6.23                   | 0.93           | 85             | 1.112            | 2089.0            |
| FR-3B              | 12.7                | -                      | 5.79                   | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 15.48                  | 7.47                   | 1.36           | 75             | -                | -                 |
| FR-5B              | 2.6                 | -                      | 4.66                   | -              | -              | -                | -                 |
| WB-1S              | 1.0                 | 6.75                   | 2.92                   | 1.09           | 130            | 0.570            | 922.0             |
| WB-3S              | 1.0                 | 7.71                   | 4.17                   | 1.19           | 90             | 0.902            | 1267.0            |
| WB-3B              | 9.4                 | -                      | 6.49                   | -              | -              | -                | -                 |
| WB-5S              | 1.0                 | 9.60                   | 5.73                   | 1.36           | 80             | -                | -                 |
| WB-5B              | 2.6                 | -                      | 3.75                   | -              | -              | -                | -                 |
| WB-7S              | 1.0                 | 10.29                  | 5.82                   | -              | 80             | 1.330            | 1566.0            |
| CP-3S              | 1.0                 | 7.25                   | 3.18                   | 0.98           | 130            | 0.725            | 1369.0            |
| CP-3B              | 10.3                | -                      | 6.78                   | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 7.00                   | 1.74                   | 1.21           | 100            | -                | -                 |

## MOBILE BAY CRUISE MB-25

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| FM-3S              | 1.0                 | 5.03                   | 2.12            | 0.89           | 125            | 0.393            | 805.0             |
| FM-3B              | 12.1                | -                      | 3.22            | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 6.25                   | 1.74            | 0.82           | 135            | -                | -                 |
| FM-5B              | 3.2                 | -                      | 3.02            | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 7.50                   | 3.79            | 1.41           | 110            | 0.632            | 892.0             |
| MS-1S              | 1.0                 | 20.97                  | 1.69            | 0.68           | 170            | 0.189            | 490.0             |
| MS-1B              | 1.7                 | -                      | 2.56            | -              | -              | -                | -                 |
| MS-3S              | 1.0                 | 10.20                  | 2.19            | 0.87           | 130            | -                | -                 |
| MS-5S              | 1.0                 | 7.40                   | 2.35            | 1.00           | 50             | 0.297            | 577.0             |
| MS-5B              | 3.2                 | -                      | 6.68            | -              | -              | -                | -                 |
| BS-1S              | 1.0                 | 1.25                   | 0.92            | 1.15           | 185            | -                | -                 |
| BS-3S              | 1.0                 | 7.50                   | 1.62            | 0.74           | 165            | 0.194            | 562.0             |
| BS-3B              | 14.5                | -                      | 5.21            | -              | -              | -                | -                 |
| BS-5S              | 1.0                 | 5.00                   | 4.50            | 1.19           | 120            | -                | -                 |
| BS-7S              | 1.0                 | 7.40                   | 3.89            | 0.88           | 125            | 0.485            | 923.0             |
| BS-7B              | 2.6                 | -                      | 6.53            | -              | -              | -                | -                 |
| BS-9S              | 1.0                 | 9.80                   | 4.20            | 1.03           | 25             | -                | -                 |
| BS-11S             | 1.0                 | 14.75                  | 4.10            | 1.68           | 70             | 0.736            | 749.0             |
| BS-11B             | 1.4                 | -                      | 5.02            | -              | -              | -                | -                 |
| MT-1S              | 1.0                 | 7.00                   | 1.36            | 0.64           | 170            | -                | -                 |
| MT-1B              | 14.2                | -                      | -               | -              | -              | -                | -                 |
| MT-3S              | 1.0                 | 8.96                   | 1.68            | 0.64           | 220            | 0.192            | 526.0             |
| MT-3B              | 14.5                | -                      | 2.34            | -              | -              | -                | -                 |
| MT-5S              | 1.0                 | 8.88                   | 1.01            | 0.43           | 200            | -                | -                 |
| MT-5B              | 14.2                | -                      | 4.39            | -              | -              | -                | -                 |
| MT-7S              | 1.0                 | 5.62                   | 1.32            | 0.52           | 210            | 0.314            | 880.0             |
| MT-7B              | 16.1                | -                      | 1.42            | -              | -              | -                | -                 |

## ***Mobile Bay Cruise Report***

***MB-26***

18, 19 May 1992

***Vessel:***

*R/V Deborah B.*

***Operation Area:***

- \* 18 May: Mobile Bay from Fort Morgan to Mobile River
- \* 19 May: Bay Mouth following ship channel to Farewell Buoy; Bon Secour Bay to Mississippi Sound following the Intracoastal Waterway

***Scientific Party:***

Jon Pennock (Chief Scientist)  
Rick Stumpf  
Jean Cowan  
Felix Fernandez  
Caryl LaRosa

***Supporting Agency:***

U.S. Geological Survey

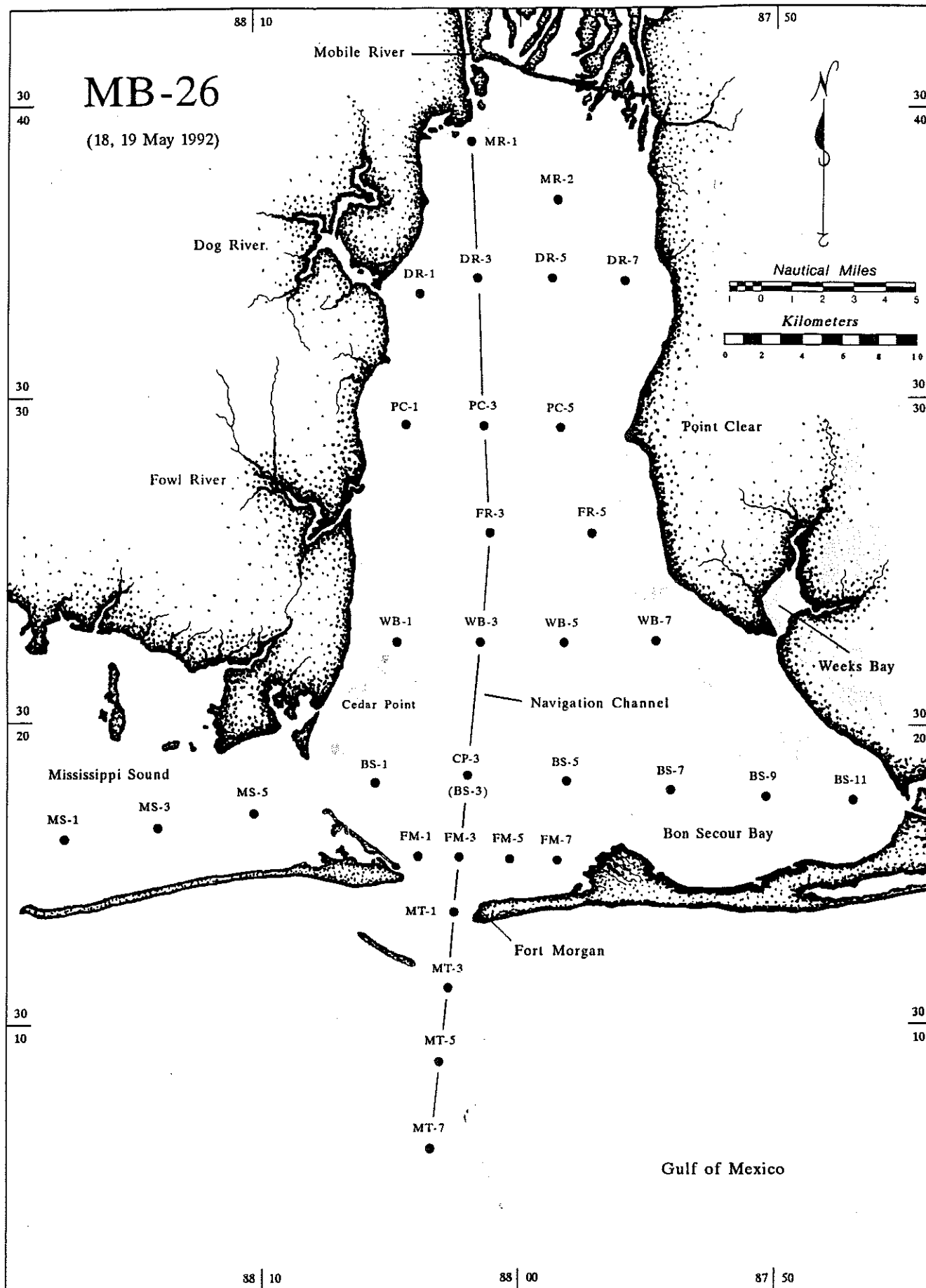
***Research Objectives:***

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 33 surface stations (22 of those including bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations. Surface sediment samples for PC/PN analysis were collected using a Shipek bottom sampler at selected Bay stations.

***Cruise Summary:***

18 May: Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0720. Stations were continued going upbay through station MR-1. Returned to DISL 1500.

19 May: Departed DISL 0700. Deadheaded to station MT-7. Began sampling 0745. Stations were continued going north to station MT-1, then from BS-11 west to MS-1. Returned to DISL 1300.



## MOBILE BAY CRUISE MB-26

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 5/18/92       | 1320          | 30         | 38.1       | 88          | 1.9         | 12780.3          | 47180.2          | 14.6                | 5.9               | 26.4        | 8.1         | 104         |
| MR-1B              | 13.6                | 5/18/92       | 1320          | 30         | 38.1       | 88          | 1.9         | 12780.3          | 47180.2          | 14.6                | 29.4              | 23.9        | 3.4         | 48          |
| MR-2S              | 1.0                 | 5/18/92       | 1256          | 30         | 36.2       | 87          | 58.5        | 12815.5          | 47174.9          | 3.6                 | 8.9               | 26.4        | 7.3         | 96          |
| DR-1S              | 1.0                 | 5/18/92       | 1147          | 30         | 32.6       | 88          | 4.0         | 12755.5          | 47159.2          | 3.0                 | 9.9               | 26.7        | 6.3         | 83          |
| DR-3S              | 1.0                 | 5/18/92       | 1206          | 30         | 34.0       | 88          | 1.6         | 12781.1          | 47165.4          | 14.6                | 8.2               | 26.6        | 7.0         | 92          |
| DR-3B              | 13.6                | 5/18/92       | 1206          | 30         | 34.0       | 88          | 1.6         | 12781.1          | 47165.4          | 14.6                | 29.4              | 24.4        | 3.4         | 48          |
| DR-5S              | 1.0                 | 5/18/92       | 1223          | 30         | 34.2       | 87          | 58.5        | 12814.5          | 47167.3          | 4.0                 | 11.0              | 26.1        | 6.7         | 88          |
| DR-5B              | 3.0                 | 5/18/92       | 1223          | 30         | 34.2       | 87          | 58.5        | 18214.5          | 47167.3          | 4.0                 | 11.0              | 26.0        | 5.9         | 77          |
| DR-7S              | 1.0                 | 5/18/92       | 1239          | 30         | 34.4       | 87          | 56.1        | 12840.3          | 47169.2          | 3.4                 | 9.7               | 26.0        | 7.3         | 95          |
| DR-7B              | 2.4                 | 5/18/92       | 1239          | 30         | 34.4       | 87          | 56.1        | 12840.3          | 47169.2          | 3.4                 | 10.0              | 25.8        | 6.5         | 85          |
| PC-1S              | 1.0                 | 5/18/92       | 1127          | 30         | 29.0       | 88          | 3.9         | 12753.6          | 47145.6          | 3.4                 | 12.5              | 25.8        | 6.5         | 85          |
| PC-3S              | 1.0                 | 5/18/92       | 1109          | 30         | 28.4       | 88          | 1.1         | 12783.4          | 47144.2          | 16.2                | 11.2              | 25.9        | 6.7         | 88          |
| PC-3B              | 15.2                | 5/18/92       | 1109          | 30         | 28.4       | 88          | 1.1         | 12783.4          | 47144.2          | 16.2                | 30.1              | 24.4        | 4.0         | 57          |
| PC-5S              | 1.0                 | 5/18/92       | 1051          | 30         | 28.4       | 87          | 58.0        | 12815.4          | 47145.5          | 4.0                 | 13.3              | 25.2        | 6.8         | 90          |
| PC-5B              | 3.0                 | 5/18/92       | 1051          | 30         | 28.4       | 87          | 58.0        | 12815.4          | 47145.5          | 4.0                 | 14.3              | 24.8        | 5.4         | 70          |
| FR-3S              | 1.0                 | 5/18/92       | 1029          | 30         | 25.5       | 88          | 0.8         | 12784.3          | 47132.8          | 13.1                | 13.4              | 26.0        | 6.8         | 90          |
| FR-3B              | 12.1                | 5/18/92       | 1029          | 30         | 25.5       | 88          | 0.8         | 12784.3          | 47132.8          | 13.1                | 30.2              | 24.6        | 4.0         | 57          |
| FR-5S              | 1.0                 | 5/18/92       | 1009          | 30         | 25.0       | 87          | 56.8        | 12825.8          | 47132.1          | 3.6                 | 14.2              | 25.5        | 6.6         | 87          |
| FR-5B              | 2.6                 | 5/18/92       | 1009          | 30         | 25.0       | 87          | 56.8        | 12825.8          | 47132.1          | 3.6                 | 15.3              | 25.3        | 6.2         | 82          |
| WB-1S              | 1.0                 | 5/18/92       | 852           | 30         | 22.7       | 88          | 4.4         | 12745.1          | 47120.6          | 3.6                 | 16.6              | 25.2        | 6.8         | 91          |
| WB-3S              | 1.0                 | 5/18/92       | 918           | 30         | 22.5       | 88          | 1.3         | 12777.9          | 47120.9          | 14.6                | 18.4              | 25.3        | 6.6         | 89          |
| WB-3B              | 13.6                | 5/18/92       | 918           | 30         | 22.5       | 88          | 1.3         | 12777.9          | 47120.9          | 14.6                | 29.9              | 24.2        | 4.1         | 58          |
| WB-5S              | 1.0                 | 5/18/92       | 936           | 30         | 22.7       | 87          | 58.1        | 12810.5          | 47122.2          | 4.0                 | 15.9              | 25.4        | 6.6         | 88          |
| WB-5B              | 3.0                 | 5/18/92       | 936           | 30         | 22.7       | 87          | 58.1        | 12810.5          | 47122.2          | 4.0                 | 15.4              | 25.4        | 6.5         | 87          |
| WB-7S              | 1.0                 | 5/18/92       | 950           | 30         | 22.5       | 87          | 55.7        | 12840.3          | 47122.2          | 3.6                 | 15.3              | 25.4        | 6.6         | 88          |
| CP-3S              | 1.0                 | 5/18/92       | 831           | 30         | 18.3       | 88          | 1.9         | 12768.8          | 47103.5          | 10.1                | 22.1              | 25.0        | 6.5         | 90          |
| CP-3B              | 9.1                 | 5/18/92       | 831           | 30         | 18.3       | 88          | 1.9         | 12768.8          | 47103.5          | 10.1                | 29.0              | 24.8        | 5.8         | 83          |
| FM-1S              | 1.0                 | 5/18/92       | 722           | 30         | 15.7       | 88          | 3.7         | 12748.2          | 47092.2          | 4.8                 | 23.7              | 25.0        | 6.6         | 91          |



## MOBILE BAY CRUISE MB-26

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LON<br>DEG | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3S              | 1.0                 | 5/18/92       | 739           | 30         | 15.6       | 88         | 2.3        | 12762.8          | 47091.7          | 14.3                | 24.2              | 25.1        | 6.7         | 93          |
| FM-3B              | 13.3                | 5/18/92       | 739           | 30         | 15.6       | 88         | 2.3        | 12762.8          | 47091.7          | 14.3                | 29.9              | 24.6        | 6.0         | 86          |
| FM-5S              | 1.0                 | 5/18/92       | 755           | 30         | 15.6       | 88         | 0.8        | 12778.6          | 47092.1          | 4.2                 | 29.2              | 24.7        | 6.2         | 88          |
| FM-5B              | 3.2                 | 5/18/92       | 755           | 30         | 15.6       | 88         | 0.8        | 12778.6          | 47092.1          | 4.2                 | 29.5              | 24.8        | 5.9         | 84          |
| FM-7S              | 1.0                 | 5/18/92       | 808           | 30         | 15.6       | 87         | 58.9       | 12797.8          | 47092.3          | 4.2                 | 24.7              | 24.8        | 6.3         | 88          |
| MS-1S              | 1.0                 | 5/19/92       | 1206          | 30         | 15.2       | 88         | 18.4       | 12595.9          | 47087.3          | 4.2                 | 29.4              | 25.4        | 4.6         | 67          |
| MS-1B              | 3.2                 | 5/19/92       | 1206          | 30         | 15.2       | 88         | 18.4       | 12595.9          | 47087.3          | 4.2                 | 29.7              | 25.0        | 6.6         | 95          |
| MS-3S              | 1.0                 | 5/19/92       | 1148          | 30         | 15.6       | 88         | 14.4       | 12637.2          | 47089.6          | 4.6                 | 23.9              | 26.1        | 7.3         | 103         |
| MS-5S              | 1.0                 | 5/19/92       | 1131          | 30         | 16.2       | 88         | 10.3       | 12680.3          | 47092.7          | 4.0                 | 21.7              | 26.4        | 6.7         | 95          |
| MS-5B              | 3.0                 | 5/19/92       | 1131          | 30         | 16.2       | 88         | 10.3       | 12680.3          | 47092.7          | 4.0                 | 23.8              | 26.3        | 7.2         | 102         |
| BS-1S              | 1.0                 | 5/19/92       | 1110          | 30         | 16.9       | 88         | 5.8        | 12727.3          | 47096.7          | 4.0                 | 20.0              | 25.6        | -           | -           |
| BS-3S              | 1.0                 | 5/19/92       | 1051          | 30         | 17.2       | 88         | 2.1        | 12766.0          | 47098.5          | 15.5                | 28.2              | 25.6        | 6.9         | 99          |
| BS-3B              | 14.5                | 5/19/92       | 1051          | 30         | 17.2       | 88         | 2.1        | 12766.0          | 47098.5          | 15.5                | 30.3              | 24.7        | 6.2         | 88          |
| BS-5S              | 1.0                 | 5/19/92       | 1033          | 30         | 16.9       | 87         | 58.3       | 12805.1          | 47098.1          | 3.6                 | 26.6              | 25.7        | 7.3         | 104         |
| BS-7S              | 1.0                 | 5/19/92       | 917           | 30         | 16.8       | 87         | 54.9       | 12839.9          | 47098.3          | 4.0                 | 18.9              | 25.2        | 7.2         | 97          |
| BS-7B              | 3.0                 | 5/19/92       | 917           | 30         | 16.8       | 87         | 54.9       | 12839.9          | 47098.3          | 4.0                 | 21.4              | 25.1        | 5.5         | 75          |
| BS-9S              | 1.0                 | 5/19/92       | 937           | 30         | 16.8       | 87         | 51.1       | 12879.9          | 47098.9          | 4.0                 | 16.4              | 25.1        | 6.9         | 92          |
| BS-11S             | 1.0                 | 5/19/92       | 955           | 30         | 16.7       | 87         | 47.9       | 12913.2          | 47099.4          | 5.0                 | 15.5              | 25.4        | 7.3         | 98          |
| BS-11B             | 4.0                 | 5/19/92       | 955           | 30         | 16.7       | 87         | 47.9       | 12913.2          | 47099.4          | 5.0                 | 16.9              | 25.2        | 5.2         | 69          |
| MT-1S              | 1.0                 | 5/19/92       | 845           | 30         | 14.1       | 88         | 2.3        | 12762.2          | 47085.8          | 14.3                | 29.3              | 24.8        | 6.5         | 92          |
| MT-1B              | 13.3                | 5/19/92       | 845           | 30         | 14.1       | 88         | 2.3        | 12762.2          | 47085.8          | 14.3                | 30.6              | 24.3        | 6.3         | 90          |
| MT-3S              | 1.0                 | 5/19/92       | 830           | 30         | 11.7       | 88         | 2.6        | 12757.2          | 47075.4          | 15.5                | 29.4              | 24.6        | 6.9         | 99          |
| MT-3B              | 14.5                | 5/19/92       | 830           | 30         | 11.7       | 88         | 2.6        | 12757.2          | 47075.4          | 15.5                | 32.2              | 23.5        | 6.2         | 88          |
| MT-5S              | 1.0                 | 5/19/92       | 808           | 30         | 9.6        | 88         | 3.2        | 12750.3          | 47065.8          | 15.0                | 29.1              | 24.4        | 6.9         | 98          |
| MT-5B              | 14.0                | 5/19/92       | 808           | 30         | 9.6        | 88         | 3.2        | 12750.3          | 47065.8          | 15.0                | 32.6              | 23.2        | 6.4         | 90          |
| MT-7S              | 1.0                 | 5/19/92       | 745           | 30         | 7.3        | 88         | 4.1        | 12739.4          | 47056.0          | 17.7                | 30.8              | 24.0        | 7.0         | 99          |
| MT-7B              | 16.7                | 5/19/92       | 745           | 30         | 7.3        | 88         | 4.1        | 12739.4          | 47056.0          | 17.7                | 33.7              | 22.1        | 5.7         | 80          |

## MOBILE BAY CRUISE MB-26

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 8.0 | 841          | 0.10        | 0.46        | 0.31        | 2.62        | 31.64      | 405         | 13.46       | 0.32        | 114.11     | 14.90      | 0.64       |
| MR-1B              | 13.6                | 8.2 | -            | 0.79        | 0.27        | 0.55        | 10.88       | 14.56      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 8.2 | -            | 0.25        | 0.15        | 0.18        | 0.74        | 38.39      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 8.1 | -            | 0.15        | 0.00        | 0.43        | 0.91        | 32.09      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 8.0 | 982          | 0.25        | 1.01        | 0.42        | 0.88        | 33.03      | 371         | 11.23       | 0.17        | 116.68     | 16.78      | 0.56       |
| DR-3B              | 13.6                | 8.2 | -            | 0.66        | 0.27        | 0.37        | 8.53        | 12.42      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 8.2 | -            | 0.20        | -           | -           | 0.24        | 37.09      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 3.0                 | 8.2 | -            | 0.20        | 0.00        | 0.16        | 0.18        | 50.02      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 8.2 | 1033         | 0.15        | 0.00        | 0.11        | 0.18        | 39.75      | 332         | 12.24       | 0.10        | 136.79     | 14.05      | 0.45       |
| DR-7B              | 2.4                 | 8.2 | -            | 0.20        | 0.00        | 0.11        | 0.41        | 40.10      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 8.3 | -            | 0.10        | 0.00        | 0.16        | 0.18        | 29.18      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 8.3 | 1110         | 0.05        | 0.02        | 0.14        | 0.09        | 36.92      | 312         | 8.56        | -           | 65.16      | 9.13       | 0.32       |
| PC-3B              | 15.2                | 8.3 | -            | 0.51        | 0.04        | 0.17        | 6.47        | 10.98      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 8.2 | 1247         | 0.15        | 0.05        | 0.19        | 0.21        | 32.20      | 345         | 9.91        | 0.27        | 56.76      | 8.44       | 0.27       |
| PC-5B              | 3.0                 | 8.1 | -            | 0.25        | 0.11        | 0.18        | 0.41        | 37.37      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 8.3 | 1216         | 0.10        | 0.00        | 0.11        | 0.15        | 32.14      | 291         | 8.17        | 0.27        | 53.90      | 7.17       | 0.87       |
| FR-3B              | 12.1                | 8.3 | -            | 0.51        | 0.00        | 0.26        | 6.24        | 12.25      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 8.3 | -            | 0.15        | 0.00        | 0.12        | 0.09        | -          | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.6                 | 8.2 | -            | 0.20        | 0.00        | 0.14        | 0.18        | 27.65      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | 8.4 | 1374         | 0.10        | 0.00        | 0.17        | 0.15        | 29.19      | -           | 7.37        | 0.32        | 57.90      | 8.43       | 0.39       |
| WB-3S              | 1.0                 | 8.3 | 1472         | 0.15        | 0.00        | 0.19        | 0.06        | 34.64      | 256         | 7.60        | 0.27        | 59.86      | 8.01       | 0.37       |
| WB-3B              | 13.6                | 8.2 | -            | 0.18        | 0.04        | 0.29        | 5.06        | 11.24      | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | 8.4 | -            | 0.13        | 0.00        | 0.23        | 0.32        | 29.20      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 3.0                 | 8.3 | -            | 0.13        | 0.00        | 0.17        | 0.18        | 28.49      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | 8.2 | 1361         | 0.15        | 0.00        | 0.14        | 0.18        | 32.04      | 279         | 7.69        | 0.68        | 72.05      | 9.92       | 0.50       |
| CP-3S              | 1.0                 | 8.3 | 1560         | 0.18        | 0.00        | 0.18        | 0.00        | 24.28      | 229         | 7.34        | 0.36        | 73.16      | 9.82       | 0.48       |
| CP-3B              | 9.1                 | 8.3 | -            | 0.23        | 0.01        | 0.18        | 0.53        | 9.02       | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 8.2 | -            | 0.15        | 0.03        | 0.17        | 0.00        | 20.68      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-26

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | 8.3 | 1645         | 0.20        | 0.00        | 0.16        | 0.00        | 17.41      | 235         | 4.57        | 1.20        | 61.30      | 7.50       | 0.41       |
| FM-3B              | 13.3                | 8.3 | -            | 0.15        | 0.00        | 0.19        | 0.18        | 6.08       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.3 | -            | 0.20        | 0.00        | 0.22        | 0.09        | 10.63      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.2                 | 8.3 | -            | 0.20        | 0.00        | 0.20        | 0.18        | 6.97       | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 8.3 | 1667         | 0.20        | 0.00        | 0.15        | 0.00        | 18.91      | 204         | 6.58        | 0.51        | 60.33      | 8.16       | 0.36       |
| MS-1S              | 1.0                 | 8.2 | 1823         | 0.05        | 0.00        | 0.12        | 2.38        | 3.30       | -           | 1.95        | 1.35        | 43.69      | 4.51       | 0.23       |
| MS-1B              | 3.2                 | 8.2 | -            | 0.23        | 0.00        | 0.14        | 0.24        | 5.58       | -           | -           | -           | -          | -          | -          |
| MS-3S              | 1.0                 | 8.3 | -            | 0.20        | 0.22        | 0.13        | 0.00        | 8.27       | -           | -           | -           | -          | -          | -          |
| MS-5S              | 1.0                 | 8.3 | 1467         | 0.15        | 0.00        | 0.19        | 0.15        | 5.91       | -           | 5.66        | 0.16        | 75.63      | 8.07       | 0.60       |
| MS-5B              | 3.0                 | 8.2 | -            | 0.20        | 0.00        | 0.16        | 0.09        | 11.85      | -           | -           | -           | -          | -          | -          |
| BS-1S              | 1.0                 | 8.3 | -            | 0.28        | 0.00        | 0.21        | 0.18        | 26.76      | -           | -           | -           | -          | -          | -          |
| BS-3S              | 1.0                 | 8.3 | 1785         | 0.20        | 0.00        | 0.18        | 0.18        | 7.77       | -           | 4.03        | 0.22        | 37.74      | 4.14       | 0.34       |
| BS-3B              | 14.5                | 8.3 | -            | 0.46        | 0.29        | 0.20        | 0.97        | 7.58       | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | 8.3 | -            | 0.20        | 0.00        | 0.16        | 0.29        | 12.62      | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | 8.2 | 1466         | 0.33        | 0.00        | 0.19        | 0.24        | 27.87      | -           | 10.65       | 0.84        | 104.14     | 14.96      | 0.77       |
| BS-7B              | 3.0                 | 8.2 | -            | 0.53        | 0.00        | 0.26        | 0.71        | 25.24      | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | 8.2 | -            | 0.18        | 0.00        | 0.23        | 0.35        | 29.10      | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | 8.2 | 1409         | 0.20        | 0.00        | 0.14        | 0.35        | 39.06      | -           | 4.15        | 0.17        | 97.41      | 13.73      | 0.70       |
| BS-11B             | 4.0                 | 8.1 | -            | 0.20        | 0.00        | 0.15        | 0.29        | 39.87      | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | 8.3 | -            | 0.20        | 0.00        | 0.19        | 0.12        | 3.56       | -           | -           | -           | -          | -          | -          |
| MT-1B              | 13.3                | 8.3 | -            | 0.20        | 0.00        | 0.19        | 0.15        | 1.51       | -           | -           | -           | -          | -          | -          |
| MT-3S              | 1.0                 | 8.3 | 1832         | 0.20        | 0.00        | 0.20        | 0.18        | 3.13       | -           | -           | 0.22        | 21.91      | 2.54       | 0.15       |
| MT-3B              | 14.5                | 8.3 | -            | 0.18        | 0.00        | 0.17        | 0.32        | 2.10       | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | 8.3 | -            | 0.20        | 0.00        | 0.22        | 0.59        | 3.85       | -           | -           | -           | -          | -          | -          |
| MT-5B              | 14.0                | 8.3 | -            | 0.15        | 0.00        | 0.22        | 0.18        | 1.60       | -           | -           | -           | -          | -          | -          |
| MT-7S              | 1.0                 | 8.3 | 1895         | 0.15        | 0.00        | 0.16        | 0.18        | 11.80      | -           | 2.63        | 0.22        | 19.81      | 2.23       | 0.14       |
| MT-7B              | 16.7                | 8.3 | -            | 0.51        | 0.00        | 0.26        | 1.82        | 8.15       | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-26

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 10.40                  | 6.95            | 1.52           | 100            | 0.928            | 1880.0            |
| MR-1B              | 13.6                | -                      | 5.05            | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 14.86                  | 4.31            | 1.14           | 95             | -                | -                 |
| DR-1S              | 1.0                 | 9.43                   | 2.39            | 1.47           | 145            | -                | -                 |
| DR-3S              | 1.0                 | 7.43                   | 6.95            | 1.36           | 100            | 0.936            | 1268.0            |
| DR-3B              | 13.6                | -                      | 2.71            | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 13.11                  | 2.41            | 1.08           | 125            | -                | -                 |
| DR-5B              | 3.0                 | -                      | 2.26            | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 5.20                   | 4.05            | 1.12           | 105            | 0.551            | 995.0             |
| DR-7B              | 2.4                 | -                      | 3.28            | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 7.00                   | 4.15            | 1.19           | 140            | -                | -                 |
| PC-3S              | 1.0                 | 2.22                   | 1.39            | 0.79           | 175            | 0.284            | 767.0             |
| PC-3B              | 15.2                | -                      | 2.67            | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 4.00                   | 1.88            | 0.81           | 165            | 0.406            | 618.0             |
| PC-5B              | 3.0                 | -                      | 3.72            | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 7.00                   | 1.18            | 0.74           | 200            | 0.013            | 33.0              |
| FR-3B              | 12.1                | -                      | 1.88            | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 2.25                   | 2.64            | 0.85           | 175            | -                | -                 |
| FR-5B              | 2.6                 | -                      | 1.55            | -              | -              | -                | -                 |
| WB-1S              | 1.0                 | 7.75                   | 1.81            | 0.90           | 175            | 0.266            | 567.0             |
| WB-3S              | 1.0                 | 6.50                   | 1.18            | 0.72           | 200            | 0.257            | 672.0             |
| WB-3B              | 13.6                | -                      | 2.15            | -              | -              | -                | -                 |
| WB-5S              | 1.0                 | 3.00                   | 0.87            | 0.61           | 250            | -                | -                 |
| WB-5B              | 3.0                 | -                      | 1.00            | -              | -              | -                | -                 |
| WB-7S              | 1.0                 | 10.00                  | 1.92            | 0.88           | 150            | 0.418            | 748.0             |
| CP-3S              | 1.0                 | 6.00                   | 1.67            | 0.80           | 140            | 0.306            | 745.0             |
| CP-3B              | 9.1                 | -                      | 3.76            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 19.00                  | 1.56            | 1.12           | 125            | -                | -                 |

## MOBILE BAY CRUISE MB-26

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m <sup>2</sup> /d |
|--------------------|---------------------|------------------------|----------------|----------------|------------------|--------------------------------|
| FM-3S              | 1.0                 | 6.75                   | 1.25           | 150            | 0.233            | 621.0                          |
| FM-3B              | 13.3                | -                      | 1.55           | -              | -                | -                              |
| FM-5S              | 1.0                 | 15.50                  | 1.25           | 130            | -                | -                              |
| FM-5B              | 3.2                 | -                      | 2.27           | -              | -                | -                              |
| FM-7S              | 1.0                 | 6.00                   | 1.39           | 190            | 0.259            | 406.0                          |
| MS-1S              | 1.0                 | 10.38                  | 0.94           | 225            | 0.083            | 308.0                          |
| MS-1B              | 3.2                 | -                      | 1.49           | -              | -                | -                              |
| MS-3S              | 1.0                 | 6.78                   | 1.42           | 200            | -                | -                              |
| MS-5S              | 1.0                 | 10.11                  | 3.06           | 125            | 0.250            | 622.0                          |
| MS-5B              | 3.0                 | -                      | 1.49           | -              | -                | -                              |
| BS-1S              | 1.0                 | 6.70                   | 1.99           | 125            | -                | -                              |
| BS-3S              | 1.0                 | 3.88                   | 0.70           | 225            | 0.168            | 630.0                          |
| BS-3B              | 14.5                | -                      | 4.78           | -              | -                | -                              |
| BS-5S              | 1.0                 | -                      | 1.15           | 200            | -                | -                              |
| BS-7S              | 1.0                 | 7.62                   | 2.83           | 125            | 0.718            | 1036.0                         |
| BS-7B              | 3.0                 | -                      | 5.21           | -              | -                | -                              |
| BS-9S              | 1.0                 | 13.88                  | 7.19           | 150            | -                | -                              |
| BS-11S             | 1.0                 | 7.62                   | 3.89           | 140            | 0.889            | 1414.0                         |
| BS-11B             | 4.0                 | -                      | 4.73           | -              | -                | -                              |
| MT-1S              | 1.0                 | -                      | 0.50           | 150            | -                | -                              |
| MT-1B              | 13.3                | -                      | 0.83           | -              | -                | -                              |
| MT-3S              | 1.0                 | -                      | 0.11           | 325            | 0.125            | 414.0                          |
| MT-3B              | 14.5                | -                      | 0.90           | -              | -                | -                              |
| MT-5S              | 1.0                 | -                      | 0.45           | 350            | -                | -                              |
| MT-5B              | 14.0                | -                      | 0.42           | -              | -                | -                              |
| MT-7S              | 1.0                 | 3.87                   | 0.32           | 500            | 0.086            | 557.0                          |
| MT-7B              | 16.7                | -                      | 1.27           | -              | -                | -                              |

## **Mobile Bay Cruise Report**

**MB-27**

3 July 1992

**Vessel:**

*R/V A.E. Verrill*

**Operation Area:**

Mobile Bay: from Fort Morgan to Mobile River  
following the ship channel

**Scientific Party:**

William Schroeder (Chief Scientist)  
Jean Cowan  
Felix Fernandez  
Steve Luker  
Intro to Oceanography class

**Supporting Agency:**

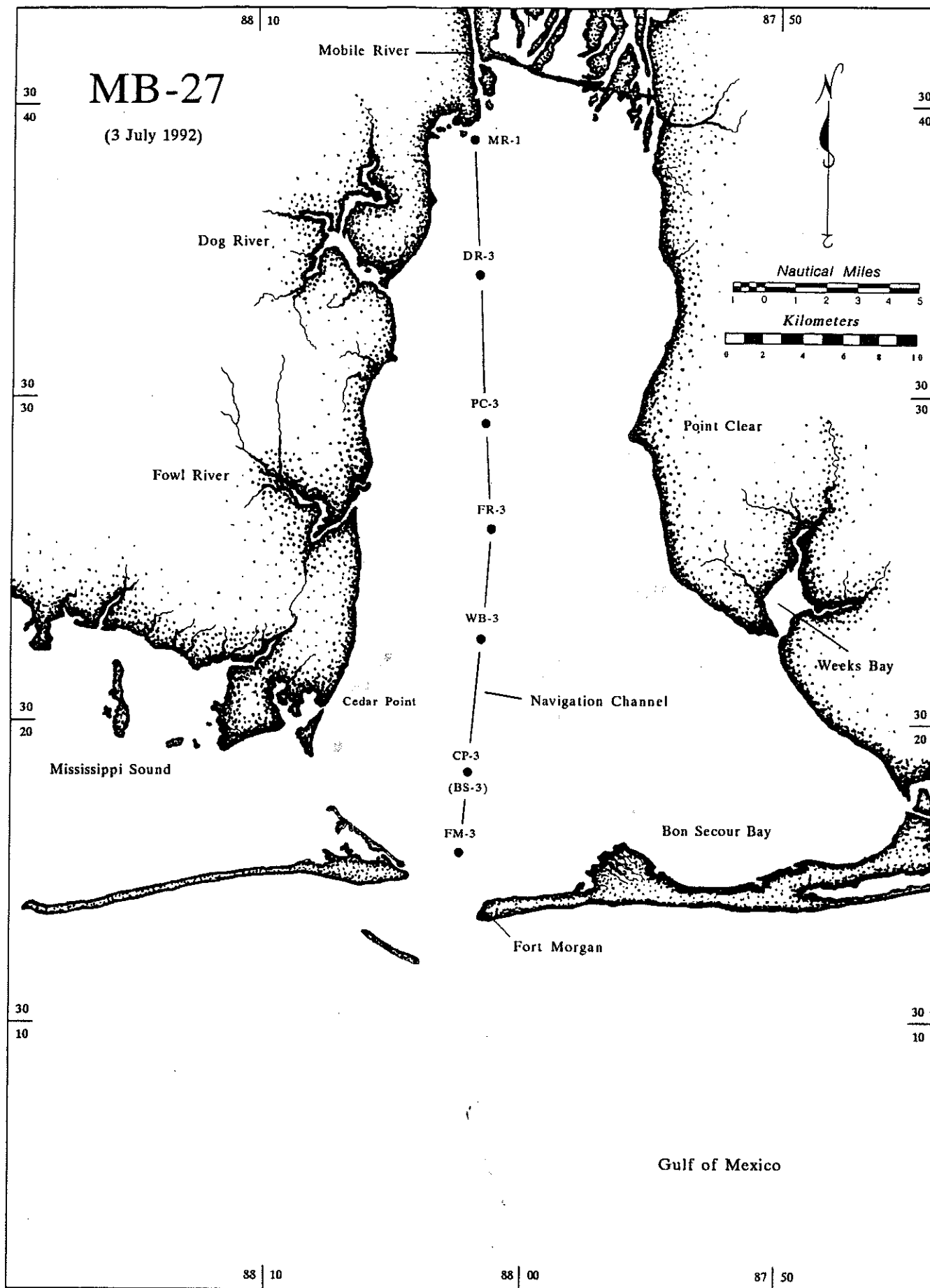
U.S. Geological Survey

**Research Objectives:**

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 7 surface stations (7 of those including bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations.

**Cruise Summary:**

Departed DISL 0900. Deadheaded to station FM-3. Began sampling 0940. Stations were continued going upbay following the ship channel through station MR-1. Returned to DISL 1400.



## MOBILE BAY CRUISE MB-27

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LON<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 7/3/92        | 1204          | 30 : 38.1        | 88 : 2.0         | 12779.8          | 47180.2          | 12.8                | 5.4               | 29.6        | 5.3         | 72          |
| MR-1B              | 11.8                | 7/3/92        | 1204          | 30 : 38.1        | 88 : 2.0         | 12779.8          | 47180.2          | 12.8                | 25.7              | 27.9        | 1.1         | 17          |
| DR-3S              | 1.0                 | 7/3/92        | 1128          | 30 : 34.0        | 88 : 1.7         | 12780.5          | 47165.2          | 13.4                | 8.1               | 30.4        | 6.5         | 90          |
| DR-3B              | 12.4                | 7/3/92        | 1128          | 30 : 34.0        | 88 : 1.7         | 12780.5          | 47165.2          | 13.4                | 27.1              | 27.9        | 1.3         | 19          |
| PC-3S              | 1.0                 | 7/3/92        | 1040          | 30 : 28.4        | 88 : 1.1         | 12783.5          | 47144.4          | 14.3                | 13.6              | 28.9        | 6.7         | 94          |
| PC-3B              | 13.3                | 7/3/92        | 1040          | 30 : 28.4        | 88 : 1.1         | 12783.5          | 47144.4          | 14.3                | 27.6              | 27.4        | 2.5         | 38          |
| FR-3S              | 1.0                 | 7/3/92        | 1014          | 30 : 25.4        | 88 : 0.9         | 12782.9          | 47132.3          | 10.4                | 14.7              | 28.6        | 6.9         | 97          |
| FR-3B              | 9.4                 | 7/3/92        | 1014          | 30 : 25.4        | 88 : 0.9         | 12782.9          | 47132.3          | 10.4                | 28.9              | 26.4        | 3.7         | 53          |
| WB-3S              | 1.0                 | 7/3/92        | 942           | 30 : 22.6        | 88 : 1.3         | 12777.3          | 47121.0          | 13.4                | 15.9              | 28.5        | 6.9         | 98          |
| WB-3B              | 12.4                | 7/3/92        | 942           | 30 : 22.6        | 88 : 1.3         | 12777.3          | 47121.0          | 13.4                | 30.5              | 26.5        | 3.8         | 56          |
| CP-3S              | 1.0                 | 7/3/92        | 905           | 30 : 18.4        | 88 : 2.0         | 12768.0          | 47103.5          | 14.0                | 21.5              | 28.6        | 6.4         | 93          |
| CP-3B              | 13.0                | 7/3/92        | 905           | 30 : 18.4        | 88 : 2.0         | 12768.0          | 47103.5          | 14.0                | 31.5              | 26.0        | 4.4         | 64          |
| FM-3S              | -1.0                | 7/3/92        | 823           | 30 : 15.5        | 88 : 2.3         | 12762.2          | 47091.4          | 13.1                | 24.3              | 28.2        | 6.6         | 96          |
| FM-3B              | 12.1                | 7/3/92        | 823           | 30 : 15.5        | 88 : 2.3         | 12762.2          | 47091.4          | 13.1                | 31.1              | 26.1        | 5.0         | 73          |



## MOBILE BAY CRUISE MB-27

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 8.3 | 1101         | 1.34        | 6.53        | 0.85        | 13.49       | 75.73      | 447         | 14.84       | 0.00        | 89.04      | 11.38      | 0.93       |
| MR-1B              | 11.8                | 8.4 | -            | 1.41        | 28.44       | >2.50       | 4.44        | 33.55      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 8.4 | 1044         | 0.97        | 5.16        | 0.75        | 8.83        | 68.93      | 388         | 10.15       | 0.09        | 102.59     | 13.40      | 0.74       |
| DR-3B              | 12.4                | 8.4 | -            | 1.26        | 28.44       | >2.50       | 6.84        | 32.00      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 8.6 | 1263         | 0.70        | 3.71        | 1.02        | 7.04        | 58.63      | 324         | 5.67        | 0.36        | 115.54     | 16.24      | 0.79       |
| PC-3B              | 13.3                | 8.6 | -            | 0.97        | 9.02        | >2.50       | 7.35        | 27.46      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 8.7 | 1248         | 0.33        | 2.20        | 0.46        | 1.00        | 52.32      | 319         | 10.04       | 0.28        | 87.51      | 13.57      | 1.00       |
| FR-3B              | 9.4                 | 8.7 | -            | 0.67        | 2.63        | 0.62        | 3.90        | 18.98      | -           | -           | -           | -          | -          | -          |
| WB-3S              | 1.0                 | 8.7 | 1288         | 0.20        | 2.04        | 0.33        | 0.87        | 45.82      | 286         | 7.45        | 0.46        | 91.49      | 14.45      | 0.80       |
| WB-3B              | 12.4                | 8.7 | -            | 0.52        | 2.29        | 0.43        | 3.75        | 14.62      | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | 8.8 | 1460         | 0.11        | 1.69        | 0.09        | 0.61        | 23.74      | 246         | 6.16        | 0.50        | 80.91      | 11.61      | 0.60       |
| CP-3B              | 13.0                | 8.7 | -            | 0.43        | 2.09        | 0.34        | 2.97        | 9.18       | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | 8.7 | 1530         | 0.11        | 1.78        | 0.06        | 5.09        | 7.75       | 239         | 1.00        | 0.50        | 78.41      | 11.71      | 0.70       |
| FM-3B              | 12.1                | 8.7 | -            | 0.23        | 2.02        | 0.23        | 0.68        | 11.64      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-27

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 17.00                  | 3.65            | 1.81           | 730            | 0.565            | 335.0             |
| MR-1B              | 11.8                | -                      | 0.81            | -              | -              | -                | -                 |
| DR-3S              | 1.0                 | 8.20                   | 4.62            | 1.89           | 630            | 0.417            | 312.0             |
| DR-3B              | 12.4                | -                      | 1.39            | -              | -              | -                | -                 |
| PC-3S              | 1.0                 | 9.00                   | 6.95            | 1.35           | 880            | 0.352            | 382.0             |
| PC-3B              | 13.3                | -                      | 2.54            | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 12.20                  | 9.35            | 1.58           | 850            | 1.300            | 1241.0            |
| FR-3B              | 9.4                 | -                      | 3.94            | -              | -              | -                | -                 |
| WB-3S              | 1.0                 | 7.80                   | 7.44            | 1.26           | 100            | 1.412            | 1926.0            |
| WB-3B              | 12.4                | -                      | 4.03            | -              | -              | -                | -                 |
| CP-3S              | 1.0                 | 7.00                   | 5.70            | 0.86           | 160            | 0.752            | 1519.0            |
| CP-3B              | 13.0                | -                      | 4.61            | -              | -              | -                | -                 |
| FM-3S              | 1.0                 | -                      | 5.84            | 0.85           | 160            | 0.187            | 418.0             |
| FM-3B              | 12.1                | -                      | 5.53            | -              | -              | -                | -                 |



## **Mobile Bay Cruise Report**

**MB-28**

8, 9 July 1992

**Vessel:**

*Robalo* (8 July)  
*R/V Deborah B.* (9 July)

**Operation Area:**

- \* 8 July: Bay Mouth following ship channel from Farewell Buoy to Cedar Point; east to Bon Secour Bay following Intracoastal Waterway
- \* 9 July: Mobile Bay from Fort Morgan to Mobile River

**Scientific Party:**

Jon Pennock (Chief Scientist)  
Stan Beasley  
Jean Cowan  
Felix Fernandez

**Supporting Agency:**

U.S. Geological Survey

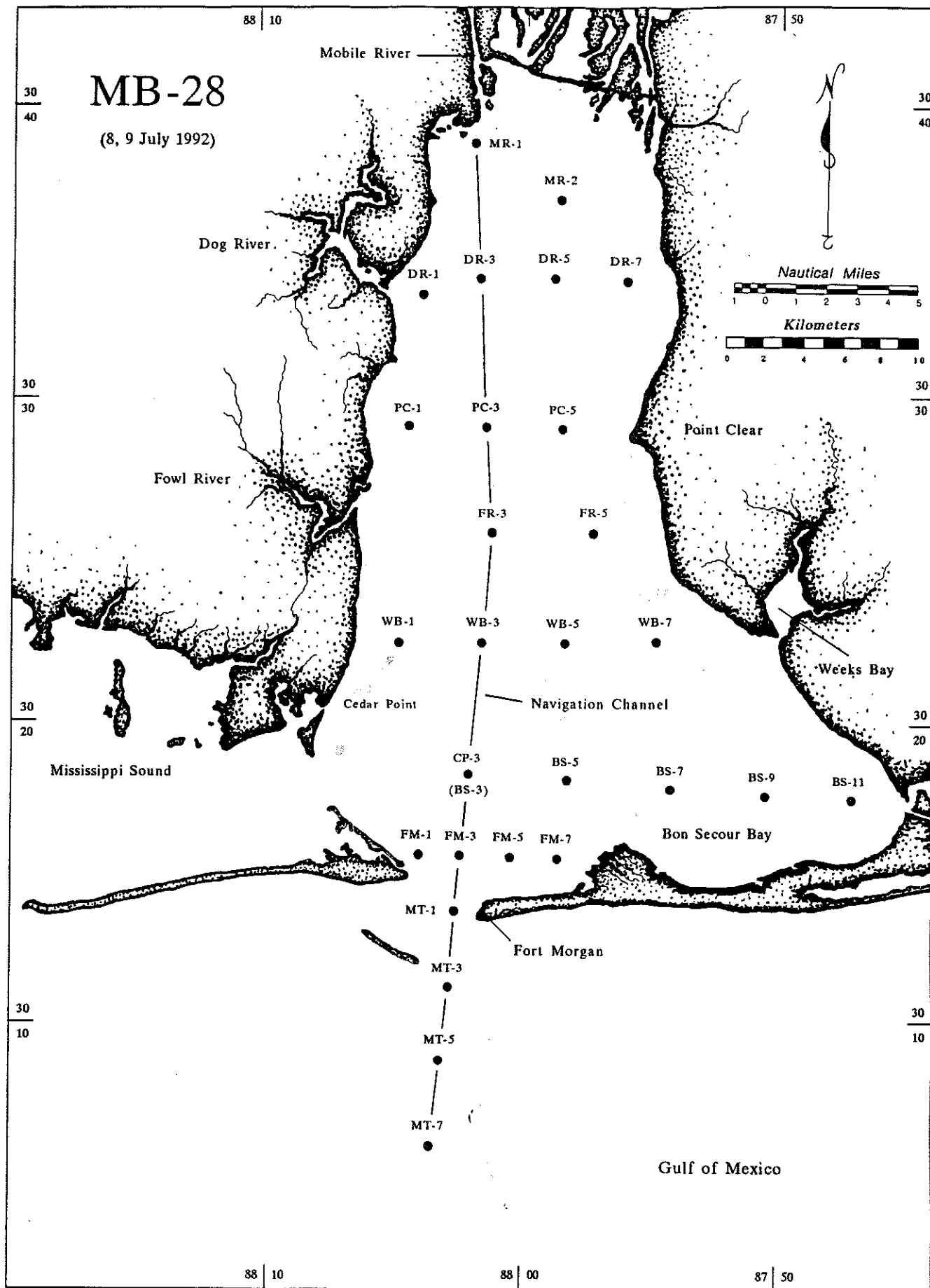
**Research Objectives:**

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 29 surface stations (20 of those including bottom water casts). Samples were taken for  $\text{TCO}_2$ , DOC, DON, DOP, POP, PC/PN, taxonomy identification and  $^{14}\text{C}$  productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations. Surface sediment samples for PC/PN analysis were collected using a Shipek bottom sampler at selected Bay stations.

**Cruise Summary:**

8 July: Departed DISL 0700. Deadheaded to station MT-7. Began sampling 0745. Stations were continued going north to station CP-3 (BS-3), then east to BS-11. Returned to DISL 1200. No Loran-C or lat/long coordinates were recorded during cruise.

9 July: Departed DISL 0610. Deadheaded to station FM-1. Began sampling 0620. Stations were continued going upbay through station MR-1. Returned to DISL 1630.



## MOBILE BAY CRUISE MB-28

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LON<br>DEG | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 7/9/92        | 1503          | 30         | 38.0       | 88         | 1.9        | 12780.4          | 47180.1          | 14.3                | 5.8               | 32.3        | 7.6         | 108         |
| MR-1B              | 13.3                | 7/9/92        | 1503          | 30         | 38.0       | 88         | 1.9        | 12780.4          | 47180.1          | 14.3                | 33.0              | 26.4        | 1.7         | 26          |
| MR-2S              | 1.0                 | 7/9/92        | 1441          | 30         | 36.3       | 87         | 58.5       | 12815.3          | 47175.1          | 2.7                 | 3.2               | 32.0        | 9.0         | 126         |
| DR-1S              | 1.0                 | 7/9/92        | 1339          | 30         | 32.5       | 88         | 4.0        | 12755.6          | 47159.1          | 2.7                 | 6.9               | 31.8        | 8.3         | 118         |
| DR-3S              | 1.0                 | 7/9/92        | 1354          | 30         | 34.0       | 88         | 1.7        | 12780.4          | 47165.4          | 14.0                | 6.3               | 32.2        | 9.4         | 134         |
| DR-3B              | 13.0                | 7/9/92        | 1354          | 30         | 34.0       | 88         | 1.7        | 12780.4          | 47165.4          | 14.0                | 33.6              | 26.1        | 2.1         | 32          |
| DR-5S              | 1.0                 | 7/9/92        | 1411          | 30         | 34.2       | 87         | 58.5       | 12814.3          | 47167.5          | 3.0                 | 5.7               | 32.1        | 8.4         | 119         |
| DR-5B              | 2.0                 | 7/9/92        | 1411          | 30         | 34.2       | 87         | 58.5       | 12814.3          | 47167.5          | 3.0                 | 8.4               | 30.7        | 5.6         | 79          |
| DR-7S              | 1.0                 | 7/9/92        | 1424          | 30         | 34.4       | 87         | 56.0       | 12840.5          | 47169.1          | 2.7                 | 4.9               | 32.3        | 7.7         | 108         |
| DR-7B              | 1.7                 | 7/9/92        | 1424          | 30         | 34.4       | 87         | 56.0       | 12840.5          | 47169.1          | 2.7                 | 5.6               | 31.5        | 5.6         | 79          |
| PC-1S              | 1.0                 | 7/9/92        | 1319          | 30         | 29.1       | 88         | 4.0        | 12753.3          | 47145.9          | 3.0                 | 11.3              | 30.7        | 6.7         | 95          |
| PC-3S              | 1.0                 | 7/9/92        | 1302          | 30         | 28.5       | 88         | 1.1        | 12783.2          | 47144.5          | 14.9                | 9.3               | 31.5        | 7.8         | 111         |
| PC-3B              | 13.9                | 7/9/92        | 1302          | 30         | 28.5       | 88         | 1.1        | 12783.2          | 47144.5          | 14.9                | 34.2              | 25.8        | 3.0         | 44          |
| PC-5S              | 1.0                 | 7/9/92        | 1244          | 30         | 28.4       | 87         | 58.0       | 12815.3          | 47145.2          | 3.6                 | 9.6               | 31.5        | 7.7         | 111         |
| PC-5B              | 2.6                 | 7/9/92        | 1244          | 30         | 28.4       | 87         | 58.0       | 12815.3          | 47145.2          | 3.6                 | 14.7              | 30.5        | 4.8         | 69          |
| FR-3S              | 1.0                 | 7/9/92        | 1220          | 30         | 25.3       | 88         | 0.9        | 12783.1          | 47132.0          | 13.7                | 11.4              | 31.3        | 7.2         | 104         |
| FR-3B              | 12.7                | 7/9/92        | 1220          | 30         | 25.3       | 88         | 0.9        | 12783.1          | 47132.0          | 13.7                | 34.1              | 25.6        | 3.9         | 58          |
| FR-5S              | 1.0                 | 7/9/92        | 1204          | 30         | 25.1       | 87         | 56.9       | 12825.0          | 47132.5          | 3.6                 | 14.8              | 31.2        | 7.1         | 105         |
| FR-5B              | 2.6                 | 7/9/92        | 1204          | 30         | 25.1       | 87         | 56.9       | 12825.0          | 47132.5          | 3.6                 | 14.8              | 31.3        | 7.1         | 105         |
| WB-1S              | 1.0                 | 7/9/92        | 745           | 30         | 22.6       | 88         | 4.4        | 12745.1          | 47120.2          | 3.6                 | 13.7              | 30.5        | -           | -           |
| WB-3S              | 1.0                 | 7/9/92        | 1116          | 30         | 22.6       | 88         | 1.3        | 12777.0          | 47121.0          | 6.4                 | 13.8              | 31.5        | 6.9         | 100         |
| WB-3B              | 5.4                 | 7/9/92        | 1116          | 30         | 22.6       | 88         | 1.3        | 12777.0          | 47121.0          | 6.4                 | 32.2              | 26.5        | 4.2         | 62          |
| WB-5S              | 1.0                 | 7/9/92        | 1133          | 30         | 22.7       | 87         | 58.2       | 12810.2          | 47155.4          | 3.6                 | 17.1              | 31.2        | 6.2         | 92          |
| WB-5B              | 2.6                 | 7/9/92        | 1133          | 30         | 22.7       | 87         | 58.2       | 12810.2          | 47155.4          | 3.6                 | 17.1              | 30.6        | 5.3         | 78          |
| WB-7S              | 1.0                 | 7/9/92        | 1146          | 30         | 22.6       | 87         | 55.3       | 12840.3          | 47122.8          | 3.4                 | 14.9              | 31.7        | 7.0         | 103         |
| CP-3S              | 1.0                 | 7/9/92        | 720           | 30         | 18.3       | 88         | 1.9        | 12768.1          | 47103.2          | 14.9                | 17.7              | 30.1        | 6.4         | 94          |
| CP-3B              | 13.9                | 7/9/92        | 720           | 30         | 18.3       | 88         | 1.9        | 12768.1          | 47103.2          | 14.9                | 34.4              | 25.1        | 4.3         | 63          |
| FM-1S              | 1.0                 | 7/9/92        | 620           | 30         | 15.7       | 88         | 3.7        | 12748.3          | 47092.2          | 4.8                 | 17.2              | 30.2        | 6.4         | 93          |

## MOBILE BAY CRUISE MB-28

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LON<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3S              | 1.0                 | 7/9/92        | 632           | 30 : 15.5        | 88 : 2.3         | 12762.7          | 47091.5          | 14.6                | 23.7              | 29.5        | 6.0         | 89          |
| FM-3B              | 13.6                | 7/9/92        | 632           | 30 : 15.5        | 88 : 2.3         | 12762.7          | 47091.5          | 14.6                | 35.0              | 24.9        | 4.2         | 62          |
| FM-5S              | 1.0                 | 7/9/92        | 645           | 30 : 15.6        | 88 : 0.7         | 12778.8          | 47092.4          | 4.6                 | 28.9              | 27.9        | 5.5         | 82          |
| FM-5B              | 3.6                 | 7/9/92        | 645           | 30 : 15.6        | 88 : 0.7         | 12778.8          | 47092.4          | 4.6                 | 32.4              | 26.3        | 5.1         | 75          |
| FM-7S              | 1.0                 | 7/9/92        | 656           | 30 : 15.5        | 87 : 58.9        | 12797.8          | 47092.0          | 4.2                 | 27.4              | 27.6        | 5.6         | 82          |
| BS-3S              | 1.0                 | 7/8/92        | 920           | 30 : 17.2        | 88 : 2.1         | 12766.0          | 47098.5          | 14.9                | 15.4              | 30.2        | 6.7         | 96          |
| BS-3B              | 13.9                | 7/8/92        | 920           | 30 : 17.2        | 88 : 2.1         | 12766.0          | 47098.5          | 14.9                | 33.9              | 25.0        | 4.1         | 60          |
| BS-5S              | 1.0                 | 7/8/92        | 1033          | 30 : 16.9        | 87 : 58.3        | 12805.1          | 47098.1          | 3.6                 | 17.3              | 30.6        | 6.7         | 98          |
| BS-7S              | 1.0                 | 7/8/92        | 917           | 30 : 16.8        | 87 : 54.9        | 12839.9          | 47098.3          | 4.0                 | 17.8              | 31.2        | 6.2         | 92          |
| BS-7B              | 2.3                 | 7/8/92        | 917           | 30 : 16.8        | 87 : 54.9        | 12839.9          | 47098.3          | 4.0                 | 17.9              | 30.9        | 6.1         | 91          |
| BS-9S              | 1.0                 | 7/8/92        | 937           | 30 : 16.8        | 87 : 51.1        | 12879.9          | 47098.9          | 4.0                 | 13.6              | 31.3        | 6.5         | 94          |
| BS-11S             | 1.0                 | 7/8/92        | 955           | 30 : 16.7        | 87 : 47.9        | 12913.2          | 47099.4          | 5.0                 | 13.6              | 32.5        | 6.1         | 90          |
| BS-11B             | -3.3                | 7/8/92        | 955           | 30 : 16.7        | 87 : 47.9        | 12913.2          | 47099.4          | 5.0                 | 13.8              | 31.4        | 5.2         | 76          |
| MT-1S              | 1.0                 | 7/8/92        | 845           | 30 : 14.1        | 88 : 2.3         | 12762.2          | 47085.8          | 14.3                | 17.3              | 29.6        | 6.7         | 97          |
| MT-1B              | 11.0                | 7/8/92        | 845           | 30 : 14.1        | 88 : 2.3         | 12762.2          | 47085.8          | 14.3                | 34.4              | 24.2        | 4.1         | 60          |
| MT-3S              | 1.0                 | 7/8/92        | 830           | 30 : 11.7        | 88 : 2.6         | 12757.2          | 47075.4          | 15.5                | 27.2              | 27.9        | 5.5         | 82          |
| MT-3B              | 12.7                | 7/8/92        | 830           | 30 : 11.7        | 88 : 2.6         | 12757.2          | 47075.4          | 15.5                | 34.6              | 23.7        | 3.6         | 52          |
| MT-5S              | 1.0                 | 7/8/92        | 808           | 30 : 9.6         | 88 : 3.2         | 12750.3          | 47065.8          | 15.0                | 30.6              | 27.3        | 6.3         | 94          |
| MT-5B              | 13.0                | 7/8/92        | 808           | 30 : 9.6         | 88 : 3.2         | 12750.3          | 47065.8          | 15.0                | 34.8              | 23.1        | 3.7         | 53          |
| MT-7S              | 1.0                 | 7/8/92        | 745           | 30 : 7.3         | 88 : 4.1         | 12739.4          | 47056.0          | 17.7                | 27.3              | 28.5        | 6.0         | 89          |
| MT-7B              | 15.0                | 7/8/92        | 745           | 30 : 7.3         | 88 : 4.1         | 12739.4          | 47056.0          | 17.7                | 34.8              | 30.0        | 4.3         | 69          |

## MOBILE BAY CRUISE MB-28

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 8.3 | 1055         | 0.45        | 2.30        | 2.07        | 1.00        | 61.08      | 367         | 14.69       | 0.07        | 126.80     | 17.69      | 1.23       |
| MR-1B              | 13.3                | 8.2 | -            | 1.39        | 0.76        | 1.58        | 6.00        | 22.00      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 8.6 | -            | 0.20        | 0.94        | 0.23        | 0.51        | 68.59      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 8.5 | -            | 0.10        | 1.04        | 0.25        | 0.73        | 64.49      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 8.6 | 937          | 0.18        | 1.04        | 0.25        | 0.43        | 60.07      | 366         | 19.74       | 0.34        | 161.48     | 18.25      | 1.12       |
| DR-3B              | 13.0                | 8.1 | -            | 1.06        | 0.86        | 1.01        | 2.98        | 14.50      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 8.6 | -            | 0.30        | 1.19        | 0.27        | 0.46        | 66.40      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.0                 | 8.4 | -            | 0.35        | 1.32        | 0.44        | 1.38        | 70.79      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 8.5 | 847          | 0.10        | 1.35        | 0.23        | 1.04        | 67.63      | 356         | 18.02       | 0.42        | 181.23     | 23.04      | 1.44       |
| DR-7B              | 1.7                 | 8.2 | -            | 0.28        | 1.13        | 0.33        | 3.18        | 71.75      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 8.4 | -            | 0.15        | 1.15        | 0.72        | 0.54        | 55.17      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 8.4 | 1015         | 0.10        | 1.25        | 0.27        | 0.66        | 60.62      | 336         | 15.15       | 0.33        | 88.82      | 10.82      | 0.70       |
| PC-3B              | 13.9                | 8.1 | -            | 1.16        | 1.33        | 0.72        | 3.81        | 12.96      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 8.4 | 1004         | 0.10        | 1.23        | 0.23        | -           | 59.52      | 329         | 16.33       | 0.33        | -          | -          | 0.57       |
| PC-5B              | 2.6                 | 8.3 | -            | 0.43        | 1.40        | 0.18        | 0.27        | 58.24      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 8.4 | 1094         | 0.13        | 1.28        | 0.18        | 0.48        | 54.18      | 329         | 17.08       | 0.21        | -          | -          | 0.54       |
| FR-3B              | 12.7                | 8.1 | -            | 0.66        | 1.14        | 0.44        | 0.25        | 8.18       | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 8.3 | -            | 0.50        | 1.29        | 0.17        | 0.70        | 57.75      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.6                 | 8.3 | -            | 0.53        | 1.32        | 0.14        | 0.19        | 58.23      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | 8.3 | 1162         | 0.15        | 1.36        | 0.16        | 0.37        | 50.92      | 322         | 13.82       | 0.33        | -          | -          | 0.61       |
| WB-3S              | 1.0                 | 8.3 | 1174         | 0.23        | 1.41        | 0.17        | -           | 49.48      | 314         | 14.19       | 0.29        | 74.65      | 9.64       | 0.60       |
| WB-3B              | 5.4                 | 8.1 | -            | 0.48        | 1.34        | 0.30        | -           | 9.01       | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | 8.3 | -            | 0.40        | 1.41        | 0.17        | 0.21        | 42.85      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.6                 | 8.2 | -            | 0.61        | 1.48        | 0.28        | 0.47        | 46.09      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | 8.3 | 1265         | 0.44        | 1.23        | 0.23        | 0.29        | 47.27      | 285         | 13.69       | 0.13        | 80.88      | 10.04      | 0.79       |
| CP-3S              | 1.0                 | 8.2 | 1287         | 0.15        | 1.93        | 0.41        | -           | 41.48      | 324         | 14.27       | 0.28        | 70.74      | 9.90       | 0.67       |
| CP-3B              | 13.9                | 8.1 | -            | 0.26        | 1.68        | 0.37        | 0.33        | 7.65       | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 8.1 | -            | 0.10        | 1.35        | 0.23        | -           | 40.02      | -           | -           | -           | -          | -          | -          |



## MOBILE BAY CRUISE MB-28

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | 8.1 | 1508         | 0.00        | 1.23        | 0.23        | 0.18        | 23.04      | 343         | 9.15        | 0.75        | 60.55      | 7.69       | 0.28       |
| FM-3B              | 13.6                | 8.0 | -            | 0.10        | 1.36        | 0.69        | 0.19        | 7.94       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.1 | -            | 0.00        | 1.53        | 0.23        | 0.05        | 11.55      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.6                 | 8.1 | -            | 0.00        | 1.48        | 0.28        | 0.37        | 6.25       | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 8.1 | 1680         | 0.05        | 1.35        | 0.23        | -           | 15.11      | 374         | 9.42        | 0.56        | 99.30      | 12.44      | 0.77       |
| BS-3S              | 1.0                 | 8.7 | 1254         | 0.00        | 1.23        | 0.23        | 1.19        | 42.91      | 331         | 10.92       | 0.52        | 57.65      | 7.77       | 0.43       |
| BS-3B              | 13.9                | 8.4 | -            | 0.21        | 1.39        | 0.37        | -           | 4.21       | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | 8.8 | -            | 0.03        | 1.25        | 0.21        | 0.38        | 31.89      | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | 8.7 | 1393         | 0.46        | 1.23        | 0.23        | 0.45        | 40.43      | 289         | 13.08       | 0.29        | 48.46      | 6.44       | 0.59       |
| BS-7B              | 2.3                 | 8.7 | -            | 0.36        | 1.23        | 0.23        | 0.54        | 31.92      | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | 8.4 | -            | 0.54        | 1.16        | 0.25        | 0.33        | 71.41      | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | 8.5 | 1275         | 0.49        | 1.25        | 0.27        | 0.50        | 63.92      | 370         | 14.73       | 0.26        | 107.67     | 14.65      | 1.06       |
| BS-11B             | 3.3                 | 8.4 | -            | 0.54        | 1.31        | 0.27        | 0.60        | 62.65      | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | 8.7 | -            | 0.26        | 1.16        | 0.30        | 0.62        | 33.32      | -           | -           | -           | -          | -          | -          |
| MT-1B              | 11.0                | 8.5 | -            | 0.49        | 1.32        | 0.44        | -           | 5.13       | -           | -           | -           | -          | -          | -          |
| MT-3S              | 1.0                 | 8.7 | 1711         | 0.21        | 1.28        | 0.30        | 0.37        | 9.85       | 194         | 6.92        | 0.31        | 49.42      | 6.77       | 0.43       |
| MT-3B              | 12.7                | 8.5 | -            | 0.64        | 1.33        | 0.72        | 1.13        | 9.26       | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | 8.7 | -            | 0.21        | 1.22        | 0.30        | 0.29        | 5.11       | -           | -           | -           | -          | -          | -          |
| MT-5B              | 13.0                | 8.5 | -            | 0.56        | 1.24        | 1.39        | 0.87        | 12.68      | -           | -           | -           | -          | -          | -          |
| MT-7S              | 1.0                 | 8.7 | 1660         | 0.28        | 1.33        | 0.37        | 0.45        | 6.69       | 209         | 7.08        | 0.24        | 36.56      | 4.03       | 0.23       |
| MT-7B              | 15.0                | 8.6 | -            | 0.41        | 1.02        | 3.35        | 0.47        | 14.72      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-28

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 14.70                  | 10.44           | 0.87           | 75             | 1.556            | 2344.0            |
| MR-1B              | 13.3                | -                      | 2.41            | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 9.20                   | 9.40            | 1.08           | 100            | -                | -                 |
| DR-1S              | 1.0                 | 6.20                   | 3.19            | 0.83           | 125            | -                | -                 |
| DR-3S              | 1.0                 | 7.70                   | 10.47           | 0.49           | 100            | 0.528            | 2022.0            |
| DR-3B              | 13.0                | -                      | 2.86            | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 6.20                   | 6.26            | 0.87           | 125            | -                | -                 |
| DR-5B              | 2.0                 | -                      | 12.84           | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 12.70                  | 11.55           | 1.26           | 50             | 0.840            | 1284.0            |
| DR-7B              | 1.7                 | -                      | 10.51           | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 12.20                  | 6.52            | -              | 100            | -                | -                 |
| PC-3S              | 1.0                 | 7.20                   | 5.67            | 1.13           | 125            | 0.338            | 485.0             |
| PC-3B              | 13.9                | -                      | 6.19            | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 6.20                   | 1.93            | 0.68           | 150            | 0.302            | 842.0             |
| PC-5B              | 2.6                 | -                      | 5.59            | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 8.20                   | 1.76            | 0.91           | 125            | 0.292            | 596.0             |
| FR-3B              | 12.7                | -                      | 8.05            | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | -                      | 4.69            | 1.39           | 100            | -                | -                 |
| FR-5B              | 2.6                 | -                      | 6.74            | -              | -              | -                | -                 |
| WB-1S              | 1.0                 | 10.20                  | 2.13            | 1.16           | 135            | 0.460            | 523.0             |
| WB-3S              | 1.0                 | 16.70                  | 1.32            | 0.96           | 150            | 0.327            | 596.0             |
| WB-3B              | 5.4                 | -                      | 5.84            | -              | -              | -                | -                 |
| WB-5S              | 1.0                 | 5.20                   | 1.18            | 1.09           | 175            | -                | -                 |
| WB-5B              | 2.6                 | -                      | 6.02            | -              | -              | -                | -                 |
| WB-7S              | 1.0                 | 23.20                  | 3.51            | 1.39           | 75             | 0.423            | 541.0             |
| CP-3S              | 1.0                 | 17.20                  | 2.23            | 0.88           | 100            | 0.730            | 1094.0            |
| CP-3B              | 13.9                | -                      | 8.25            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | -                      | 1.79            | 1.08           | 125            | -                | -                 |

## MOBILE BAY CRUISE MB-28

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | SESTON CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|------------------------|----------------|----------------|------------------|-------------------|
| FM-3S              | 1.0                 | -                      | 1.97                   | 0.69           | 125            | 0.418            | 964.0             |
| FM-3B              | 13.6                | -                      | 2.78                   | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | -                      | 7.03                   | 0.73           | 200            | -                | -                 |
| FM-5B              | 3.6                 | -                      | 2.78                   | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | -                      | 2.23                   | 0.83           | 175            | 0.655            | 1517.0            |
| BS-3S              | 1.0                 | 6.53                   | 0.81                   | 0.68           | 200            | 0.132            | 394.0             |
| BS-3B              | 13.9                | -                      | 12.82                  | -              | -              | -                | -                 |
| BS-5S              | 1.0                 | 6.08                   | 3.86                   | 0.84           | 140            | -                | -                 |
| BS-7S              | 1.0                 | 9.84                   | 3.06                   | 0.86           | 115            | 0.231            | 571.0             |
| BS-7B              | 2.3                 | -                      | 8.57                   | -              | -              | -                | -                 |
| BS-9S              | 1.0                 | 10.38                  | 5.59                   | 1.78           | 75             | -                | -                 |
| BS-11S             | 1.0                 | 12.73                  | 2.91                   | 2.05           | 60             | 0.734            | 835.0             |
| BS-11B             | 3.3                 | -                      | 4.51                   | -              | -              | -                | -                 |
| MT-1S              | 1.0                 | 2.62                   | 1.15                   | 0.78           | 205            | -                | -                 |
| MT-1B              | 11.0                | -                      | 21.20                  | -              | -              | -                | -                 |
| MT-3S              | 1.0                 | 5.73                   | 3.82                   | 0.55           | 330            | 0.528            | 1919.0            |
| MT-3B              | 12.7                | -                      | 6.60                   | -              | -              | -                | -                 |
| MT-5S              | 1.0                 | 5.48                   | 1.30                   | 0.40           | 400            | -                | -                 |
| MT-5B              | 13.0                | -                      | 6.17                   | -              | -              | -                | -                 |
| MT-7S              | 1.0                 | 4.31                   | 0.66                   | 0.49           | 475            | 0.220            | 846.0             |
| MT-7B              | 15.0                | -                      | 3.09                   | -              | -              | -                | -                 |

## ***Mobile Bay Cruise Report***

***MB-29***

3, 4 August 1992

***Vessel:***

*R/V Deborah B.* (3 August)  
*Robalo* (4 August)

***Operation Area:***

- \* 3 August: Mobile Bay from Fort Morgan to Mobile River
- \* 4 August: Bay Mouth following ship channel from Farewell Buoy to Cedar Point; Bon Secour Bay following Intracoastal Waterway

***Scientific Party:***

Felix Fernandez (Chief Scientist)  
Jean Cowan  
Victor Fernandez

***Supporting Agency:***

U.S. Geological Survey

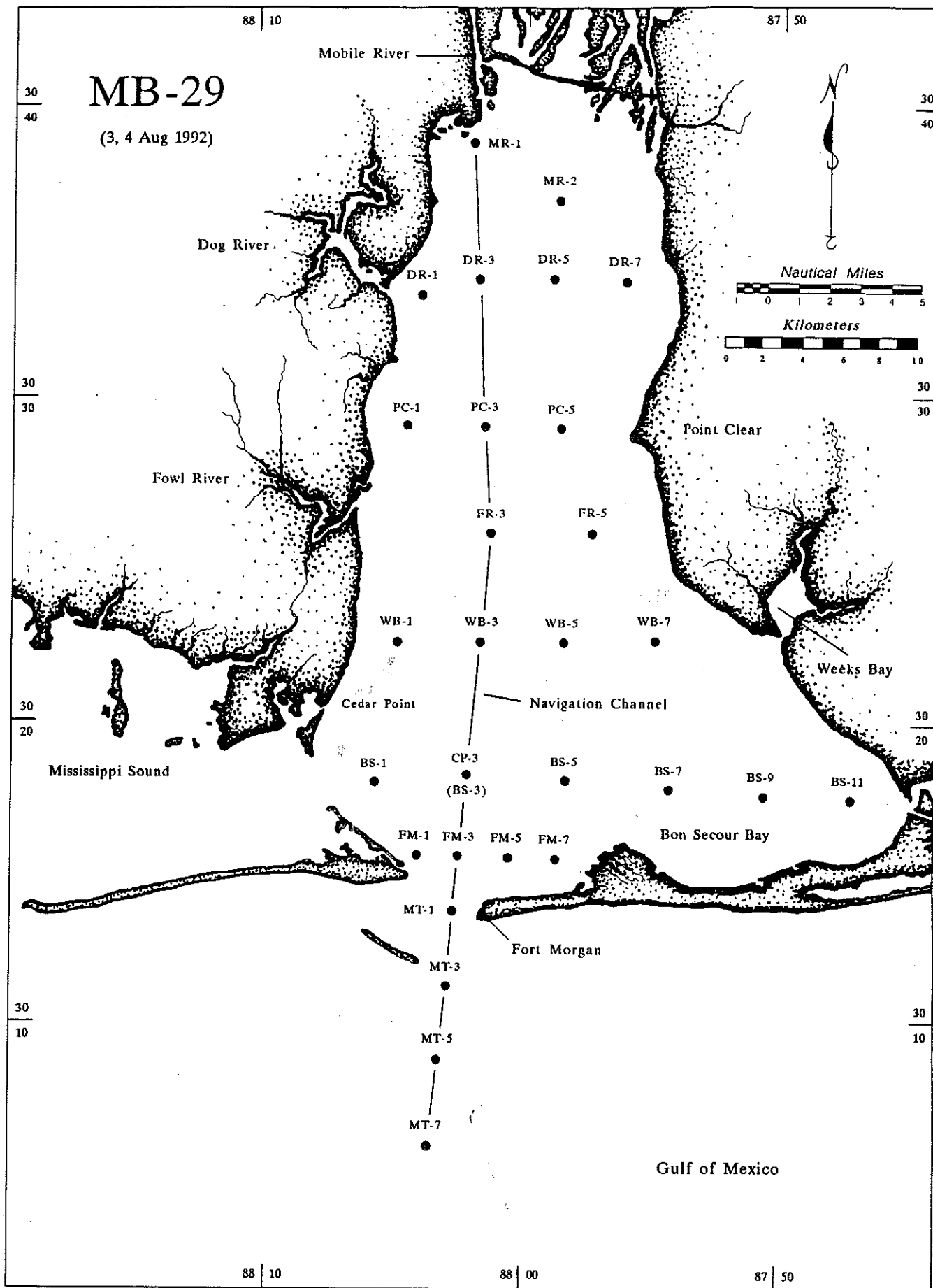
***Research Objectives:***

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 30 surface stations (20 of those including bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations. Surface sediment samples for PC/PN analysis were collected using a Shipek bottom sampler at selected Bay stations.

***Cruise Summary:***

3 August: Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0725. Stations were continued going upbay through station MR-1. Returned to DISL 1400.

4 August: Departed DISL 1030. Deadheaded to station MT-7. Began sampling 1125. Stations were continued going north to station MT-1, then from BS-11 west to BS-1. Returned to DISL 1530.



## MOBILE BAY CRUISE MB-29

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0   8/3/92        | 1235          | 30 : 38.0     | 88 :       | 1.9        | 12780.2     | 47180.1     | 14.0             | 5.5              | 30.6                | 6.2               | 85          |             |             |
| MR-1B              | 13.0   8/3/92       | 1235          | 30 : 38.0     | 88 :       | 1.9        | 12780.2     | 47180.1     | 14.0             | 31.2             | 26.7                | 1.7               | 25          |             |             |
| MR-2S              | 1.0   8/3/92        | 1215          | 30 : 36.4     | 87 :       | 58.6       | 12815.1     | 47175.5     | 3.0              | 3.5              | 30.4                | 7.4               | 100         |             |             |
| DR-1S              | 1.0   8/3/92        | 1113          | 30 : 32.6     | 88 :       | 3.9        | 12755.2     | 47159.1     | 2.7              | 4.3              | 30.9                | 6.8               | 94          |             |             |
| DR-3S              | 1.0   8/3/92        | 1131          | 30 : 33.9     | 88 :       | 1.6        | 12781.0     | 47165.2     | 14.0             | 3.3              | 30.4                | 7.9               | 107         |             |             |
| DR-3B              | 13.0   8/3/92       | 1131          | 30 : 33.9     | 88 :       | 1.6        | 12781.0     | 47165.2     | 14.0             | 29.0             | 26.8                | 3.3               | 49          |             |             |
| DR-5S              | 1.0   8/3/92        | 1146          | 30 : 34.1     | 87 :       | 58.5       | 12814.6     | 47167.0     | 3.4              | 4.2              | 29.8                | 7.1               | 95          |             |             |
| DR-5B              | 2.4   8/3/92        | 1146          | 30 : 34.1     | 87 :       | 58.5       | 12814.6     | 47167.0     | 3.4              | 6.5              | 29.5                | 5.6               | 76          |             |             |
| DR-7S              | 1.0   8/3/92        | 1158          | 30 : 34.4     | 87 :       | 56.1       | 12839.8     | 47169.3     | 2.7              | 4.6              | 30.4                | 7.4               | 102         |             |             |
| DR-7B              | 1.7   8/3/92        | 1158          | 30 : 34.4     | 87 :       | 56.1       | 12839.8     | 47169.3     | 2.7              | 5.3              | 29.9                | 6.7               | 91          |             |             |
| PC-1S              | 1.0   8/3/92        | 1052          | 30 : 29.0     | 88 :       | 3.9        | 12753.7     | 47145.7     | 3.0              | 6.0              | 30.0                | 6.8               | 93          |             |             |
| PC-3S              | 1.0   8/3/92        | 1038          | 30 : 28.4     | 88 :       | 1.0        | 12784.0     | 47144.4     | 14.6             | 9.1              | 29.8                | 5.9               | 82          |             |             |
| PC-3B              | 13.6   8/3/92       | 1038          | 30 : 28.4     | 88 :       | 1.0        | 12784.0     | 47144.4     | 14.6             | 32.9             | 25.7                | 3.3               | 49          |             |             |
| PC-5S              | 1.0   8/3/92        | 1020          | 30 : 28.4     | 87 :       | 58.0       | 12815.4     | 47145.1     | 3.4              | 9.7              | 29.4                | 7.0               | 96          |             |             |
| PC-5B              | 2.4   8/3/92        | 1020          | 30 : 28.4     | 87 :       | 58.0       | 12815.4     | 47145.1     | 3.4              | 10.3             | 29.0                | 7.1               | 97          |             |             |
| FR-3S              | 1.0   8/3/92        | 1001          | 30 : 25.4     | 88 :       | 0.8        | 12784.2     | 47132.5     | 12.5             | 9.1              | 29.1                | 7.3               | 100         |             |             |
| FR-3B              | 11.5   8/3/92       | 1001          | 30 : 25.4     | 88 :       | 0.8        | 12784.2     | 47132.5     | 12.5             | 31.1             | 26.0                | 4.0               | 59          |             |             |
| FR-5S              | 1.0   8/3/92        | 945           | 30 : 25.0     | 87 :       | 56.9       | 12825.2     | 47132.2     | 3.4              | 12.2             | 29.4                | 7.2               | 100         |             |             |
| FR-5B              | 2.4   8/3/92        | 945           | 30 : 25.0     | 87 :       | 56.9       | 12825.2     | 47132.2     | 3.4              | 13.4             | 29.5                | 4.5               | 64          |             |             |
| WB-1S              | 1.0   8/3/92        | 847           | 30 : 22.6     | 88 :       | 4.5        | 12745.5     | 47120.2     | 3.6              | 8.8              | 29.0                | 6.8               | 93          |             |             |
| WB-3S              | 1.0   8/3/92        | 903           | 30 : 22.6     | 88 :       | 1.3        | 12777.6     | 47121.1     | 14.3             | 10.5             | 28.6                | 6.8               | 93          |             |             |
| WB-3B              | 13.3   8/3/92       | 903           | 30 : 22.6     | 88 :       | 1.3        | 12777.6     | 47121.1     | 14.3             | 34.3             | 24.8                | 4.2               | 62          |             |             |
| WB-5S              | 1.0   8/3/92        | 915           | 30 : 22.6     | 87 :       | 58.1       | 12810.5     | 47122.0     | 3.6              | 12.9             | 28.9                | 7.3               | 102         |             |             |
| WB-5B              | 2.6   8/3/92        | 915           | 30 : 22.6     | 87 :       | 58.1       | 12810.5     | 47122.0     | 3.6              | 14.8             | 29.0                | 6.3               | 88          |             |             |
| WB-7S              | 1.0   8/3/92        | 929           | 30 : 22.5     | 87 :       | 55.3       | 12840.4     | 47122.2     | 3.0              | 13.9             | 29.3                | 6.6               | 93          |             |             |
| CP-3S              | 1.0   8/3/92        | 824           | 30 : 18.3     | 88 :       | 1.9        | 12768.6     | 47103.2     | 14.0             | 13.2             | 28.7                | 6.9               | 96          |             |             |
| CP-3B              | 13.0   8/3/92       | 824           | 30 : 18.3     | 88 :       | 1.9        | 12768.6     | 47103.2     | 14.0             | 32.6             | 25.8                | 4.5               | 67          |             |             |
| FM-1S              | 1.0   8/3/92        | 724           | 30 : 15.7     | 88 :       | 3.6        | 12748.7     | 47092.1     | 4.8              | 16.6             | 28.3                | 6.5               | 91          |             |             |

## MOBILE BAY CRUISE MB-29

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LON<br>DEG : MIN | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|------------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3S              | 1.0                 | 8/3/92        | 738           | 30 : 15.5        | 88 : 2.3         | 2.3        | 12762.9          | 47091.5          | 13.7                | 15.3              | 28.6        | 6.6         | 93          |
| FM-3B              | 12.7                | 8/3/92        | 738           | 30 : 15.5        | 88 : 2.3         | 2.3        | 12762.9          | 47091.5          | 13.7                | 33.5              | 25.2        | 4.7         | 69          |
| FM-5S              | 1.0                 | 8/3/92        | 750           | 30 : 15.6        | 88 : 0.7         | 0.7        | 12778.8          | 47092.2          | 4.2                 | 15.0              | 28.6        | 6.8         | 96          |
| FM-5B              | 3.2                 | 8/3/92        | 750           | 30 : 15.6        | 88 : 0.7         | 0.7        | 12778.8          | 47092.2          | 4.2                 | 23.2              | 28.0        | 5.8         | 84          |
| FM-7S              | 1.0                 | 8/3/92        | 802           | 30 : 15.5        | 87 : 58.9        | 58.9       | 12797.9          | 47092.0          | 4.0                 | 16.2              | 28.8        | 6.9         | 98          |
| BS-1S              | 1.0                 | 8/4/92        | 1517          | 30 : 16.9        | 88 : 5.8         | 5.8        | 12727.3          | 47096.7          | 4.0                 | 12.4              | 28.8        | 8.8         | 122         |
| BS-3S              | 1.0                 | 8/4/92        | 1455          | 30 : 17.2        | 88 : 2.1         | 2.1        | 12765.4          | 47098.5          | 15.5                | 11.9              | 29.0        | 7.7         | 107         |
| BS-3B              | 14.5                | 8/4/92        | 1455          | 30 : 17.2        | 88 : 2.1         | 2.1        | 12765.4          | 47098.5          | 15.5                | 30.7              | 26.4        | 4.3         | 63          |
| BS-5S              | 1.0                 | 8/4/92        | 1434          | 30 : 16.9        | 87 : 58.3        | 58.3       | 12805.0          | 47098.0          | 3.5                 | 14.8              | 29.4        | 7.9         | 112         |
| BS-7S              | 1.0                 | 8/4/92        | 1411          | 30 : 16.7        | 87 : 54.9        | 54.9       | 12840.0          | 47098.1          | 3.9                 | 17.0              | 29.5        | 7.3         | 105         |
| BS-7B              | 2.9                 | 8/4/92        | 1411          | 30 : 16.7        | 87 : 54.9        | 54.9       | 12840.0          | 47098.1          | 3.9                 | 18.1              | 29.5        | 5.0         | 72          |
| BS-9S              | 1.0                 | 8/4/92        | 1351          | 30 : 16.7        | 87 : 51.1        | 51.1       | 12880.0          | 47098.7          | 3.5                 | 17.5              | 29.5        | 6.3         | 92          |
| BS-11S             | -1.0                | 8/4/92        | 1326          | 30 : 16.7        | 87 : 47.9        | 47.9       | 12912.7          | 47099.3          | 4.3                 | 18.1              | 29.7        | 6.1         | 88          |
| BS-11B             | 3.3                 | 8/4/92        | 1326          | 30 : 16.7        | 87 : 47.9        | 47.9       | 12912.7          | 47099.3          | 4.3                 | 18.1              | 29.7        | 5.9         | 86          |
| MT-1S              | 1.0                 | 8/4/92        | 1236          | 30 : 13.9        | 88 : 2.3         | 2.3        | 12761.7          | 47084.9          | 17.7                | 13.4              | 28.4        | 7.3         | 102         |
| MT-1B              | 16.7                | 8/4/92        | 1236          | 30 : 13.9        | 88 : 2.3         | 2.3        | 12761.7          | 47084.9          | 17.7                | 33.5              | 25.2        | 4.4         | 64          |
| MT-3S              | 1.0                 | 8/4/92        | 1213          | 30 : 11.6        | 88 : 2.7         | 2.7        | 12756.5          | 47074.8          | 15.5                | 14.5              | 28.5        | 7.4         | 103         |
| MT-3B              | 14.5                | 8/4/92        | 1213          | 30 : 11.6        | 88 : 2.7         | 2.7        | 12756.5          | 47074.8          | 15.5                | 34.2              | 24.9        | 4.1         | 61          |
| MT-5S              | 1.0                 | 8/4/92        | 1150          | 30 : 9.5         | 88 : 3.2         | 3.2        | 12749.6          | 47065.8          | 15.0                | 16.1              | 28.4        | 7.0         | 98          |
| MT-5B              | 14.0                | 8/4/92        | 1150          | 30 : 9.5         | 88 : 3.2         | 3.2        | 12749.6          | 47065.8          | 15.0                | 35.2              | 24.0        | 3.8         | 55          |
| MT-7S              | 1.0                 | 8/4/92        | 1125          | 30 : 7.3         | 88 : 4.2         | 4.2        | 12738.6          | 47055.8          | 18.9                | 23.0              | 27.9        | 6.6         | 96          |
| MT-7B              | 17.9                | 8/4/92        | 1125          | 30 : 7.3         | 88 : 4.2         | 4.2        | 12738.6          | 47055.8          | 18.9                | 35.6              | 23.7        | 4.1         | 60          |

## MOBILE BAY CRUISE MB-29

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 8.5 | 1301         | 1.28        | 4.60        | 0.70        | 12.65       | 50.94      | 476         | 13.90       | 0.00        | 96.14      | 13.03      | 0.97       |
| MR-1B              | 13.0                | 8.6 | -            | -           | 0.46        | 0.13        | 11.55       | 12.05      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 9.0 | -            | 0.71        | 0.45        | 0.10        | 2.51        | 53.23      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 8.5 | -            | 0.46        | 1.42        | 0.26        | 2.29        | 54.93      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 9.0 | 1078         | 0.49        | 0.46        | 0.10        | 1.77        | 49.71      | 407         | 14.53       | 0.30        | 104.47     | 14.31      | 1.00       |
| DR-3B              | 13.0                | 8.6 | -            | 1.01        | 0.48        | 0.18        | 4.34        | 11.91      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 9.0 | -            | 0.49        | 0.41        | 0.09        | 1.55        | 51.46      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.4                 | 8.8 | -            | 0.71        | 0.40        | 0.14        | 2.66        | 53.12      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 8.9 | -            | 0.60        | 0.38        | 0.11        | 1.93        | 52.67      | 394         | 13.57       | 0.33        | 85.48      | 11.07      | 0.81       |
| DR-7B              | 1.7                 | 8.9 | -            | 0.65        | 0.38        | 0.07        | 1.05        | 52.12      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 8.7 | -            | 0.22        | 0.45        | 0.10        | 1.97        | 53.32      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 8.8 | 1324         | 0.49        | 0.39        | 0.10        | 1.14        | 46.48      | 421         | 15.08       | 0.35        | 91.16      | 12.97      | 0.73       |
| PC-3B              | 13.6                | 8.7 | -            | 0.74        | 0.43        | 0.19        | 5.47        | 8.88       | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 9.0 | 1259         | 0.38        | 0.38        | 0.06        | 1.12        | 47.04      | 296         | 15.29       | 0.28        | 115.33     | 11.21      | 0.63       |
| PC-5B              | 2.4                 | 9.0 | -            | 0.49        | 0.42        | 0.06        | 1.19        | 48.60      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 9.0 | 1284         | 0.38        | 0.37        | 0.08        | 1.27        | 49.91      | 322         | 12.92       | 0.23        | 94.19      | 10.99      | 0.65       |
| FR-3B              | 11.5                | 8.7 | -            | 0.35        | 0.43        | 0.12        | 2.23        | 8.62       | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 9.1 | -            | 0.76        | 0.83        | 0.09        | 5.21        | 49.74      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.4                 | 9.1 | -            | 0.52        | 0.44        | 0.11        | 2.27        | 53.93      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | 8.9 | 1264         | 0.14        | 0.41        | 0.09        | 1.44        | 48.83      | 378         | 14.11       | 0.47        | 97.99      | 13.91      | 0.89       |
| WB-3S              | 1.0                 | 9.0 | 1329         | 0.22        | 0.35        | 0.08        | 1.40        | 47.07      | 341         | 12.53       | 0.39        | 102.55     | 11.45      | 0.60       |
| WB-3B              | 13.3                | 8.8 | -            | 0.49        | 0.45        | 0.16        | 2.75        | 3.81       | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | 9.1 | -            | 0.43        | 0.46        | 0.08        | 1.84        | 46.16      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.6                 | 8.6 | -            | 0.65        | 0.40        | 0.08        | 1.24        | 19.60      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | 8.9 | 1432         | 0.38        | 0.39        | 0.09        | 1.21        | 48.15      | 350         | 16.13       | 0.55        | 144.11     | 16.69      | 1.16       |
| CP-3S              | 1.0                 | 8.9 | 1408         | 0.22        | 0.39        | 0.07        | 1.01        | 44.67      | 343         | 15.55       | 0.71        | 51.73      | 6.25       | 0.61       |
| CP-3B              | 13.0                | 8.8 | -            | 0.33        | 0.38        | 0.12        | 1.63        | 5.95       | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 8.7 | -            | 0.22        | 0.40        | 0.10        | 1.22        | 37.31      | -           | -           | -           | -          | -          | -          |



## MOBILE BAY CRUISE MB-29

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | 8.8 | 1377         | 0.30        | 0.36        | 0.10        | 0.96        | 39.66      | 321         | 11.70       | 0.40        | 56.89      | 7.98       | 0.55       |
| FM-3B              | 12.7                | 8.7 | -            | 0.14        | 0.39        | 0.11        | 1.25        | 4.29       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.9 | -            | 0.11        | 0.38        | 0.06        | 1.07        | 41.38      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.2                 | 8.7 | -            | 0.30        | 0.37        | 0.09        | 0.86        | 19.90      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 9.0 | 1353         | 0.27        | 0.44        | 0.12        | 1.75        | 38.82      | 305         | 10.05       | 0.48        | 38.76      | 4.37       | 0.36       |
| BS-1S              | 1.0                 | 9.2 | -            | 0.41        | 0.67        | 0.10        | 4.73        | 39.81      | -           | -           | -           | -          | -          | -          |
| BS-3S              | 1.0                 | 9.2 | 1319         | 0.19        | 0.35        | 0.06        | 1.31        | 46.36      | 371         | 15.91       | 0.42        | 122.86     | 12.40      | 0.64       |
| BS-3B              | 14.5                | 8.8 | -            | 0.38        | 0.39        | 0.12        | 2.86        | 12.84      | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | 9.1 | -            | 0.44        | 0.42        | 0.06        | 1.00        | 45.08      | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | 9.0 | 1382         | 0.19        | 0.46        | 0.07        | 1.00        | 43.71      | 355         | 16.14       | 0.69        | 139.03     | 15.19      | 0.83       |
| BS-7B              | 2.9                 | 8.7 | -            | 0.82        | 0.46        | 0.18        | 2.14        | 46.97      | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | 8.8 | -            | 0.27        | 0.46        | 0.07        | 1.51        | 43.60      | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | 8.8 | 1503         | 0.74        | 1.98        | 0.10        | 3.16        | 44.90      | 389         | 20.44       | 0.32        | 199.14     | 23.00      | 2.53       |
| BS-11B             | 3.3                 | 8.7 | -            | 0.27        | 4.66        | 0.03        | 6.81        | 46.60      | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | 9.0 | -            | 0.14        | 0.46        | 0.12        | 0.74        | 42.66      | -           | -           | -           | -          | -          | -          |
| MT-1B              | 16.7                | 8.7 | -            | 0.35        | 1.56        | 0.16        | 2.64        | 5.77       | -           | -           | -           | -          | -          | -          |
| MT-3S              | 1.0                 | 9.0 | 1398         | 0.16        | 1.72        | 0.14        | 2.24        | 39.98      | 319         | 13.59       | 0.45        | 67.89      | 7.03       | 0.44       |
| MT-3B              | 14.5                | 8.7 | -            | 0.33        | 0.52        | 0.03        | 2.38        | 4.81       | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | 8.9 | -            | 0.63        | 2.56        | 0.09        | 3.35        | 36.31      | -           | -           | -           | -          | -          | -          |
| MT-5B              | 14.0                | 8.6 | -            | 0.49        | 0.94        | 0.21        | 6.55        | 6.32       | -           | -           | -           | -          | -          | -          |
| MT-7S              | 1.0                 | 8.7 | -            | 0.11        | 0.54        | 0.08        | 1.96        | 21.73      | -           | 11.55       | 0.55        | 56.40      | 6.93       | 0.51       |
| MT-7B              | 17.9                | 8.6 | -            | 0.74        | 0.30        | 0.46        | 3.93        | 9.30       | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-29

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 11.50                  | 2.02            | 1.44           | 45             | 1.818            | 1103.0            |
| MR-1B              | 13.0                | -                      | 2.54            | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 6.50                   | 1.64            | 1.44           | 80             | -                | -                 |
| DR-1S              | 1.0                 | 10.50                  | 1.46            | 1.86           | 70             | -                | -                 |
| DR-3S              | 1.0                 | 7.00                   | 1.84            | 1.62           | 85             | 0.727            | 624.0             |
| DR-3B              | 13.0                | -                      | 0.31            | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 8.00                   | 1.91            | 1.36           | 85             | -                | -                 |
| DR-5B              | 2.4                 | -                      | 3.96            | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 7.50                   | 3.72            | 1.41           | 80             | 0.408            | 460.0             |
| DR-7B              | 1.7                 | -                      | 2.61            | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 9.50                   | 4.27            | 1.37           | 100            | -                | -                 |
| PC-3S              | 1.0                 | 9.00                   | 5.21            | 1.25           | 95             | 0.854            | 898.0             |
| PC-3B              | 13.6                | -                      | 2.64            | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 9.50                   | 5.56            | 1.11           | 135            | 0.545            | 719.0             |
| PC-5B              | 2.4                 | -                      | 3.68            | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 7.20                   | 3.65            | 1.25           | 140            | 0.502            | 593.0             |
| FR-3B              | 11.5                | -                      | 3.13            | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 10.00                  | 7.41            | 1.52           | 105            | -                | -                 |
| FR-5B              | 2.4                 | -                      | 3.27            | -              | -              | -                | -                 |
| WB-1S              | 1.0                 | 9.00                   | 5.39            | 1.36           | 130            | 0.887            | 762.0             |
| WB-3S              | 1.0                 | 5.50                   | 3.61            | 1.25           | 165            | 0.581            | 619.0             |
| WB-3B              | 13.3                | -                      | 8.27            | -              | -              | -                | -                 |
| WB-5S              | 1.0                 | 12.00                  | 11.12           | 1.08           | 135            | -                | -                 |
| WB-5B              | 2.6                 | -                      | 9.11            | -              | -              | -                | -                 |
| WB-7S              | 1.0                 | 13.50                  | 7.99            | 1.37           | 90             | 1.500            | 1226.0            |
| CP-3S              | 1.0                 | 8.00                   | 2.57            | 1.37           | 145            | 0.879            | 523.0             |
| CP-3B              | 13.0                | -                      | 5.91            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 6.50                   | 1.51            | 1.33           | 135            | -                | -                 |

## MOBILE BAY CRUISE MB-29

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTE<br>(-/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m <sup>2</sup> /d |
|--------------------|---------------------|------------------------|---------------|----------------|------------------|--------------------------------|
| FM-3S              | 1.0                 | 5.50                   | 0.99          | 145            | 0.373            | 478.0                          |
| FM-3B              | 12.7                | -                      | 4.69          | -              | -                | -                              |
| FM-5S              | 1.0                 | 6.00                   | 0.87          | 210            | -                | -                              |
| FM-5B              | 3.2                 | -                      | 2.43          | -              | -                | -                              |
| FM-7S              | 1.0                 | 7.50                   | 1.37          | 260            | 0.283            | 240.0                          |
| BS-1S              | 1.0                 | 17.50                  | 9.50          | 75             | -                | -                              |
| BS-3S              | 1.0                 | 9.20                   | 4.17          | -              | 0.357            | 525.0                          |
| BS-3B              | 14.5                | -                      | 4.52          | -              | -                | -                              |
| BS-5S              | 1.0                 | 7.60                   | 4.17          | 125            | -                | -                              |
| BS-7S              | 1.0                 | 12.80                  | 7.88          | 70             | 0.587            | 552.0                          |
| BS-7B              | 2.9                 | -                      | 7.58          | -              | -                | -                              |
| BS-9S              | 1.0                 | 43.81                  | 9.38          | 50             | -                | -                              |
| BS-11S             | 1.0                 | 66.00                  | 9.56          | 50             | 0.809            | 237.0                          |
| BS-11B             | 3.3                 | -                      | 6.60          | -              | -                | -                              |
| MT-1S              | 1.0                 | 9.33                   | 2.32          | 175            | -                | -                              |
| MT-1B              | 16.7                | -                      | 3.82          | -              | -                | -                              |
| MT-3S              | 1.0                 | 6.50                   | 8.25          | 175            | 0.167            | 708.0                          |
| MT-3B              | 14.5                | -                      | 4.21          | -              | -                | -                              |
| MT-5S              | 1.0                 | 8.00                   | 1.07          | 175            | -                | -                              |
| MT-5B              | 14.0                | -                      | 6.60          | -              | -                | -                              |
| MT-7S              | 1.0                 | 8.40                   | 1.76          | 200            | 0.509            | 1155.0                         |
| MT-7B              | 17.9                | -                      | 2.75          | -              | -                | -                              |

## ***Mobile Bay Cruise Report***

***MB-30***

31 August, 1 September 1992

***Vessel:***

*R/V Deborah B.*

***Operation Area:***

- \* 31 August: Mobile Bay from Fort Morgan to Mobile River
- \* 1 September: Bay Mouth following ship channel from Farewell Buoy to Fort Morgan; Bon Secour Bay to Mississippi Sound following Intracoastal Waterway

***Scientific Party:***

Felix Fernandez (Chief Scientist)  
Stan Beasley  
Jean Cowan

***Supporting Agency:***

U.S. Geological Survey

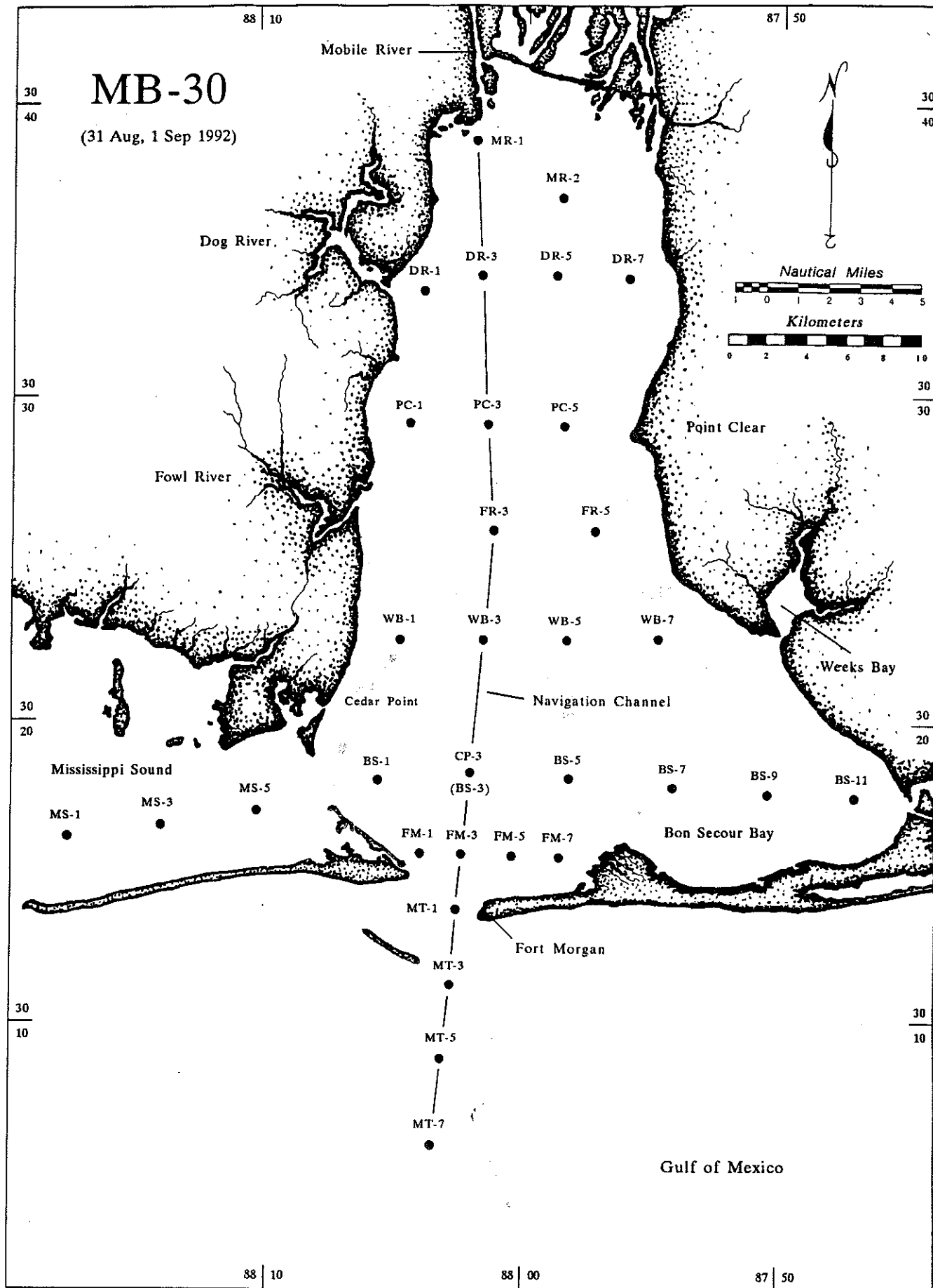
***Research Objectives:***

Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 33 surface stations (22 of those including bottom water casts). Samples were taken for  $\text{TCO}_2$ , DOC, DON, DOP, POP, PC/PN, taxonomy identification and  $^{14}\text{C}$  productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations. Surface sediment samples for PC/PN analysis were collected using a Shipek bottom sampler at selected Bay stations.

***Cruise Summary:***

31 August: Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0720. Stations were continued going upbay through station MR-1. Returned to DISL 1430.

1 September: Departed DISL 0700. Deadheaded to station MT-7. Began sampling 0740. Stations were continued going north to station MT-1, then from BS-11 west to BS-1. Returned to DISL 1300.



## MOBILE BAY CRUISE MB-30

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0   8/31/92       | 1257          | 30 : 38.0     | 88 :       | 1.9        | 12780.5     | 47180.1     | 14.6             | 2.1              | 29.5                | 7.1               | 94          |             |             |
| MR-1B              | 13.6   8/31/92      | 1257          | 30 : 38.0     | 88 :       | 1.9        | 12780.5     | 47180.1     | 14.6             | 26.4             | 28.0                | 3.5               | 51          |             |             |
| MR-2S              | 1.0   8/31/92       | 1235          | 30 : 36.2     | 87 :       | 58.5       | 12815.2     | 47174.8     | 3.4              | 0.7              | 28.9                | 6.7               | 87          |             |             |
| DR-1S              | 1.0   8/31/92       | 1132          | 30 : 32.6     | 88 :       | 3.9        | 12755.5     | 47159.2     | 2.4              | 7.1              | 28.0                | 6.6               | 87          |             |             |
| DR-3S              | 1.0   8/31/92       | 1149          | 30 : 33.9     | 88 :       | 1.7        | 12780.3     | 47165.0     | 14.0             | 3.7              | 28.1                | 7.7               | 101         |             |             |
| DR-3B              | 13.0   8/31/92      | 1149          | 30 : 33.9     | 88 :       | 1.7        | 12780.3     | 47165.0     | 14.0             | 27.9             | 27.8                | 3.5               | 53          |             |             |
| DR-5S              | 1.0   8/31/92       | 1205          | 30 : 34.1     | 87 :       | 58.5       | 12814.5     | 47167.1     | 3.4              | 3.5              | 27.9                | 8.0               | 105         |             |             |
| DR-5B              | 2.4   8/31/92       | 1205          | 30 : 34.1     | 87 :       | 58.5       | 12814.5     | 47167.1     | 3.4              | 9.9              | 27.9                | 5.1               | 69          |             |             |
| DR-7S              | 1.0   8/31/92       | 1218          | 30 : 34.4     | 87 :       | 56.0       | 12840.4     | 47169.2     | 2.7              | 5.0              | 28.8                | 8.0               | 107         |             |             |
| DR-7B              | 1.7   8/31/92       | 1218          | 30 : 34.4     | 87 :       | 56.0       | 12840.4     | 47169.2     | 2.7              | 12.6             | 28.0                | 4.7               | 65          |             |             |
| PC-1S              | 1.0   8/31/92       | 1112          | 30 : 29.1     | 88 :       | 3.9        | 12753.2     | 47145.7     | 3.0              | 7.8              | 27.4                | 7.6               | 101         |             |             |
| PC-3S              | 1.0   8/31/92       | 1058          | 30 : 28.5     | 88 :       | 1.1        | 12783.6     | 47144.8     | 15.2             | 5.8              | 27.2                | 8.1               | 105         |             |             |
| PC-3B              | 14.2   8/31/92      | 1058          | 30 : 28.5     | 88 :       | 1.1        | 12783.6     | 47144.8     | 15.2             | 28.0             | 27.6                | 3.8               | 57          |             |             |
| PC-5S              | 1.0   8/31/92       | 1041          | 30 : 28.4     | 87 :       | 58.0       | 12815.4     | 47145.3     | 3.6              | 8.5              | 26.8                | 7.9               | 103         |             |             |
| PC-5B              | 2.6   8/31/92       | 1041          | 30 : 28.4     | 87 :       | 58.0       | 12815.4     | 47145.3     | 3.6              | 19.2             | 27.5                | 3.4               | 48          |             |             |
| FR-3S              | 1.0   8/31/92       | 1019          | 30 : 25.3     | 88 :       | 0.9        | 12783.7     | 47132.2     | 14.0             | 8.3              | 27.0                | 7.8               | 103         |             |             |
| FR-3B              | 13.0   8/31/92      | 1019          | 30 : 25.3     | 88 :       | 0.9        | 12783.7     | 47132.2     | 14.0             | 28.9             | 27.6                | 4.6               | 69          |             |             |
| FR-5S              | 1.0   8/31/92       | 1001          | 30 : 25.1     | 87 :       | 58.9       | 12825.2     | 47132.3     | 3.4              | 8.5              | 27.0                | 9.1               | 119         |             |             |
| FR-5B              | 2.4   8/31/92       | 1001          | 30 : 25.1     | 87 :       | 58.9       | 12825.2     | 47132.3     | 3.4              | 15.3             | 27.3                | 6.3               | 87          |             |             |
| WB-1S              | 1.0   8/31/92       | 849           | 30 : 22.6     | 88 :       | 4.4        | 12745.0     | 47120.4     | 3.4              | 9.3              | 26.7                | 8.2               | 107         |             |             |
| WB-3S              | 1.0   8/31/92       | 910           | 30 : 22.7     | 88 :       | 1.3        | 12777.6     | 47121.4     | 13.7             | 13.4             | 26.5                | 7.7               | 104         |             |             |
| WB-3B              | 12.7   8/31/92      | 910           | 30 : 22.7     | 88 :       | 1.3        | 12777.6     | 47121.4     | 13.7             | 29.3             | 27.7                | 5.4               | 81          |             |             |
| WB-5S              | 1.0   8/31/92       | 927           | 30 : 22.6     | 87 :       | 58.1       | 12810.4     | 47122.2     | 3.6              | 10.7             | 26.3                | 8.1               | 107         |             |             |
| WB-5B              | 2.6   8/31/92       | 927           | 30 : 22.6     | 87 :       | 58.1       | 12810.4     | 47122.2     | 3.6              | 10.7             | 26.4                | 8.1               | 107         |             |             |
| WB-7S              | 1.0   8/31/92       | 943           | 30 : 22.5     | 87 :       | 55.2       | 12840.5     | 47122.3     | 3.0              | 11.1             | 26.5                | 8.9               | 118         |             |             |
| CP-3S              | 1.0   8/31/92       | 822           | 30 : 18.3     | 88 :       | 1.9        | 12768.2     | 47103.2     | 14.9             | 15.0             | 26.3                | 7.6               | 102         |             |             |
| CP-3B              | 13.9   8/31/92      | 822           | 30 : 18.3     | 88 :       | 1.9        | 12768.2     | 47103.2     | 14.9             | 30.1             | 27.8                | 5.4               | 84          |             |             |
| FM-1S              | 1.0   8/31/92       | 721           | 30 : 15.7     | 88 :       | 3.7        | 12748.5     | 47092.2     | 4.8              | 15.3             | 26.1                | 7.3               | 99          |             |             |

## MOBILE BAY CRUISE MB-30

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LON<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| FM-3S              | 1.0                 | 8/31/92       | 734           | 30 : 15.5        | 88 : 2.3         | 12762.6          | 47091.5          | 15.2                | 18.5              | 26.4        | 8.2         | 114         |
| FM-3B              | 14.2                | 8/31/92       | 734           | 30 : 15.5        | 88 : 2.3         | 12762.6          | 47091.5          | 15.2                | 28.9              | 27.7        | 5.9         | 88          |
| FM-5S              | 1.0                 | 8/31/92       | 747           | 30 : 15.6        | 88 : 0.8         | 12778.4          | 47092.1          | 4.2                 | 16.3              | 25.9        | 7.5         | 101         |
| FM-5B              | 3.2                 | 8/31/92       | 747           | 30 : 15.6        | 88 : 0.8         | 12778.4          | 47092.1          | 4.2                 | 23.1              | 27.1        | 7.5         | 107         |
| FM-7S              | 1.0                 | 8/31/92       | 800           | 30 : 15.5        | 87 : 58.9        | 12797.7          | 47092.2          | 4.0                 | 18.5              | 25.9        | 7.7         | 105         |
| MS-1S              | 1.0                 | 9/1/92        | 1155          | 30 : 15.3        | 88 : 18.4        | 12595.3          | 47087.7          | 4.0                 | 26.0              | 27.6        | 7.1         | 104         |
| MS-1B              | 3.0                 | 9/1/92        | 1155          | 30 : 15.3        | 88 : 18.4        | 12595.3          | 47087.7          | 4.0                 | 26.2              | 27.4        | 6.6         | 97          |
| MS-3S              | 1.0                 | 9/1/92        | 1139          | 30 : 15.5        | 88 : 14.4        | 12637.0          | 47089.4          | 4.2                 | 22.6              | 27.4        | 6.8         | 97          |
| MS-5S              | 1.0                 | 9/1/92        | 1122          | 30 : 16.1        | 88 : 10.3        | 12680.6          | 47092.7          | 3.4                 | 15.2              | 27.9        | 7.4         | 102         |
| MS-5B              | 2.4                 | 9/1/92        | 1122          | 30 : 16.1        | 88 : 10.3        | 12680.6          | 47092.7          | 3.4                 | 21.4              | 27.1        | 5.9         | 84          |
| BS-1S              | 1.0                 | 9/1/92        | 1100          | 30 : 16.9        | 88 : 5.8         | 12727.2          | 47096.7          | 4.0                 | 14.3              | 27.3        | 7.8         | 106         |
| BS-3S              | 1.0                 | 9/1/92        | 1042          | 30 : 17.1        | 88 : 2.1         | 12766.0          | 47098.3          | 14.6                | 13.9              | 27.3        | 7.5         | 103         |
| BS-3B              | 13.6                | 9/1/92        | 1042          | 30 : 17.1        | 88 : 2.1         | 12766.0          | 47098.3          | 14.6                | 29.3              | 28.0        | 6.3         | 95          |
| BS-5S              | 1.0                 | 9/1/92        | 1026          | 30 : 16.9        | 87 : 58.3        | 12805.0          | 47098.0          | 3.4                 | 14.0              | 27.0        | 7.5         | 105         |
| BS-7S              | 1.0                 | 9/1/92        | 913           | 30 : 16.7        | 87 : 54.9        | 12839.9          | 47098.1          | 4.0                 | 16.8              | 26.1        | 7.7         | 104         |
| BS-7B              | 3.0                 | 9/1/92        | 913           | 30 : 16.7        | 87 : 54.9        | 12839.9          | 47098.1          | 4.0                 | 19.9              | 26.6        | 6.6         | 92          |
| BS-9S              | 1.0                 | 9/1/92        | 931           | 30 : 16.7        | 87 : 51.4        | 12876.1          | 47098.9          | 2.7                 | 19.4              | 26.7        | 7.7         | 107         |
| BS-11S             | 1.0                 | 9/1/92        | 949           | 30 : 16.7        | 87 : 47.8        | 12913.4          | 47099.3          | 3.4                 | 20.0              | 27.1        | 7.9         | 111         |
| BS-11B             | 2.4                 | 9/1/92        | 949           | 30 : 16.7        | 87 : 47.8        | 12913.4          | 47099.3          | 3.4                 | 20.0              | 27.1        | 7.6         | 107         |
| MT-1S              | 1.0                 | 9/1/92        | 837           | 30 : 13.9        | 88 : 2.3         | 12761.8          | 47085.1          | 15.2                | 16.9              | 26.4        | 7.5         | 102         |
| MT-1B              | 14.2                | 9/1/92        | 837           | 30 : 13.9        | 88 : 2.3         | 12761.8          | 47085.1          | 15.2                | 28.3              | 27.8        | 6.1         | 91          |
| MT-3S              | 1.0                 | 9/1/92        | 817           | 30 : 11.6        | 88 : 2.6         | 12757.0          | 47074.8          | 15.5                | 18.9              | 26.4        | 7.6         | 105         |
| MT-3B              | 14.5                | 9/1/92        | 817           | 30 : 11.6        | 88 : 2.6         | 12757.0          | 47074.8          | 15.5                | 27.8              | 27.7        | 6.2         | 93          |
| MT-5S              | 1.0                 | 9/1/92        | 759           | 30 : 9.5         | 88 : 3.2         | 12750.4          | 47065.7          | 515.5               | 22.0              | 26.9        | 7.0         | 100         |
| MT-5B              | 15.0                | 9/1/92        | 759           | 30 : 9.5         | 88 : 3.2         | 12750.4          | 47065.7          | 515.5               | 30.6              | 27.4        | 4.9         | 73          |
| MT-7S              | 1.0                 | 9/1/92        | 741           | 30 : 7.4         | 88 : 4.1         | 12739.5          | 47056.2          | 17.3                | 28.5              | 27.1        | 7.1         | 105         |
| MT-7B              | 16.3                | 9/1/92        | 741           | 30 : 7.4         | 88 : 4.1         | 12739.5          | 47056.2          | 17.3                | 34.8              | 25.0        | 2.6         | 38          |

## MOBILE BAY CRUISE MB-30

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 7.6 | 1169         | 0.52        | 5.15        | 0.38        | 4.56        | 80.23      | 439         | 9.81        | 0.36        | 85.78      | 10.69      | 0.91       |
| MR-1B              | 13.6                | 7.9 | -            | 1.32        | 0.86        | 0.56        | 7.97        | 22.77      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 7.7 | -            | 0.80        | 4.94        | 0.29        | 3.16        | 83.74      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 7.7 | -            | 0.52        | 4.30        | 0.56        | 1.74        | 66.00      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 7.8 | 1127         | 0.26        | 2.06        | 0.27        | 1.75        | 72.59      | 406         | 8.53        | 0.35        | 85.33      | 12.08      | 0.96       |
| DR-3B              | 13.0                | 7.9 | -            | 1.09        | 5.93        | 0.51        | 10.12       | 17.95      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 7.9 | -            | 0.31        | 2.78        | 0.26        | 3.37        | 78.48      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.4                 | 7.6 | -            | 0.70        | 3.08        | 0.52        | 5.63        | 58.00      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 8.6 | 1173         | 0.08        | 0.36        | 0.15        | 2.66        | 73.56      | 391         | 10.16       | 0.49        | 93.04      | 13.53      | 1.03       |
| DR-7B              | 1.7                 | 8.0 | -            | 0.59        | 0.55        | 0.26        | 3.63        | 54.26      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 8.1 | -            | 0.21        | 0.28        | 0.19        | 2.40        | 53.29      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 8.3 | 1192         | 0.13        | 0.24        | 0.16        | 1.88        | 64.04      | 403         | 9.45        | 0.39        | 97.29      | 12.44      | 0.92       |
| PC-3B              | 14.2                | 8.0 | -            | 0.85        | 0.49        | 0.27        | 6.06        | 12.32      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 8.1 | 1272         | 0.52        | 0.24        | 0.18        | 1.91        | 57.43      | 418         | 9.89        | 0.76        | -          | -          | 1.05       |
| PC-5B              | 2.6                 | 7.6 | -            | 0.78        | 0.61        | 0.15        | 6.18        | 31.82      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 8.4 | 1234         | 0.26        | 0.31        | 0.14        | 1.84        | 53.86      | 383         | 6.39        | 0.35        | 58.25      | 7.64       | 0.56       |
| FR-3B              | 13.0                | 8.1 | -            | 0.57        | 0.48        | 0.23        | 4.81        | 9.09       | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 8.6 | -            | 0.28        | 0.94        | 0.11        | 4.09        | 57.31      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.4                 | 7.8 | -            | 0.62        | 0.27        | 0.11        | 1.42        | 44.13      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | 8.4 | 1251         | 0.26        | 0.59        | 0.12        | 1.50        | 49.48      | 412         | 8.92        | 0.53        | 72.73      | 9.96       | 0.76       |
| WB-3S              | 1.0                 | 8.3 | 1394         | 0.62        | 0.25        | 0.16        | 1.82        | 40.46      | 357         | 7.27        | 0.35        | 52.42      | 6.36       | 0.43       |
| WB-3B              | 12.7                | 8.1 | -            | 0.49        | 0.44        | 0.19        | 2.99        | 8.87       | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | 8.4 | -            | 0.47        | 0.36        | 0.14        | 1.55        | 46.69      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.6                 | 8.1 | -            | 0.49        | 0.29        | 0.14        | 1.82        | 48.04      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | 8.4 | -            | 0.52        | 0.26        | 0.15        | 1.82        | 46.70      | 407         | 10.54       | 0.81        | 131.30     | 15.09      | 0.78       |
| CP-3S              | 1.0                 | 8.3 | 1479         | 0.78        | 0.53        | 0.12        | 3.46        | 38.06      | 322         | -           | 0.41        | 34.10      | 4.21       | 0.31       |
| CP-3B              | 13.9                | 8.2 | -            | 0.28        | 0.84        | 0.23        | 3.58        | 5.94       | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 8.2 | -            | 0.83        | 0.22        | 0.15        | 1.62        | 35.49      | -           | -           | -           | -          | -          | -          |



## MOBILE BAY CRUISE MB-30

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| FM-3S              | 1.0                 | 8.3 | 1434         | 0.16        | 0.29        | 0.15        | 1.82        | 9.63       | 298         | 4.47        | 0.63        | 42.42      | 4.86       | 0.44       |
| FM-3B              | 14.2                | 8.2 | -            | 0.26        | 0.36        | 0.16        | 2.17        | 4.66       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.3 | -            | 0.59        | 0.36        | 0.17        | 2.89        | 24.25      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.2                 | 8.2 | -            | 0.21        | 0.22        | 0.14        | 1.80        | 8.93       | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 8.3 | 1589         | 0.21        | 0.33        | 0.16        | 2.21        | 12.13      | 318         | 5.25        | 0.45        | -          | -          | 0.52       |
| MS-1S              | 1.0                 | 8.1 | 1711         | 0.13        | 0.28        | 0.18        | 3.06        | 13.20      | 237         | 3.25        | 0.39        | 56.18      | 6.43       | 0.45       |
| MS-1B              | 3.0                 | 8.1 | -            | 0.16        | 0.20        | 0.15        | 1.07        | 13.09      | -           | -           | -           | -          | -          | -          |
| MS-3S              | 1.0                 | 8.1 | -            | 0.26        | 0.26        | 0.14        | 2.40        | 13.89      | -           | -           | -           | -          | -          | -          |
| MS-5S              | 1.0                 | 8.2 | 1469         | 0.39        | 0.46        | 0.11        | 1.94        | 33.35      | 303         | 6.83        | 0.49        | 57.62      | 7.45       | 0.64       |
| MS-5B              | 2.4                 | 8.0 | -            | 0.39        | 0.40        | 0.13        | 3.11        | 18.91      | -           | -           | -           | -          | -          | -          |
| BS-1S              | 1.0                 | 8.3 | -            | 0.47        | 0.43        | 0.12        | 5.30        | 28.10      | -           | -           | -           | -          | -          | -          |
| BS-3S              | 1.0                 | 8.3 | 1429         | 0.52        | 0.79        | 0.12        | 2.38        | 36.54      | 307         | 5.79        | 0.49        | 30.31      | 3.46       | 0.22       |
| BS-3B              | 13.6                | 8.1 | -            | 0.26        | 0.31        | 0.25        | 2.81        | 3.69       | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | 8.4 | -            | 0.31        | 0.43        | 0.14        | 4.56        | 33.67      | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | 8.2 | 1527         | 0.26        | 0.07        | 0.13        | 2.05        | 15.81      | 304         | 6.76        | 0.53        | 25.59      | 3.14       | 0.25       |
| BS-7B              | 3.0                 | 8.1 | -            | 0.23        | 0.28        | 0.17        | 2.46        | 8.22       | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | 8.2 | -            | 0.05        | 0.41        | 0.13        | 2.76        | 5.76       | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | 8.3 | 1569         | 0.00        | 0.40        | 0.20        | 1.79        | 2.78       | -           | 8.47        | 0.61        | 79.96      | 9.23       | 0.83       |
| BS-11B             | 2.4                 | 8.3 | -            | 0.08        | 0.23        | 0.15        | 1.43        | 2.99       | -           | -           | -           | -          | -          | -          |
| MT-1S              | 1.0                 | 8.3 | -            | 0.34        | 0.96        | 0.10        | 2.83        | 18.73      | -           | -           | -           | -          | -          | -          |
| MT-1B              | 14.2                | 8.1 | -            | 0.26        | 0.58        | 0.22        | 3.26        | 3.96       | -           | -           | -           | -          | -          | -          |
| MT-3S              | 1.0                 | 8.3 | 1598         | 0.26        | 0.24        | 0.13        | 1.77        | 8.21       | 334         | 6.54        | 0.49        | 34.51      | 4.11       | 0.25       |
| MT-3B              | 14.5                | 8.2 | -            | 0.26        | 0.74        | 0.26        | 3.02        | 3.80       | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | 8.2 | -            | 0.26        | 0.29        | 0.17        | 2.56        | 8.32       | -           | -           | -           | -          | -          | -          |
| MT-5B              | 15.0                | 8.1 | -            | 0.31        | 0.76        | 1.20        | 4.21        | 9.31       | -           | -           | -           | -          | -          | -          |
| MT-7S              | 1.0                 | 8.1 | 1832         | 0.05        | 0.42        | 0.16        | 1.85        | 6.96       | 186         | 3.31        | 0.38        | 27.88      | 2.88       | 0.20       |
| MT-7B              | 16.3                | 7.9 | -            | 0.65        | 3.20        | 1.55        | 2.75        | 14.35      | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-30

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 10.60                  | 2.43            | 1.05           | 50             | 0.168            | 219.0             |
| MR-1B              | 13.6                | -                      | 0.75            | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 10.08                  | 1.91            | 1.53           | 75             | -                | -                 |
| DR-1S              | 1.0                 | 10.48                  | 3.27            | 1.48           | 75             | -                | -                 |
| DR-3S              | 1.0                 | 5.28                   | 3.48            | 1.31           | 75             | 0.131            | 179.0             |
| DR-3B              | 13.0                | -                      | 1.12            | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 5.68                   | 3.30            | 1.38           | 75             | -                | -                 |
| DR-5B              | 2.4                 | -                      | -               | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 8.08                   | -               | 2.01           | 75             | 0.080            | 75.0              |
| DR-7B              | 1.7                 | -                      | 5.21            | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 25.28                  | 3.21            | 1.25           | 75             | -                | -                 |
| PC-3S              | 1.0                 | 10.48                  | 3.53            | 1.52           | 75             | 0.087            | 101.0             |
| PC-3B              | 14.2                | -                      | 1.58            | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 18.08                  | 7.23            | 1.53           | 100            | 1.354            | 1708.0            |
| PC-5B              | 2.6                 | -                      | 2.13            | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 8.08                   | 1.22            | 1.03           | 125            | 0.354            | 633.0             |
| FR-3B              | 13.0                | -                      | 1.40            | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 3.68                   | 2.81            | 1.10           | 125            | -                | -                 |
| FR-5B              | 2.4                 | -                      | 6.08            | -              | -              | -                | -                 |
| WB-1S              | 1.0                 | 5.68                   | 2.19            | 1.24           | 100            | 1.065            | 1118.0            |
| WB-3S              | 1.0                 | 6.48                   | 0.83            | 0.84           | 150            | 0.380            | 835.0             |
| WB-3B              | 12.7                | -                      | 2.57            | -              | -              | -                | -                 |
| WB-5S              | 1.0                 | 7.28                   | 0.78            | 0.82           | 150            | -                | -                 |
| WB-5B              | 2.6                 | -                      | 0.69            | -              | -              | -                | -                 |
| WB-7S              | 1.0                 | 9.68                   | 6.08            | 0.83           | 125            | 1.007            | 2272.0            |
| CP-3S              | 1.0                 | 3.82                   | 0.46            | 0.62           | 250            | 0.397            | 911.0             |
| CP-3B              | 13.9                | -                      | 2.00            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 5.60                   | 0.38            | 0.97           | 225            | -                | -                 |

## MOBILE BAY CRUISE MB-30

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| FM-3S              | 1.0                 | 6.27                   | 0.78            | 0.75           | 200            | 0.419            | 1107.0            |
| FM-3B              | 14.2                | -                      | 1.74            | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 6.55                   | 0.61            | 0.83           | 250            | -                | -                 |
| FM-5B              | 3.2                 | -                      | 1.42            | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 27.77                  | 0.83            | 1.02           | 175            | 0.513            | 1084.0            |
| MS-1S              | 1.0                 | 17.68                  | 1.32            | 0.77           | 150            | 0.388            | 1016.0            |
| MS-1B              | 3.0                 | -                      | 1.99            | -              | -              | -                | -                 |
| MS-3S              | 1.0                 | 15.80                  | 1.53            | 1.17           | 75             | -                | -                 |
| MS-5S              | 1.0                 | 11.55                  | 0.90            | 1.72           | 75             | 0.546            | 640.0             |
| MS-5B              | 2.4                 | -                      | 2.32            | -              | -              | -                | -                 |
| BS-1S              | 1.0                 | 7.05                   | 0.70            | 1.01           | 75             | -                | -                 |
| BS-3S              | 1.0                 | 2.64                   | 0.47            | 0.53           | 250            | 0.349            | 1015.0            |
| BS-3B              | 13.6                | -                      | 1.25            | -              | -              | -                | -                 |
| BS-5S              | 1.0                 | 3.24                   | 0.57            | 0.75           | 200            | -                | -                 |
| BS-7S              | 1.0                 | 2.05                   | 0.50            | 0.40           | 275            | 0.304            | 1024.0            |
| BS-7B              | 3.0                 | -                      | 1.15            | -              | -              | -                | -                 |
| BS-9S              | 1.0                 | 6.84                   | 1.32            | 0.74           | 150            | -                | -                 |
| BS-11S             | 1.0                 | 12.52                  | 1.98            | 0.99           | 100            | 0.809            | 1306.0            |
| BS-11B             | 2.4                 | -                      | 1.55            | -              | -              | -                | -                 |
| MT-1S              | 1.0                 | 2.69                   | 0.57            | 0.52           | 275            | -                | -                 |
| MT-1B              | 14.2                | -                      | 1.95            | -              | -              | -                | -                 |
| MT-3S              | 1.0                 | 4.07                   | 0.60            | 0.49           | 300            | 0.305            | 846.0             |
| MT-3B              | 14.5                | -                      | 1.63            | -              | -              | -                | -                 |
| MT-5S              | 1.0                 | 5.09                   | 0.73            | 0.66           | 215            | -                | -                 |
| MT-5B              | 15.0                | -                      | 1.95            | -              | -              | -                | -                 |
| MT-7S              | 1.0                 | 4.05                   | 0.22            | 0.48           | 325            | 0.121            | 464.0             |
| MT-7B              | 16.3                | -                      | 0.86            | -              | -              | -                | -                 |

## ***Mobile Bay Cruise Report***

***MB-31***

22 September 1992

***Vessel:*** *R/V Deborah B.*

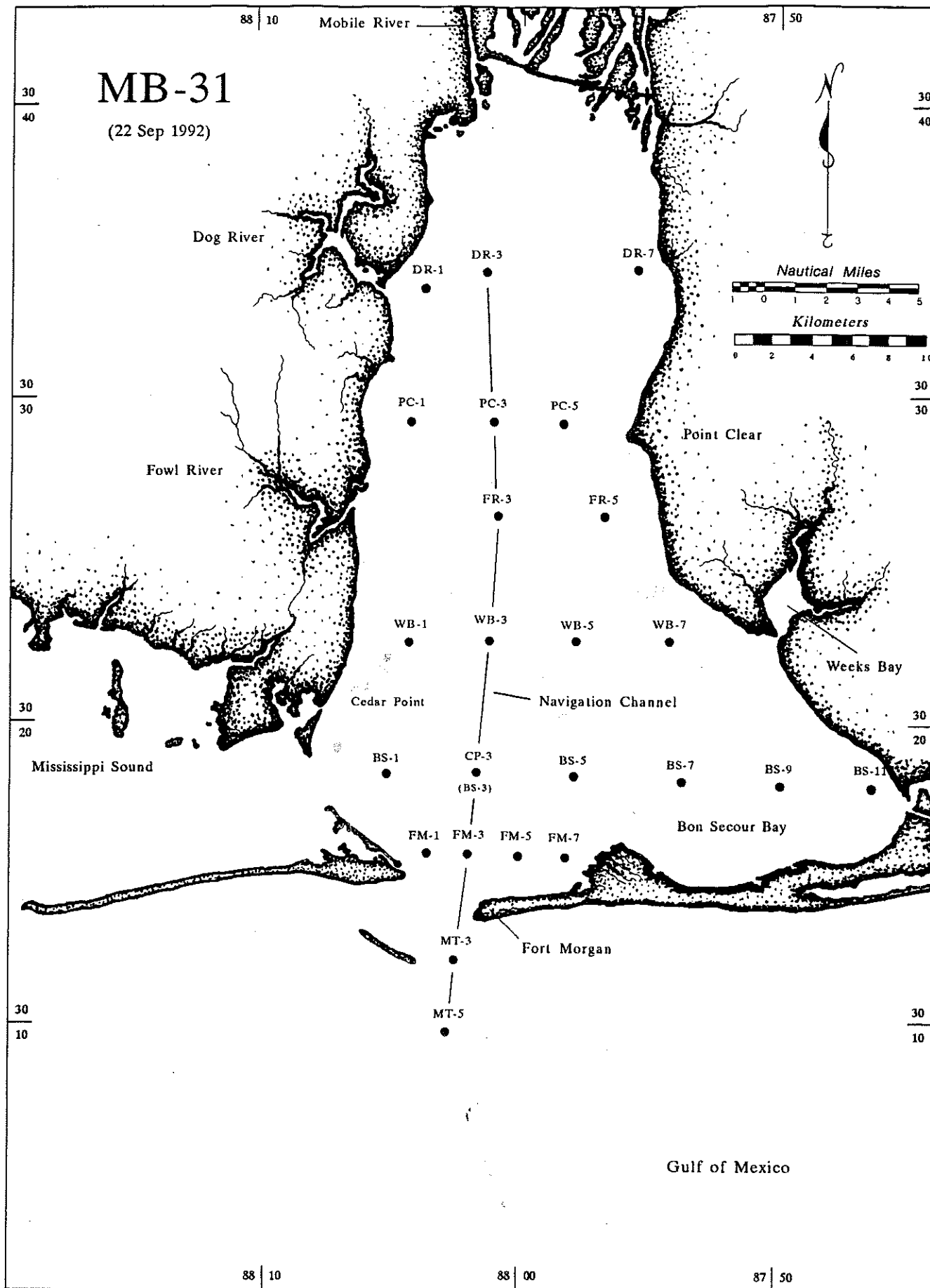
***Operation Area:*** Bay Mouth following ship channel from Lighthouse to Fort Morgan; Mobile Bay from Fort Morgan to Dog River transect

***Scientific Party:*** Felix Fernandez (Chief Scientist)  
Jean Cowan  
Skeet Lores  
Alan Wright

***Supporting Agency:*** U.S. Geological Survey

***Research Objectives:*** Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 24 surface stations (15 of those including bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations. Surface sediment samples for PC/PN analysis were collected using a Shipek bottom sampler at selected Bay stations.

***Cruise Summary:*** Departed DISL 0700. Deadheaded to station MT-5. Began sampling 0740. Stations were continued going north to Fort Morgan; then from FM-1 east to FM-7; then from BS-11 west to BS-1, and continuing north to DR-7. Cruise was terminated following sampling at station DR-7 due to severe thunderstorm activity. Returned to DISL 1630.



## MOBILE BAY CRUISE MB-31

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LONG<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|-------------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| DR-1S              | 1.0                 | 9/22/92       | 1425          | 30 : 32.6        | 88 : 3.9          | 12755.5          | 47159.3          | 2.7                 | 8.1               | 28.6        | 12.0        | 162         |
| DR-3S              | 1.0                 | 9/22/92       | 1440          | 30 : 34.1        | 88 : 1.7          | 12780.5          | 47165.8          | 14.9                | 8.2               | 28.4        | 9.2         | 123         |
| DR-3B              | 13.9                | 9/22/92       | 1440          | 30 : 34.1        | 88 : 1.7          | 12780.5          | 47165.8          | 14.9                | 26.0              | 27.4        | 4.0         | 58          |
| DR-7S              | 1.0                 | 9/22/92       | 1504          | 30 : 34.4        | 87 : 56.1         | 12840.2          | 47169.2          | 3.0                 | 6.6               | 28.0        | 9.3         | 124         |
| DR-7B              | 2.0                 | 9/22/92       | 1504          | 30 : 34.4        | 87 : 56.1         | 12840.2          | 47169.2          | 3.0                 | 6.2               | 28.0        | 8.7         | 115         |
| PC-1S              | 1.0                 | 9/22/92       | 1407          | 30 : 29.1        | 88 : 3.9          | 12753.1          | 47145.8          | 2.7                 | 9.5               | 28.5        | 10.3        | 140         |
| PC-3S              | 1.0                 | 9/22/92       | 1351          | 30 : 28.5        | 88 : 1.1          | 12783.3          | 47144.5          | 15.5                | 11.3              | 28.4        | 9.8         | 134         |
| PC-3B              | 14.5                | 9/22/92       | 1351          | 30 : 28.5        | 88 : 1.1          | 12783.3          | 47144.5          | 15.5                | 26.9              | 27.5        | 4.5         | 66          |
| PC-5S              | 1.0                 | 9/22/92       | 1332          | 30 : 28.5        | 87 : 58.1         | 12815.1          | 47145.5          | 3.6                 | 11.2              | 28.5        | 8.3         | 114         |
| PC-5B              | 2.6                 | 9/22/92       | 1332          | 30 : 28.5        | 87 : 58.1         | 12815.1          | 47145.5          | 3.6                 | 11.3              | 27.8        | 6.9         | 94          |
| FR-3S              | 1.0                 | 9/22/92       | 1310          | 30 : 25.3        | 88 : 0.9          | 12783.7          | 47132.0          | 14.9                | 14.2              | 28.2        | 9.2         | 127         |
| FR-3B              | 13.9                | 9/22/92       | 1310          | 30 : 25.3        | 88 : 0.9          | 12783.7          | 47132.0          | 14.9                | 27.1              | 27.6        | 5.2         | 77          |
| FR-5S              | 1.0                 | 9/22/92       | 1249          | 30 : 25.2        | 87 : 56.9         | 12825.1          | 47132.8          | 3.0                 | 12.6              | 28.1        | 8.5         | 117         |
| FR-5B              | 2.0                 | 9/22/92       | 1249          | 30 : 25.2        | 87 : 56.9         | 12825.1          | 47132.8          | 3.0                 | 12.7              | 28.0        | 7.9         | 108         |
| WB-1S              | 1.0                 | 9/22/92       | 1146          | 30 : 22.7        | 88 : 4.4          | 12745.1          | 47120.5          | 3.4                 | 13.2              | 28.7        | 9.0         | 125         |
| WB-3S              | 1.0                 | 9/22/92       | 1201          | 30 : 22.6        | 88 : 1.3          | 12777.3          | 47121.1          | 14.6                | 16.3              | 28.1        | 9.2         | 128         |
| WB-3B              | 13.6                | 9/22/92       | 1201          | 30 : 22.6        | 88 : 1.3          | 12777.3          | 47121.1          | 14.6                | 27.2              | 27.7        | 5.9         | 87          |
| WB-5S              | 1.0                 | 9/22/92       | 1217          | 30 : 22.7        | 87 : 58.1         | 12810.4          | 47122.4          | 4.0                 | 14.5              | 27.9        | 8.6         | 119         |
| WB-5B              | 3.0                 | 9/22/92       | 1217          | 30 : 22.7        | 87 : 58.1         | 12810.4          | 47122.4          | 4.0                 | 15.0              | 27.6        | 7.8         | 105         |
| WB-7S              | 1.0                 | 9/22/92       | 1231          | 30 : 22.6        | 87 : 55.3         | 12840.1          | 47122.9          | 3.0                 | 13.9              | 28.3        | 8.3         | 115         |
| BS-1S              | 1.0                 | 9/22/92       | 1117          | 30 : 16.9        | 88 : 5.8          | 12727.3          | 47096.6          | 4.2                 | 20.5              | 28.4        | 8.8         | 128         |
| CP-3S              | 1.0                 | 9/22/92       | 1057          | 30 : 17.1        | 88 : 2.1          | 12765.7          | 47098.4          | 14.9                | 19.7              | 28.0        | 8.5         | 122         |
| CP-3B              | 13.9                | 9/22/92       | 1057          | 30 : 17.1        | 88 : 2.1          | 12765.7          | 47098.4          | 14.9                | 28.5              | 27.8        | 7.0         | 105         |
| BS-5S              | 1.0                 | 9/22/92       | 1039          | 30 : 16.9        | 87 : 58.3         | 12804.5          | 47098.1          | 3.6                 | 22.3              | 27.7        | 8.4         | 121         |
| BS-7S              | 1.0                 | 9/22/92       | 1022          | 30 : 16.7        | 87 : 54.9         | 12839.7          | 47098.0          | 4.2                 | 17.7              | 27.8        | 8.5         | 119         |
| BS-7B              | 3.2                 | 9/22/92       | 1022          | 30 : 16.7        | 87 : 54.9         | 12839.7          | 47098.0          | 4.2                 | 19.8              | 27.6        | 6.5         | 92          |
| BS-9S              | 1.0                 | 9/22/92       | 1003          | 30 : 16.7        | 87 : 51.1         | 12879.8          | 47098.7          | 4.2                 | 17.3              | 27.9        | 8.5         | 120         |
| BS-11S             | 1.0                 | 9/22/92       | 946           | 30 : 16.7        | 87 : 47.8         | 12913.2          | 47099.3          | 4.2                 | 16.5              | 27.9        | 8.8         | 123         |

## MOBILE BAY CRUISE MB-31

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : | LAT<br>MIN | LON<br>DEG : | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|--------------|------------|--------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| BS-11B             | 3.2                 | 9/22/92       | 946           | 30 :         | 16.7       | 87 :         | 47.8       | 12913.2          | 47099.3          | 4.2                 | 16.5              | 27.8        | 7.8         | 109         |
| FM-1S              | 1.0                 | 9/22/92       | 825           | 30 :         | 15.8       | 88 :         | 3.7        | 12748.3          | 47092.4          | 5.2                 | 19.7              | 27.4        | 9.0         | 127         |
| FM-3S              | 1.0                 | 9/22/92       | 838           | 30 :         | 15.5       | 88 :         | 2.3        | 12762.6          | 47091.4          | 14.9                | 20.7              | 27.5        | 8.0         | 113         |
| FM-3B              | 13.9                | 9/22/92       | 838           | 30 :         | 15.5       | 88 :         | 2.3        | 12762.6          | 47091.4          | 14.9                | 28.6              | 27.7        | 7.2         | 107         |
| FM-5S              | 1.0                 | 9/22/92       | 848           | 30 :         | 15.6       | 88 :         | 0.7        | 12778.9          | 47092.2          | 4.6                 | 24.8              | 27.7        | 8.4         | 122         |
| FM-5B              | 3.6                 | 9/22/92       | 848           | 30 :         | 15.6       | 88 :         | 0.7        | 12778.9          | 47092.2          | 4.6                 | 26.4              | 27.8        | 7.8         | 116         |
| FM-7S              | 1.0                 | 9/22/92       | 901           | 30 :         | 15.5       | 87 :         | 58.9       | 12798.1          | 47091.9          | 4.2                 | 24.7              | 27.5        | 7.8         | 113         |
| MT-3S              | 1.0                 | 9/22/92       | 757           | 30 :         | 11.6       | 88 :         | 2.7        | 12757.8          | 47074.9          | 11.9                | 26.3              | 27.8        | 8.9         | 131         |
| MT-3B              | 10.9                | 9/22/92       | 757           | 30 :         | 11.6       | 88 :         | 2.7        | 12757.8          | 47074.9          | 11.9                | 30.4              | 27.6        | 6.0         | 90          |
| MT-5S              | 1.0                 | 9/22/92       | 739           | 30 :         | 9.5        | 88 :         | 3.1        | 12751.0          | 47065.8          | 12.5                | 27.5              | 27.8        | 8.4         | 125         |
| MT-5B              | 11.5                | 9/22/92       | 739           | 30 :         | 9.5        | 88 :         | 3.1        | 12751.0          | 47065.8          | 12.5                | 29.8              | 27.7        | 6.8         | 102         |

## MOBILE BAY CRUISE MB-31

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| DR-1S              | 1.0                 | 8.5 | -            | 0.16        | 0.37        | 0.04        | 4.92        | 62.13      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 8.0 | 1334         | 0.66        | 6.26        | 0.86        | 3.53        | 70.56      | 413         | 17.19       | 0.64        | 117.65     | 15.89      | 0.87       |
| DR-3B              | 13.9                | 8.0 | -            | -           | 0.38        | 0.44        | 10.74       | 17.00      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 8.3 | 1205         | 0.60        | 0.09        | 0.08        | 1.34        | 74.69      | 487         | 13.85       | 0.15        | 148.49     | 20.34      | 1.35       |
| DR-7B              | 2.0                 | 8.3 | -            | 0.36        | 0.15        | 0.10        | 2.23        | 76.69      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 8.5 | -            | 0.16        | 0.00        | 0.06        | 1.08        | 52.33      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 8.5 | 1325         | 0.19        | 0.12        | 0.06        | 1.26        | 48.75      | 358         | 16.62       | 0.36        | 126.63     | 16.43      | 0.92       |
| PC-3B              | 14.5                | 8.0 | -            | 0.62        | 1.27        | 0.55        | 12.61       | 17.18      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 8.1 | 1433         | 0.63        | 0.14        | 0.12        | 1.26        | 57.75      | 342         | 15.74       | 0.52        | 122.66     | 18.01      | 1.14       |
| PC-5B              | 2.6                 | 8.1 | -            | 0.79        | 0.22        | 0.14        | 3.50        | 48.63      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | 8.4 | 1455         | 0.33        | 0.06        | 0.06        | 1.46        | 40.66      | 331         | 9.47        | 0.17        | 96.15      | 12.84      | 0.66       |
| FR-3B              | 13.9                | 8.1 | -            | 0.55        | -           | -           | -           | 19.28      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 8.3 | -            | 0.63        | 0.15        | 0.08        | 1.65        | 47.01      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.0                 | 8.3 | -            | 0.44        | 0.07        | 0.10        | 1.11        | 47.42      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | 8.3 | 1471         | 0.16        | 0.00        | 0.07        | 0.95        | 40.16      | 330         | 11.99       | 0.39        | 165.56     | 19.50      | 1.04       |
| WB-3S              | 1.0                 | 8.4 | 1516         | 0.41        | 0.00        | 0.04        | 0.85        | 31.54      | 286         | 11.21       | 0.09        | 67.90      | 7.91       | 0.40       |
| WB-3B              | 13.6                | 8.1 | -            | 0.36        | 0.29        | 0.28        | 7.30        | 13.23      | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | 8.3 | -            | 0.33        | 0.09        | 0.15        | 1.79        | 36.82      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 3.0                 | 8.3 | -            | 0.36        | 0.14        | 0.19        | 2.48        | 37.04      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | 8.3 | 1480         | 0.47        | 0.00        | 0.07        | 0.63        | 45.69      | 317         | 14.59       | 0.53        | 106.00     | 15.06      | 0.87       |
| BS-1S              | 1.0                 | 8.3 | -            | 0.25        | 0.07        | 0.06        | 1.09        | 11.45      | -           | -           | -           | -          | -          | -          |
| CP-3S              | 1.0                 | 8.3 | 1520         | 0.19        | 0.00        | 0.08        | 1.00        | 21.50      | 300         | 9.16        | 0.36        | 47.63      | 6.21       | 0.47       |
| CP-3B              | 13.9                | 8.2 | -            | 0.14        | 0.14        | 0.17        | 2.34        | 6.92       | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | 8.2 | -            | 0.33        | 0.15        | 0.12        | 1.43        | 21.67      | -           | -           | -           | -          | -          | -          |
| BS-7S              | 1.0                 | 8.4 | 1480         | 0.36        | 0.00        | 0.03        | 0.97        | 37.97      | 282         | 12.35       | 0.39        | 73.42      | 8.91       | 0.47       |
| BS-7B              | 3.2                 | 8.2 | -            | 0.49        | 0.10        | 0.03        | 4.12        | 27.21      | -           | -           | -           | -          | -          | -          |
| BS-9S              | 1.0                 | 8.4 | -            | 0.41        | 0.03        | 0.11        | 1.95        | 44.12      | -           | -           | -           | -          | -          | -          |
| BS-11S             | 1.0                 | 8.2 | 1497         | 0.19        | 0.02        | 0.02        | 1.17        | 45.47      | -           | 17.65       | 1.16        | 135.67     | 19.80      | 1.28       |



## MOBILE BAY CRUISE MB-31

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| BS-11B             | 3.2                 | 8.2 | -            | 0.30        | 0.11        | 0.04        | 2.17        | 49.28      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 8.3 | -            | 0.16        | 0.00        | 0.05        | 1.04        | 23.38      | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | 8.3 | 1567         | 0.19        | 0.08        | 0.03        | 1.25        | 18.22      | 250         | 12.69       | 0.46        | 48.36      | 6.85       | 0.41       |
| FM-3B              | 13.9                | 8.3 | -            | 0.11        | 0.29        | 0.14        | 1.56        | 5.70       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.3 | -            | 0.08        | 0.04        | 0.10        | 0.89        | 6.35       | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.6                 | 8.3 | -            | 0.14        | 0.00        | 0.15        | 1.10        | 7.67       | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 8.3 | 1703         | 0.16        | 0.00        | 0.15        | 1.29        | 12.06      | 219         | 11.65       | 0.34        | 45.99      | 6.28       | 0.49       |
| MT-3S              | 1.0                 | 8.3 | 1727         | 0.03        | 0.00        | 0.12        | 0.97        | 7.37       | 205         | 10.11       | 0.37        | 38.36      | 4.98       | 0.23       |
| MT-3B              | 10.9                | 8.3 | -            | 0.36        | 0.08        | 0.68        | 4.76        | 8.14       | -           | -           | -           | -          | -          | -          |
| MT-5S              | 1.0                 | 8.3 | -            | 0.00        | 0.00        | 0.10        | 1.51        | 4.90       | -           | -           | -           | -          | -          | -          |
| MT-5B              | 11.5                | 8.2 | -            | 0.25        | 0.04        | 0.39        | 2.70        | 6.63       | -           | -           | -           | -          | -          | -          |

## MOBILE BAY CRUISE MB-31

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|----------------|----------------|------------------|-------------------|
| DR-1S              | 1.0                 | 12.12                  | 6.02           | -              | 100              | -                 |
| DR-3S              | 1.0                 | 10.92                  | 4.52           | 0.38           | 75               | 1.300             |
| DR-3B              | 13.9                | -                      | 0.88           | -              | -                | -                 |
| DR-7S              | 1.0                 | 20.92                  | 3.67           | -              | 30               | 1.331             |
| DR-7B              | 2.0                 | -                      | 3.72           | -              | -                | -                 |
| PC-1S              | 1.0                 | 9.72                   | 3.94           | 0.41           | 75               | -                 |
| PC-3S              | 1.0                 | 10.12                  | 2.98           | -              | 75               | 0.775             |
| PC-3B              | 14.5                | -                      | 1.31           | -              | -                | -                 |
| PC-5S              | 1.0                 | 21.32                  | 3.32           | 2.07           | 25               | 1.124             |
| PC-5B              | 2.6                 | -                      | 0.75           | -              | -                | -                 |
| FR-3S              | 1.0                 | 8.92                   | 7.65           | 1.02           | 75               | 0.521             |
| FR-3B              | 13.9                | -                      | 2.17           | -              | -                | -                 |
| FR-5S              | 1.0                 | 22.52                  | 15.10          | 2.11           | 50               | -                 |
| FR-5B              | 2.0                 | -                      | 1.77           | -              | -                | -                 |
| WB-1S              | 1.0                 | 12.52                  | 4.40           | 1.41           | 62               | 0.947             |
| WB-3S              | 1.0                 | 5.86                   | 1.39           | 0.74           | 150              | 0.507             |
| WB-3B              | 13.6                | -                      | 1.06           | -              | -                | -                 |
| WB-5S              | 1.0                 | 10.32                  | 3.13           | 1.07           | 75               | -                 |
| WB-5B              | 3.0                 | -                      | 2.65           | -              | -                | -                 |
| WB-7S              | 1.0                 | 16.84                  | 2.23           | 1.44           | 50               | 0.664             |
| BS-1S              | 1.0                 | 12.32                  | 2.07           | 1.18           | 75               | -                 |
| CP-3S              | 1.0                 | 8.33                   | 1.34           | 0.73           | 175              | 0.429             |
| CP-3B              | 13.9                | -                      | 1.00           | -              | -                | -                 |
| BS-5S              | 1.0                 | 8.83                   | 2.55           | 0.99           | 150              | -                 |
| BS-7S              | 1.0                 | 8.83                   | 1.91           | 1.03           | 175              | 0.518             |
| BS-7B              | 3.2                 | -                      | 4.78           | -              | -                | -                 |
| BS-9S              | 1.0                 | 7.06                   | 1.97           | 1.08           | 125              | -                 |
| BS-11S             | 1.0                 | 17.80                  | 4.17           | 1.48           | 38               | 1.546             |
|                    |                     |                        |                |                |                  | 1021.0            |

## MOBILE BAY CRUISE MB-31

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | SESTON CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC//d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|------------------------|----------------|----------------|-----------------|-------------------|
| BS-11B             | 3.2                 | -                      | 1.51                   | -              | -              | -               | -                 |
| FM-1S              | 1.0                 | 4.55                   | 0.32                   | 0.75           | 200            | -               | -                 |
| FM-3S              | 1.0                 | 8.44                   | 1.22                   | 0.66           | 150            | 0.485           | 857.0             |
| FM-3B              | 13.9                | -                      | 0.86                   | -              | -              | -               | -                 |
| FM-5S              | 1.0                 | 6.26                   | 1.39                   | 0.62           | 225            | -               | -                 |
| FM-5B              | 3.6                 | -                      | 1.04                   | -              | -              | -               | -                 |
| FM-7S              | 1.0                 | 10.07                  | 1.13                   | -              | 150            | 0.432           | 509.0             |
| MT-3S              | 1.0                 | 8.83                   | 0.71                   | 0.63           | 175            | 0.336           | 632.0             |
| MT-3B              | 10.9                | -                      | 1.39                   | -              | -              | -               | -                 |
| MT-5S              | 1.0                 | 3.11                   | 0.15                   | 0.38           | 350            | -               | -                 |
| MT-5B              | 11.5                | -                      | 0.67                   | -              | -              | -               | -                 |

## ***Mobile Bay Cruise Report***

***MB-32***

21 October 1992

***Vessel:*** *R/V Deborah B.*

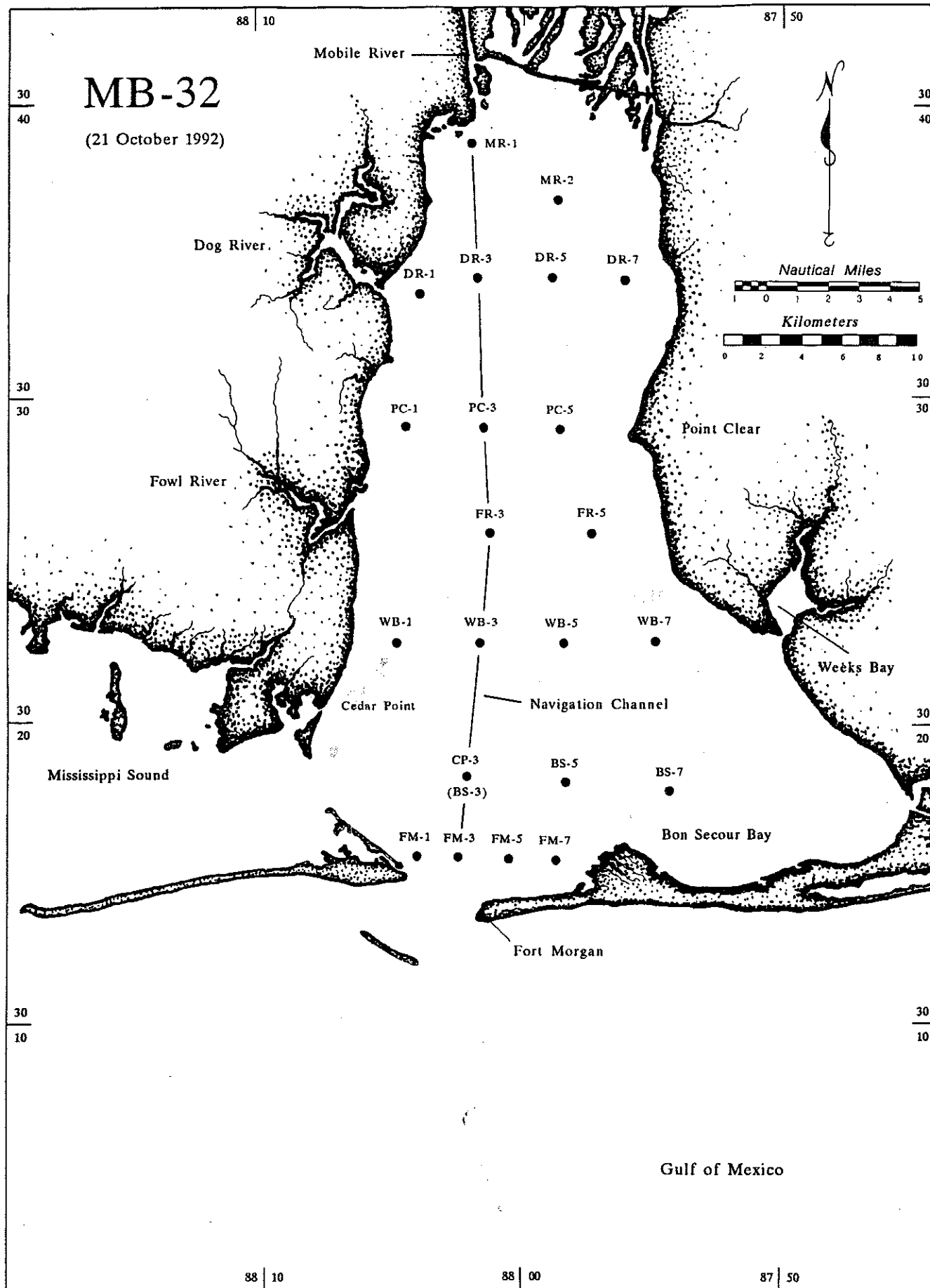
***Operation Area:*** Mobile Bay from Fort Morgan to Mobile River

***Scientific Party:*** Felix Fernandez (Chief Scientist)  
Stan Beasley  
Alma Robichaux

***Supporting Agency:*** U.S. Geological Survey

***Research Objectives:*** Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 22 surface stations (14 of those including bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations. Surface sediment samples for PC/PN analysis were collected using a Shipek bottom sampler at selected Bay stations.

***Cruise Summary:*** Departed DISL 0700. Deadheaded to station FM-1. Began sampling 0710. Stations were continued going upbay through MR-1. Bottom depths were obtained from SBE-25 data due to malfunction of the ship's fathometer. Returned to DISL 1500.



## MOBILE BAY CRUISE MB-32

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 10/21/92      | 1328          | 30         | 37.9       | 88          | 1.9         | 12780.4          | 47179.9          | 14.6                | 7.6               | 22.8        | 7.4         | 89          |
| MR-1B              | 13.6                | 10/21/92      | 1328          | 30         | 37.9       | 88          | 1.9         | 12780.4          | 47179.9          | 14.6                | 28.7              | 22.3        | 5.4         | 74          |
| MR-2S              | 1.0                 | 10/21/92      | 1305          | 30         | 36.3       | 87          | 58.5        | 12815.5          | 47175.1          | 3.4                 | 10.4              | 20.4        | 8.6         | 101         |
| DR-1S              | 1.0                 | 10/21/92      | 1205          | 30         | 32.6       | 88          | 4.0         | 12755.1          | 47159.1          | 2.7                 | 11.9              | 20.5        | 8.5         | 101         |
| DR-3S              | 1.0                 | 10/21/92      | 1220          | 30         | 33.9       | 88          | 1.7         | 12780.5          | 47165.1          | 15.8                | 11.4              | 21.7        | 8.6         | 104         |
| DR-3B              | 14.8                | 10/21/92      | 1220          | 30         | 33.9       | 88          | 1.7         | 12780.5          | 47165.1          | 15.8                | 29.5              | 21.7        | 6.1         | 82          |
| DR-5S              | 1.0                 | 10/21/92      | 1236          | 30         | 34.2       | 87          | 58.5        | 12814.4          | 47167.6          | 3.4                 | 13.0              | 20.5        | 8.3         | 99          |
| DR-5B              | 2.4                 | 10/21/92      | 1236          | 30         | 34.2       | 87          | 58.5        | 12814.4          | 47167.6          | 3.4                 | 14.9              | 20.6        | 6.8         | 83          |
| DR-7S              | 1.0                 | 10/21/92      | 1248          | 30         | 34.4       | 87          | 56.1        | 12840.2          | 47169.3          | 2.7                 | 14.8              | 20.5        | 7.8         | 95          |
| DR-7B              | 1.7                 | 10/21/92      | 1248          | 30         | 34.4       | 87          | 56.1        | 12840.2          | 47169.3          | 2.7                 | 15.3              | 20.2        | 7.6         | 92          |
| PC-1S              | 1.0                 | 10/21/92      | 1146          | 30         | 29.1       | 88          | 3.9         | 12753.5          | 47145.9          | 2.4                 | 14.0              | 20.2        | 7.9         | 95          |
| PC-3S              | 1.0                 | 10/21/92      | 1131          | 30         | 28.4       | 88          | 1.0         | 12783.8          | 47144.1          | 14.9                | 14.7              | 20.2        | 8.0         | 96          |
| PC-3B              | 13.9                | 10/21/92      | 1131          | 30         | 28.4       | 88          | 1.0         | 12783.8          | 47144.1          | 14.9                | 30.4              | 21.6        | 6.3         | 85          |
| PC-5S              | 1.0                 | 10/21/92      | 1115          | 30         | 28.4       | 87          | 58.0        | 12815.2          | 47145.4          | 3.4                 | 17.6              | 20.7        | 7.6         | 94          |
| PC-5B              | 2.4                 | 10/21/92      | 1115          | 30         | 28.4       | 87          | 58.0        | 12815.2          | 47145.4          | 3.4                 | 18.3              | 20.4        | 6.9         | 85          |
| FR-3S              | 14.0                | 10/21/92      | 1052          | 30         | 25.4       | 88          | 0.8         | 12784.3          | 47132.6          | 6.4                 | 16.4              | 20.3        | 7.4         | 90          |
| FR-3B              | 5.4                 | 10/21/92      | 1052          | 30         | 25.4       | 88          | 0.8         | 12784.3          | 47132.6          | 6.4                 | 30.4              | 21.7        | 6.4         | 87          |
| FR-5S              | 1.0                 | 10/21/92      | 1035          | 30         | 25.1       | 87          | 56.9        | 12825.1          | 47132.5          | 3.4                 | 18.6              | 20.0        | 7.1         | 87          |
| FR-5B              | 2.4                 | 10/21/92      | 1035          | 30         | 25.1       | 87          | 56.9        | 12825.1          | 47132.5          | 3.4                 | 18.6              | 19.9        | 7.2         | 88          |
| WB-1S              | 1.0                 | 10/21/92      | 930           | 30         | 22.6       | 88          | 4.4         | 12745.5          | 47120.2          | 3.4                 | 20.3              | 20.2        | 7.3         | 90          |
| WB-3S              | 1.0                 | 10/21/92      | 945           | 30         | 22.6       | 88          | 1.2         | 12778.2          | 47121.1          | 15.2                | 21.4              | 20.0        | 7.0         | 88          |
| WB-3B              | 14.2                | 10/21/92      | 945           | 30         | 22.6       | 88          | 1.2         | 12778.2          | 47121.1          | 15.2                | 30.5              | 21.6        | 6.8         | 92          |
| WB-5S              | 1.0                 | 10/21/92      | 1003          | 30         | 22.7       | 87          | 58.1        | 12810.6          | 47122.4          | 3.4                 | 19.3              | 19.9        | 6.9         | 85          |
| WB-5B              | 2.4                 | 10/21/92      | 1003          | 30         | 22.7       | 87          | 58.1        | 12810.6          | 47122.4          | 3.4                 | 20.1              | 20.0        | 6.5         | 81          |
| WB-7S              | 1.0                 | 10/21/92      | 1019          | 30         | 22.6       | 87          | 55.3        | 12840.3          | 47122.7          | 3.0                 | 20.4              | 19.9        | 7.2         | 89          |
| CP-3S              | 1.0                 | 10/21/92      | 901           | 30         | 18.3       | 88          | 1.8         | 12769.1          | 47103.3          | 14.3                | 25.8              | 20.1        | 7.2         | 92          |
| CP-3B              | 13.3                | 10/21/92      | 901           | 30         | 18.3       | 88          | 1.8         | 12769.1          | 47103.3          | 14.3                | 30.4              | 21.3        | 6.9         | 93          |
| BS-5S              | 1.0                 | 10/21/92      | 843           | 30         | 16.9       | 87          | 58.3        | 12805.0          | 47098.0          | 3.6                 | 24.1              | 19.8        | 7.3         | 92          |

## MOBILE BAY CRUISE MB-32

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LON<br>DEG | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| BS-7S              | 1.0                 | 10/21/92      | 825           | 30         | 16.7       | 87         | 54.9       | 12840.3          | 47098.1          | 3.4                 | 22.4              | 19.5        | 7.3         | 91          |
| BS-7B              | 2.4                 | 10/21/92      | 825           | 30         | 16.7       | 87         | 54.9       | 12840.3          | 47098.1          | 3.4                 | 24.7              | 20.0        | 6.9         | 88          |
| FM-1S              | 1.0                 | 10/21/92      | 706           | 30         | 15.7       | 88         | 3.7        | 12748.2          | 47092.1          | 4.8                 | 28.6              | 20.8        | 7.1         | 93          |
| FM-3S              | 1.0                 | 10/21/92      | 738           | 30         | 15.5       | 88         | 2.3        | 12762.9          | 47091.6          | 14.9                | 31.3              | 21.5        | 6.4         | 87          |
| FM-3B              | 13.9                | 10/21/92      | 738           | 30         | 15.5       | 88         | 2.3        | 12762.9          | 47091.6          | 14.9                | 31.4              | 21.8        | 6.8         | 93          |
| FM-5S              | 1.0                 | 10/21/92      | 749           | 30         | 15.6       | 88         | 0.8        | 12778.6          | 47092.1          | 4.6                 | 30.2              | 21.0        | 6.7         | 89          |
| FM-5B              | 3.6                 | 10/21/92      | 749           | 30         | 15.6       | 88         | 0.8        | 12778.6          | 47092.1          | 4.6                 | 30.4              | 21.0        | 6.7         | 90          |
| FM-7S              | 1.0                 | 10/21/92      | 803           | 30         | 15.5       | 87         | 58.9       | 12797.6          | 47092.1          | 4.0                 | 26.6              | 20.3        | 7.1         | 91          |

## MOBILE BAY CRUISE MB-32

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | 8.0 | 1387         | 0.56        | 3.56        | 0.26        | 4.70        | 44.94      | 324         | 17.93       | 0.24        | 29.10      | 3.96       | 0.13       |
| MR-1B              | 13.6                | 8.0 | -            | 0.48        | 0.30        | 0.17        | 7.03        | 8.67       | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | 8.3 | -            | 0.22        | 0.92        | 0.07        | 1.41        | 35.62      | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | 8.1 | -            | 0.48        | 2.55        | 0.29        | 0.58        | 43.20      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | 8.3 | 1472         | 0.22        | 0.36        | 0.16        | 0.97        | 40.42      | 300         | 12.14       | 0.28        | 45.68      | 6.78       | 0.21       |
| DR-3B              | 14.8                | 8.1 | -            | 0.28        | 0.18        | 0.09        | 2.29        | 7.31       | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | 8.3 | -            | 0.43        | 2.46        | 0.07        | 1.19        | 21.56      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.4                 | 8.3 | -            | 0.30        | 0.48        | 0.09        | 1.22        | 31.41      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | 8.2 | 1569         | 0.12        | 0.00        | 0.05        | 1.91        | 18.25      | 302         | 12.66       | 0.73        | 42.26      | 6.01       | 0.22       |
| DR-7B              | 1.7                 | 8.2 | -            | 0.61        | 1.99        | 0.08        | 2.96        | 13.80      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | 8.2 | -            | 0.33        | 0.60        | 0.03        | 0.24        | 25.27      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | 8.2 | 1551         | 0.22        | 0.18        | 0.03        | 0.45        | 29.46      | 281         | 12.05       | 0.38        | 43.19      | 6.23       | 0.19       |
| PC-3B              | 13.9                | 8.1 | -            | 0.33        | 0.16        | 0.11        | 2.45        | 4.40       | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | 8.2 | 1667         | 0.22        | 0.18        | 0.03        | 0.50        | 11.18      | 251         | 12.32       | 0.43        | 52.23      | 7.83       | 0.28       |
| PC-5B              | 2.4                 | 8.2 | -            | 0.22        | 0.17        | 0.07        | 3.64        | 10.74      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 14.0                | 8.2 | 1630         | 0.22        | 0.08        | 0.03        | 0.99        | 18.59      | 265         | 10.74       | 0.38        | 58.99      | 7.77       | 0.24       |
| FR-3B              | 5.4                 | 8.2 | -            | 0.17        | 0.15        | 0.06        | 0.95        | 3.29       | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | 8.1 | -            | 0.38        | 0.15        | 0.06        | 1.24        | 5.43       | 251         | 10.11       | 0.32        | 57.08      | 8.26       | 0.37       |
| FR-5B              | 2.4                 | 8.1 | -            | 0.33        | 0.06        | 0.05        | 1.00        | 3.53       | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | 8.1 | 1724         | 0.33        | 0.16        | 0.05        | 0.87        | 5.83       | 271         | 10.76       | 0.42        | 62.70      | 8.17       | 0.41       |
| WB-3S              | 1.0                 | 8.2 | 1785         | 0.33        | 0.14        | 0.07        | 0.43        | 4.68       | 259         | 9.90        | 0.32        | 58.03      | 8.17       | 0.31       |
| WB-3B              | 14.2                | 8.2 | -            | 0.22        | 0.24        | 0.08        | 1.18        | 3.45       | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | 8.2 | -            | 0.69        | 2.22        | 0.06        | 0.50        | 7.30       | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.4                 | 8.2 | -            | 0.30        | 0.14        | 0.07        | 0.79        | 9.90       | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | 8.2 | 1747         | 0.30        | 0.19        | 0.02        | 0.37        | 3.43       | 233         | 11.84       | 0.45        | 42.77      | 5.67       | 0.31       |
| CP-3S              | 1.0                 | 8.2 | 1918         | 0.22        | 0.10        | 0.11        | 1.45        | 1.57       | 200         | 8.53        | 0.28        | 40.78      | 6.29       | 0.21       |
| CP-3B              | 13.3                | 8.2 | -            | 0.07        | 0.10        | 0.11        | 1.16        | 4.22       | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | 8.1 | -            | 0.22        | 0.17        | 0.04        | 0.72        | 2.53       | -           | -           | -           | -          | -          | -          |



## MOBILE BAY CRUISE MB-32

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH  | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|-----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| BS-7S              | 1.0                 | 8.1 | 1856         | 0.30        | 0.05        | 0.06        | 0.50        | 3.63       | 234         | 11.30       | 0.45        | 44.42      | 6.56       | 0.30       |
| BS-7B              | 2.4                 | 8.1 | -            | 0.22        | 0.15        | 0.06        | 0.86        | 2.65       | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | 8.0 | -            | 0.25        | 0.22        | 0.20        | 0.85        | 5.32       | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | 8.2 | 2101         | 0.07        | 0.20        | 0.07        | 0.40        | 1.84       | 142         | 6.79        | 0.18        | 41.97      | 5.53       | 0.14       |
| FM-3B              | 13.9                | 8.2 | -            | 0.04        | 0.09        | 0.12        | 0.32        | 1.57       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | 8.2 | -            | 0.04        | 0.12        | 0.09        | 0.15        | 2.38       | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.6                 | 8.2 | -            | 0.07        | 0.16        | 0.11        | 0.34        | 2.38       | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | 8.2 | 1957         | 0.07        | 0.43        | 0.04        | 0.91        | 2.23       | 192         | 9.74        | 0.43        | 37.38      | 5.44       | 0.17       |

## MOBILE BAY CRUISE MB-32

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 6.59                   | 8.36           | 1.09           | 125              | 201.0             |
| MR-1B              | 13.6                | -                      | 0.60           | -              | -                | -                 |
| MR-2S              | 1.0                 | 8.86                   | 5.39           | 1.21           | 125              | -                 |
| DR-1S              | 1.0                 | 5.23                   | 2.99           | 1.10           | 125              | -                 |
| DR-3S              | 1.0                 | 4.32                   | 2.80           | 0.96           | 150              | 333.0             |
| DR-3B              | 14.8                | -                      | 0.66           | -              | -                | -                 |
| DR-5S              | 1.0                 | 6.14                   | 2.50           | 0.95           | 125              | -                 |
| DR-5B              | 2.4                 | -                      | 2.64           | -              | -                | -                 |
| DR-7S              | 1.0                 | 6.59                   | 1.92           | 0.90           | 125              | 135.0             |
| DR-7B              | 1.7                 | -                      | 1.51           | -              | -                | -                 |
| PC-1S              | 1.0                 | 11.59                  | 2.03           | 1.43           | 125              | -                 |
| PC-3S              | 1.0                 | 11.59                  | 2.12           | 0.98           | 100              | 223.0             |
| PC-3B              | 13.9                | -                      | 0.48           | -              | -                | -                 |
| PC-5S              | 1.0                 | 45.68                  | 1.69           | 0.96           | 125              | 781.0             |
| PC-5B              | 2.4                 | -                      | 0.97           | -              | -                | -                 |
| FR-3S              | 14.0                | 14.32                  | 1.51           | 1.07           | 75               | 1055.0            |
| FR-3B              | 5.4                 | -                      | 0.87           | -              | -                | -                 |
| FR-5S              | 1.0                 | 7.05                   | 1.95           | 1.14           | 100              | -                 |
| FR-5B              | 2.4                 | -                      | 1.85           | -              | -                | -                 |
| WB-1S              | 1.0                 | 15.68                  | 2.22           | 1.37           | 50               | 950.0             |
| WB-3S              | 1.0                 | 17.95                  | 1.36           | 1.12           | 75               | 890.0             |
| WB-3B              | 14.2                | -                      | 0.62           | -              | -                | -                 |
| WB-5S              | 1.0                 | 12.50                  | 1.76           | 0.97           | 125              | -                 |
| WB-5B              | 2.4                 | -                      | 1.12           | -              | -                | -                 |
| WB-7S              | 1.0                 | 12.05                  | 1.86           | 1.20           | 100              | 1007.0            |
| CP-3S              | 1.0                 | 16.59                  | 1.34           | 0.91           | 125              | 819.0             |
| CP-3B              | 13.3                | -                      | 0.36           | -              | -                | -                 |
| BS-5S              | 1.0                 | 12.50                  | 1.49           | 0.89           | 100              | -                 |

MOBILE BAY CRUISE MB-32

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| BS-7S              | 1.0                 | 10.68                  | 2.05            | 1.12           | 100            | 0.803            | 1546.0            |
| BS-7B              | 2.4                 | -                      | 0.89            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 10.68                  | 1.49            | 0.65           | 75             | -                | -                 |
| FM-3S              | 1.0                 | 18.28                  | 0.56            | 0.53           | 200            | 0.188            | 700.0             |
| FM-3B              | 13.9                | -                      | 0.20            | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 9.71                   | 0.69            | 0.71           | 175            | -                | -                 |
| FM-5B              | 3.6                 | -                      | 0.38            | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 10.81                  | 0.71            | 0.67           | 125            | 0.470            | 1482.0            |

## ***Mobile Bay Cruise Report***

***MB-33***

16, 17 November 1992

***Vessel:*** *R/V Deborah B.*

***Operation Area:***

- \* 16 November: Mobile Bay from Fort Morgan to Point Clear transect
- \* 17 November: Upper Mobile Bay from Dog River to Mobile River

***Scientific Party:*** Felix Fernandez (Chief Scientist)  
Stan Beasley  
Alma Robichaux

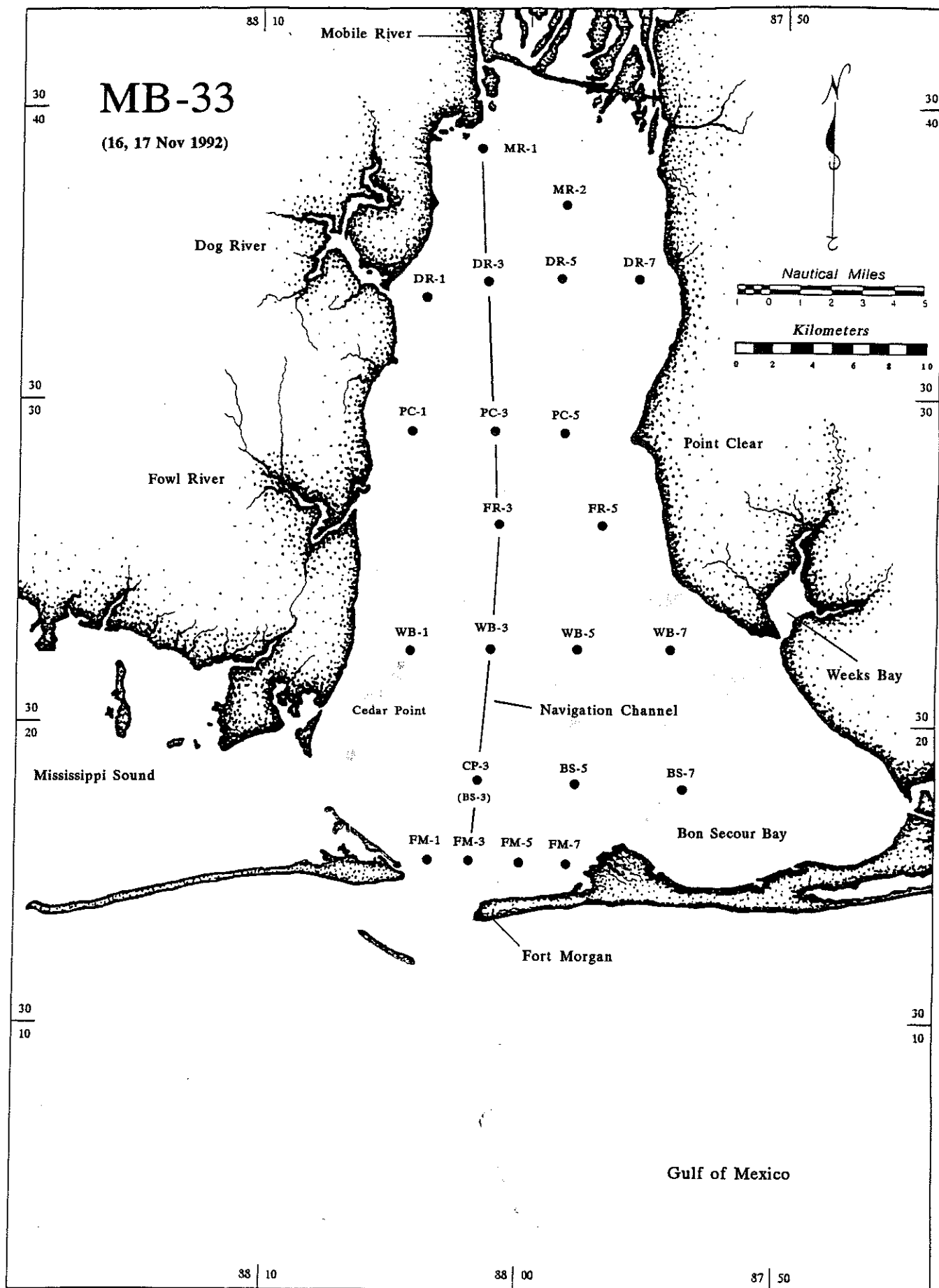
***Supporting Agency:*** U.S. Geological Survey

***Research Objectives:*** Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 22 surface stations (14 of those including bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations. Surface sediment samples for PC/PN analysis were collected using a Shipek bottom sampler at selected Bay stations.

***Cruise Summary:***

16 November: departed DISL 0715. Deadheaded to station FM-1. Began sampling 0730. Stations were continued going upbay through PC-1. Cruise was terminated following sampling at station PC-1 due to malfunction of ship's hydraulic system. Returned to DISL 1530.

17 November: departed DISL 1130. Deadheaded to station DR-3. Began sampling 1300. Completed sampling of Upper Bay stations which were missed on the previous day. Returned to DISL 1500.



## MOBILE BAY CRUISE MB-33

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 11/17/92      | 1325          | 30         | 38.0       | 88          | 1.9         | 12780.1          | 47180.2          | 14.6                | 2.3               | 16.4        | 8.1         | 84          |
| MR-1B              | 13.6                | 11/17/92      | 1325          | 30         | 38.0       | 88          | 1.9         | 12780.1          | 47180.2          | 14.6                | 28.5              | 18.7        | 5.8         | 73          |
| MR-2S              | 1.0                 | 11/17/92      | 1344          | 30         | 36.3       | 87          | 58.5        | 12815.6          | 47175.0          | 3.4                 | 0.2               | 15.5        | 8.1         | 82          |
| DR-1S              | 1.0                 | 11/17/92      | 1436          | 30         | 32.6       | 88          | 3.9         | 12755.3          | 47159.4          | 2.7                 | 3.3               | 15.6        | 8.3         | 85          |
| DR-3S              | 1.0                 | 11/17/92      | 1301          | 30         | 33.9       | 88          | 1.7         | 12780.8          | 47165.1          | 15.8                | 2.3               | 16.5        | 8.6         | 89          |
| DR-3B              | 14.8                | 11/17/92      | 1301          | 30         | 33.9       | 88          | 1.7         | 12780.8          | 47165.1          | 15.8                | 28.9              | 18.9        | 6.3         | 81          |
| DR-5S              | 1.0                 | 11/17/92      | 1413          | 30         | 34.1       | 87          | 58.5        | 12814.2          | 47167.0          | 3.4                 | 0.8               | 15.1        | 7.5         | 75          |
| DR-5B              | 2.4                 | 11/17/92      | 1413          | 30         | 34.1       | 87          | 58.5        | 12814.2          | 47167.0          | 3.4                 | 4.8               | 14.9        | 7.0         | 72          |
| DR-7S              | 1.0                 | 11/17/92      | 1400          | 30         | 34.5       | 87          | 56.1        | 12839.9          | 47169.6          | 2.7                 | 1.6               | 16.1        | 7.3         | 75          |
| DR-7B              | 1.7                 | 11/17/92      | 1400          | 30         | 34.5       | 87          | 56.1        | 12839.9          | 47169.6          | 2.7                 | 7.4               | 15.9        | 7.1         | 75          |
| PC-1S              | 1.0                 | 11/16/92      | 1322          | 30         | 29.0       | 88          | 3.9         | 12753.2          | 47145.8          | 2.4                 | 3.7               | 15.8        | 8.7         | 89          |
| PC-3S              | 1.0                 | 11/16/92      | 1300          | 30         | 28.4       | 88          | 1.0         | 12783.8          | 47144.4          | 14.9                | 2.2               | 15.6        | 8.2         | 83          |
| PC-3B              | 13.9                | 11/16/92      | 1300          | 30         | 28.4       | 88          | 1.0         | 12783.8          | 47144.4          | 14.9                | 28.7              | 18.7        | 6.3         | 79          |
| PC-5S              | 1.0                 | 11/16/92      | 1239          | 30         | 28.4       | 87          | 58.0        | 12815.2          | 47145.4          | 3.4                 | 3.4               | 15.8        | 8.7         | 90          |
| PC-5B              | 2.4                 | 11/16/92      | 1239          | 30         | 28.4       | 87          | 58.0        | 12815.2          | 47145.4          | 3.4                 | 8.6               | 16.0        | 7.6         | 81          |
| FR-3S              | 1.0                 | 11/16/92      | 1211          | 30         | 25.3       | 88          | 0.8         | 12783.9          | 47132.2          | 6.4                 | 2.3               | 15.9        | 8.3         | 85          |
| FR-3B              | 5.4                 | 11/16/92      | 1211          | 30         | 25.3       | 88          | 0.8         | 12783.9          | 47132.2          | 6.4                 | 29.7              | 19.0        | 6.4         | 82          |
| FR-5S              | 1.0                 | 11/16/92      | 1145          | 30         | 25.1       | 87          | 56.9        | 12824.9          | 47132.5          | 3.4                 | 5.7               | 15.4        | 8.3         | 86          |
| FR-5B              | 2.4                 | 11/16/92      | 1145          | 30         | 25.1       | 87          | 56.9        | 12824.9          | 47132.5          | 3.4                 | 11.0              | 15.5        | 7.6         | 81          |
| WB-1S              | 1.0                 | 11/16/92      | 1019          | 30         | 22.6       | 88          | 4.4         | 12745.1          | 47120.3          | 3.4                 | 4.9               | 15.3        | 8.5         | 87          |
| WB-3S              | 1.0                 | 11/16/92      | 1042          | 30         | 22.5       | 88          | 1.3         | 12777.8          | 47121.0          | 15.2                | 3.8               | 14.9        | 8.1         | 83          |
| WB-3B              | 14.2                | 11/16/92      | 1042          | 30         | 22.5       | 88          | 1.3         | 12777.8          | 47121.0          | 15.2                | 30.1              | 18.9        | 7.1         | 92          |
| WB-5S              | 1.0                 | 11/16/92      | 1103          | 30         | 22.7       | 87          | 58.2        | 12810.4          | 47122.4          | 3.4                 | 6.1               | 15.1        | 8.5         | 87          |
| WB-5B              | 2.4                 | 11/16/92      | 1103          | 30         | 22.7       | 87          | 58.2        | 12810.4          | 47122.4          | 3.4                 | 7.3               | 15.0        | 8.7         | 90          |
| WB-7S              | 1.0                 | 11/16/92      | 1122          | 30         | 22.6       | 87          | 55.3        | 12840.1          | 47122.6          | 3.0                 | 11.5              | 15.6        | 8.0         | 86          |
| CP-3S              | 1.0                 | 11/16/92      | 937           | 30         | 18.2       | 88          | 1.9         | 12769.0          | 47103.0          | 14.3                | 7.0               | 14.9        | 8.4         | 87          |
| CP-3B              | 13.3                | 11/16/92      | 937           | 30         | 18.2       | 88          | 1.9         | 12769.0          | 47103.0          | 14.3                | 31.1              | 18.8        | 6.9         | 89          |
| BS-5S              | 1.0                 | 11/16/92      | 912           | 30         | 16.9       | 87          | 58.3        | 12805.0          | 47098.1          | 3.6                 | 10.9              | 14.6        | 9.3         | 97          |

## MOBILE BAY CRUISE MB-33

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG : MIN | LON<br>DEG : MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| BS-7S              | 1.0                 | 11/16/92      | 851           | 30 : 16.8        | 87 : 54.9        | 12840.0          | 47098.2          | 3.4                 | 12.3              | 14.3        | 9.4         | 99          |
| BS-7B              | 2.4                 | 11/16/92      | 851           | 30 : 16.8        | 87 : 54.9        | 12840.0          | 47098.2          | 3.4                 | 14.8              | 14.9        | 8.4         | 91          |
| FM-1S              | 1.0                 | 11/16/92      | 731           | 30 : 15.8        | 88 : 3.7         | 12748.1          | 47092.5          | 4.8                 | 10.3              | 14.4        | 9.0         | 94          |
| FM-3S              | 1.0                 | 11/16/92      | 750           | 30 : 15.5        | 88 : 2.3         | 12762.8          | 47091.2          | 14.9                | 9.7               | 14.4        | 8.7         | 91          |
| FM-3B              | 13.9                | 11/16/92      | 750           | 30 : 15.5        | 88 : 2.3         | 12762.8          | 47091.2          | 14.9                | 30.4              | 18.5        | 7.3         | 94          |
| FM-5S              | 1.0                 | 11/16/92      | 805           | 30 : 15.6        | 88 : 0.7         | 12779.0          | 47092.2          | 4.6                 | 10.9              | 14.7        | 9.2         | 97          |
| FM-5B              | 3.6                 | 11/16/92      | 805           | 30 : 15.6        | 88 : 0.7         | 12779.0          | 47092.2          | 4.6                 | 15.9              | 16.9        | 8.3         | 94          |
| FM-7S              | 1.0                 | 11/16/92      | 820           | 30 : 15.5        | 87 : 58.9        | 12797.9          | 47091.9          | 4.0                 | 13.9              | 14.8        | 8.7         | 94          |

## MOBILE BAY CRUISE MB-33

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -  | 987          | 0.84        | 13.55       | 1.08        | 1.79        | 104.70     | 516         | 18.07       | 0.06        | 69.35      | 7.35       | 0.75       |
| MR-1B              | 13.6                | -  | -            | 0.67        | 1.12        | 0.47        | 4.47        | 13.48      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -  | -            | 0.89        | 12.80       | 0.91        | 2.67        | 103.20     | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | -  | -            | 0.94        | 12.20       | 1.15        | 4.59        | 98.18      | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -  | -            | 0.63        | 12.19       | 0.95        | 1.79        | 99.67      | 517         | 20.47       | 0.37        | 74.55      | 7.08       | 0.72       |
| DR-3B              | 14.8                | -  | -            | 0.67        | 1.30        | 0.59        | 3.02        | 13.88      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -  | -            | 0.87        | 10.35       | 0.97        | 2.27        | 107.10     | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.4                 | -  | -            | 1.16        | 10.67       | 0.99        | 3.20        | 92.92      | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -  | 955          | 0.86        | 11.98       | 0.94        | 1.84        | 107.20     | 444         | 21.79       | 0.14        | 73.29      | 7.10       | 0.59       |
| DR-7B              | 1.7                 | -  | -            | 0.76        | 8.62        | 0.79        | 3.02        | 66.72      | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | -  | -            | 0.69        | 8.84        | 1.04        | 5.22        | 72.34      | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | -  | 968          | 0.58        | 8.57        | 0.97        | 1.74        | 79.20      | 435         | 20.12       | 0.47        | 44.16      | 4.66       | 0.50       |
| PC-3B              | 13.9                | -  | -            | 0.67        | 1.22        | 0.56        | 2.37        | 14.24      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | -  | 989          | 0.68        | 9.85        | 0.80        | 1.99        | 88.18      | 423         | 11.54       | 0.32        | 46.73      | 4.81       | 0.50       |
| PC-5B              | 2.4                 | -  | -            | 0.69        | 6.30        | 0.63        | 2.12        | 57.10      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -  | 945          | 0.58        | 7.34        | 0.72        | 1.73        | 88.72      | 447         | 20.27       | 0.42        | 54.82      | 5.74       | 0.51       |
| FR-3B              | 5.4                 | -  | -            | 1.95        | 0.88        | 0.81        | 2.74        | 19.39      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | -  | -            | 0.53        | 6.98        | 0.57        | 1.83        | 56.28      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.4                 | -  | -            | 0.55        | 6.74        | 0.86        | 2.44        | 52.57      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | -  | 1092         | 0.37        | 6.42        | 0.45        | 2.37        | 55.41      | 390         | 16.53       | 0.43        | 55.80      | 6.23       | 0.58       |
| WB-3S              | 1.0                 | -  | 1024         | 0.56        | 7.75        | 0.62        | 2.12        | 63.83      | 408         | 19.20       | 0.34        | 49.56      | 5.58       | 0.51       |
| WB-3B              | 14.2                | -  | -            | 0.19        | 0.58        | 0.57        | 0.29        | 7.79       | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | -  | -            | 0.52        | 6.80        | 0.60        | 2.13        | 59.97      | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.4                 | -  | -            | 0.30        | 4.77        | 0.56        | 0.91        | 39.48      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | -  | 1380         | 0.43        | 4.53        | 0.59        | 1.79        | 34.43      | 313         | 16.76       | 0.22        | 62.58      | 8.37       | 0.61       |
| CP-3S              | 1.0                 | -  | 1171         | 0.58        | 8.57        | 0.62        | 1.47        | 66.37      | 354         | 14.86       | 0.12        | 45.14      | 5.72       | 0.45       |
| CP-3B              | 13.3                | -  | -            | 0.17        | 0.42        | 0.51        | 1.08        | 4.05       | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | -  | -            | 0.19        | 4.14        | 0.49        | 0.00        | 34.82      | -           | -           | -           | -          | -          | -          |



## MOBILE BAY CRUISE MB-33

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| BS-7S              | 1.0                 | -  | 1360         | 0.12        | 2.03        | 0.43        | 0.00        | 27.19      | 290         | 11.70       | 0.28        | 112.73     | 16.83      | 0.61       |
| BS-7B              | 2.4                 | -  | -            | 0.20        | 2.54        | 0.67        | 0.60        | 33.81      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.48        | 7.20        | 0.68        | 0.95        | 54.52      | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | -  | 1287         | 0.31        | 5.33        | 0.47        | 0.86        | 33.66      | 330         | 17.66       | 0.19        | 52.51      | 6.46       | 0.40       |
| FM-3B              | 13.9                | -  | -            | 0.51        | 0.67        | 0.63        | 3.14        | 7.63       | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -  | -            | 0.31        | 6.68        | 0.64        | 0.59        | 49.50      | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.6                 | -  | -            | 0.77        | 4.52        | 0.77        | 1.23        | 36.22      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | 1423         | 0.20        | 4.08        | 0.64        | 0.04        | 42.49      | 287         | 12.76       | 0.30        | 73.38      | 10.27      | 0.81       |

## MOBILE BAY CRUISE MB-33

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m <sup>2</sup> /d |
|--------------------|---------------------|------------------------|----------------|----------------|------------------|--------------------------------|
| MR-1S              | 1.0                 | 14.00                  | 0.81           | 0.97           | 50               | 0.133                          |
| MR-1B              | 13.6                | -                      | 0.70           | -              | -                | -                              |
| MR-2S              | 1.0                 | 10.00                  | 0.55           | 1.06           | 25               | -                              |
| DR-1S              | 1.0                 | 16.00                  | 0.49           | 1.39           | 50               | -                              |
| DR-3S              | 1.0                 | 17.00                  | 0.85           | -              | 25               | 0.148                          |
| DR-3B              | 14.8                | -                      | 1.07           | -              | -                | -                              |
| DR-5S              | 1.0                 | 6.50                   | 0.51           | 1.18           | 50               | -                              |
| DR-5B              | 2.4                 | -                      | 0.28           | -              | -                | -                              |
| DR-7S              | 1.0                 | 12.50                  | 0.71           | 0.65           | -                | 0.135                          |
| DR-7B              | 1.7                 | -                      | 0.73           | -              | -                | -                              |
| PC-1S              | 1.0                 | 10.50                  | 0.34           | 2.14           | 50               | -                              |
| PC-3S              | 1.0                 | 8.50                   | 0.42           | -              | -                | 0.063                          |
| PC-3B              | 13.9                | -                      | 1.63           | -              | -                | -                              |
| PC-5S              | 1.0                 | 7.00                   | 0.64           | 1.89           | 50               | 0.103                          |
| PC-5B              | 2.4                 | -                      | 0.69           | -              | -                | -                              |
| FR-3S              | 1.0                 | 8.00                   | 0.62           | 2.13           | 50               | 0.113                          |
| FR-3B              | 5.4                 | -                      | 1.15           | -              | -                | -                              |
| FR-5S              | 1.0                 | 6.00                   | 0.60           | 1.34           | 50               | -                              |
| FR-5B              | 2.4                 | -                      | 1.44           | -              | -                | -                              |
| WB-1S              | 1.0                 | 11.50                  | 1.09           | 1.83           | 50               | 0.159                          |
| WB-3S              | 1.0                 | 7.50                   | 0.78           | 1.80           | 50               | 0.155                          |
| WB-3B              | 14.2                | -                      | 1.16           | -              | -                | -                              |
| WB-5S              | 1.0                 | 13.00                  | 1.23           | 1.24           | 75               | -                              |
| WB-5B              | 2.4                 | -                      | 1.56           | -              | -                | -                              |
| WB-7S              | 1.0                 | 6.00                   | 1.81           | 1.33           | -                | 0.394                          |
| CP-3S              | 1.0                 | 4.00                   | 1.34           | 1.33           | 100              | 0.194                          |
| CP-3B              | 13.3                | -                      | 0.94           | -              | -                | -                              |
| BS-5S              | 1.0                 | 5.00                   | 2.94           | 1.25           | 100              | -                              |

## MOBILE BAY CRUISE MB-33

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| BS-7S              | 1.0                 | 7.50                   | 4.59            | 1.90           | 50             | 0.589            | 638.0             |
| BS-7B              | 2.4                 | -                      | 3.76            | -              | -              | -                | -                 |
| FM-1S              | 1.0                 | 6.00                   | 1.46            | -              | 125            | -                | -                 |
| FM-3S              | 1.0                 | 3.00                   | 1.60            | -              | 100            | 0.231            | -                 |
| FM-3B              | 13.9                | -                      | 1.12            | -              | -              | -                | -                 |
| FM-5S              | 1.0                 | 5.50                   | 2.15            | -              | 100            | -                | -                 |
| FM-5B              | 3.6                 | -                      | 1.98            | -              | -              | -                | -                 |
| FM-7S              | 1.0                 | 14.00                  | 2.53            | 1.76           | 75             | 0.460            | 489.0             |

## ***Mobile Bay Cruise Report***

***MB-34***

19 January 1993

***Vessel:*** *R/V Deborah B.*

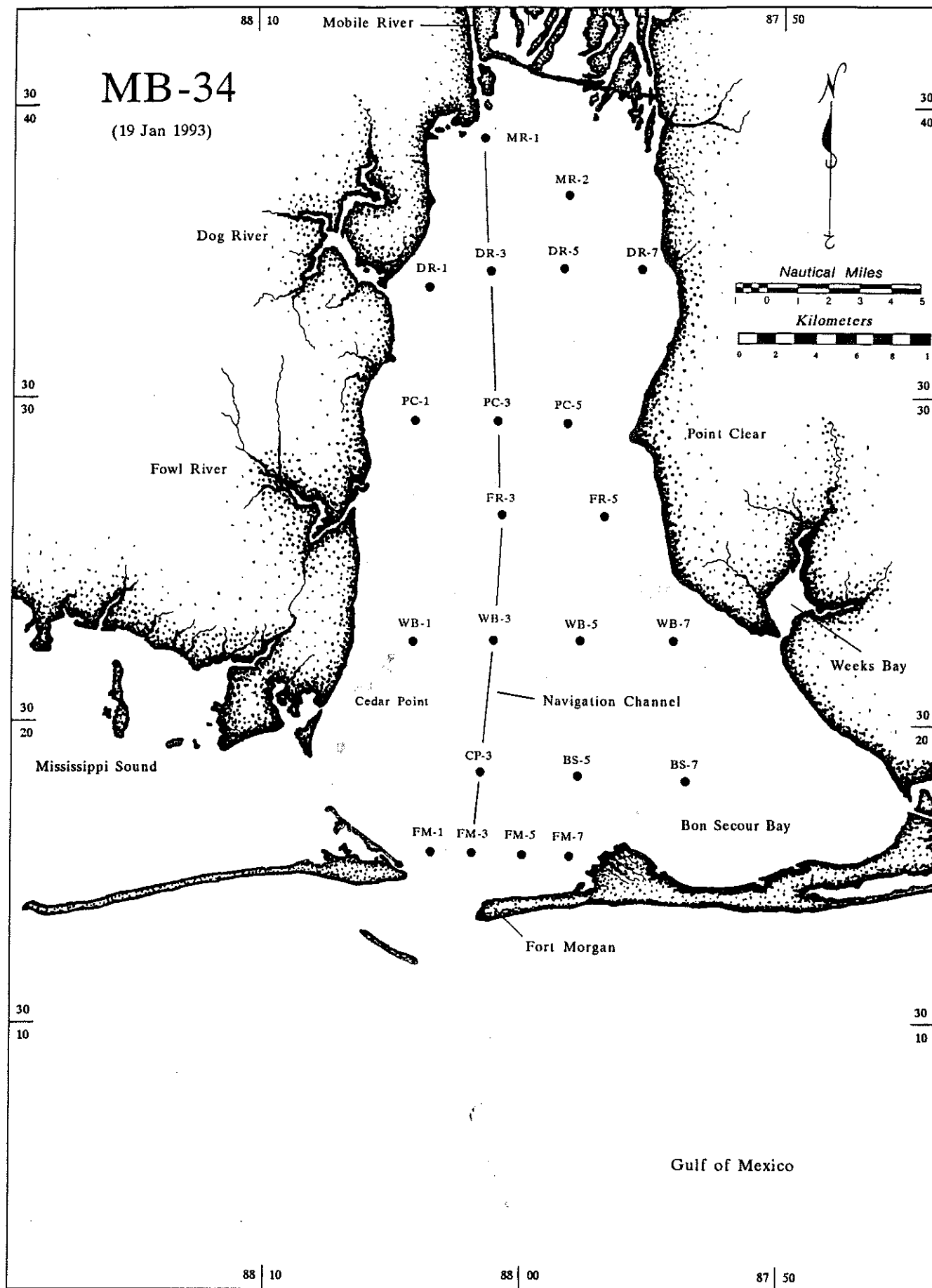
***Operation Area:*** Mobile Bay from Fort Morgan to Mobile River

***Scientific Party:*** Felix Fernandez (Chief Scientist)  
Stan Beasley  
Alma Robichaux

***Supporting Agency:*** U.S. Geological Survey

***Research Objectives:*** Niskin bottle hydrocast samples were obtained for nutrients, chlorophyll and suspended sediments at 22 surface stations (14 of those including bottom water casts). Samples were taken for TCO<sub>2</sub>, DOC, DON, DOP, POP, PC/PN, taxonomy identification and <sup>14</sup>C productivity studies at selected surface stations. Surface & bottom salinity and temperature were obtained using a Conductometer at all stations. Surface & bottom dissolved oxygen was obtained using an Orbisphere. Secchi disk and Licor light attenuation measurements were made at each station. CTD profiles (sal, temp, DO, pH, and sigma-t) were obtained with a Seabird SBE-25 at all stations. Surface sediment samples for PC/PN analysis were collected using a Shipek bottom sampler at selected Bay stations.

***Cruise Summary:*** Departed DISL 0730. Deadheaded to station FR-3. Began sampling 0800. Stations were continued going upbay following the ship channel to station MR-1, then the remaining stations from MR-2 south to FM-1. Returned to DISL 1430.



## MOBILE BAY CRUISE MB-34

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LONG<br>DEG | LONG<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|-------------|-------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| MR-1S              | 1.0                 | 1/19/93       | 908           | 30         | 38.1       | 88          | 1.9         | 12780.7          | 47180.2          | 9.8                 | 0.0               | 12.5        | 7.6         | 71          |
| MR-1B              | 8.8                 | 1/19/93       | 908           | 30         | 38.1       | 88          | 1.9         | 12780.7          | 47180.2          | 9.8                 | 25.2              | 14.9        | 6.8         | 78          |
| MR-2S              | 1.0                 | 1/19/93       | 928           | 30         | 36.3       | 87          | 58.5        | 12815.5          | 47175.3          | 3.0                 | 0.0               | 12.0        | 8.4         | 78          |
| DR-1S              | 1.0                 | 1/19/93       | 1021          | 30         | 32.7       | 88          | 4.0         | 12755.5          | 47159.6          | 2.4                 | 2.3               | 13.6        | 8.3         | 81          |
| DR-3S              | 1.0                 | 1/19/93       | 843           | 30         | 33.9       | 88          | 1.7         | 12780.2          | 47165.0          | 14.0                | 3.4               | 12.8        | 7.7         | 75          |
| DR-3B              | 13.0                | 1/19/93       | 843           | 30         | 33.9       | 88          | 1.7         | 12780.2          | 47165.0          | 14.0                | 30.3              | 15.8        | 7.2         | 88          |
| DR-5S              | 1.0                 | 1/19/93       | 957           | 30         | 34.3       | 87          | 58.5        | 12814.3          | 47167.7          | 3.4                 | 0.0               | 12.5        | 8.4         | 79          |
| DR-5B              | 2.4                 | 1/19/93       | 957           | 30         | 34.3       | 87          | 58.5        | 12814.3          | 47167.7          | 3.4                 | 4.5               | 12.4        | 6.8         | 65          |
| DR-7S              | 1.0                 | 1/19/93       | 944           | 30         | 34.5       | 87          | 56.1        | 12840.1          | 47169.4          | 2.7                 | 0.0               | 12.9        | 8.5         | 80          |
| DR-7B              | 1.7                 | 1/19/93       | 944           | 30         | 34.5       | 87          | 56.1        | 12840.1          | 47169.4          | 2.7                 | 1.7               | 12.7        | 8.0         | 76          |
| PC-1S              | 1.0                 | 1/19/93       | 1040          | 30         | 29.0       | 88          | 4.0         | 12753.3          | 47145.8          | 2.7                 | 2.7               | 13.5        | 8.5         | 83          |
| PC-3S              | 1.0                 | 1/19/93       | 1100          | 30         | 28.5       | 88          | 1.2         | 12782.2          | 47144.6          | 13.1                | 0.8               | 13.3        | 8.9         | 85          |
| PC-3B              | 12.1                | 1/19/93       | 1100          | 30         | 28.5       | 88          | 1.2         | 12782.2          | 47144.6          | 13.1                | 29.8              | 16.0        | 7.1         | 87          |
| PC-5S              | 1.0                 | 1/19/93       | 1115          | 30         | 28.4       | 87          | 58.0        | 12815.5          | 47145.4          | 3.4                 | 1.3               | 14.2        | 9.3         | 91          |
| PC-5B              | 2.4                 | 1/19/93       | 1115          | 30         | 28.4       | 87          | 58.0        | 12815.5          | 47145.4          | 3.4                 | 7.2               | 13.6        | 7.9         | 80          |
| FR-3S              | 1.0                 | 1/19/93       | 803           | 30         | 25.2       | 88          | 0.8         | 12783.9          | 47131.7          | 14.9                | 0.4               | 12.4        | 8.3         | 77          |
| FR-3B              | 13.9                | 1/19/93       | 803           | 30         | 25.2       | 88          | 0.8         | 12783.9          | 47131.7          | 14.9                | 31.6              | 16.3        | 7.4         | 91          |
| FR-5S              | 1.0                 | 1/19/93       | 1135          | 30         | 25.1       | 87          | 56.9        | 12825.0          | 47132.6          | 3.4                 | 7.5               | 14.8        | 9.9         | 103         |
| FR-5B              | 2.4                 | 1/19/93       | 1135          | 30         | 25.1       | 87          | 56.9        | 12825.0          | 47132.6          | 3.4                 | 15.5              | 14.1        | 6.5         | 69          |
| WB-1S              | 1.0                 | 1/19/93       | 1235          | 30         | 22.6       | 88          | 4.4         | 12745.1          | 47120.4          | 3.4                 | 2.4               | 13.4        | 8.3         | 81          |
| WB-3S              | 1.0                 | 1/19/93       | 1220          | 30         | 22.5       | 88          | 1.2         | 12778.3          | 47121.1          | 14.6                | 3.1               | 14.2        | 9.5         | 94          |
| WB-3B              | 13.6                | 1/19/93       | 1220          | 30         | 22.5       | 88          | 1.2         | 12778.3          | 47121.1          | 14.6                | 32.3              | 16.6        | 7.1         | 88          |
| WB-5S              | 1.0                 | 1/19/93       | 1206          | 30         | 22.8       | 87          | 58.2        | 12810.3          | 47122.6          | 3.6                 | 4.7               | 13.9        | 9.7         | 96          |
| WB-5B              | 2.6                 | 1/19/93       | 1206          | 30         | 22.8       | 87          | 58.2        | 12810.3          | 47122.6          | 3.6                 | 14.2              | 13.9        | 6.8         | 72          |
| WB-7S              | 1.0                 | 1/19/93       | 1151          | 30         | 22.6       | 87          | 55.3        | 12840.4          | 47122.9          | 3.0                 | 10.9              | 14.6        | 10.7        | 112         |
| CP-3S              | 1.0                 | 1/19/93       | 1258          | 30         | 18.3       | 88          | 1.9         | 12768.7          | 47103.0          | 14.9                | 5.7               | 13.9        | 9.1         | 91          |
| CP-3B              | 13.9                | 1/19/93       | 1258          | 30         | 18.3       | 88          | 1.9         | 12768.7          | 47103.0          | 14.9                | 32.2              | 16.5        | 7.1         | 88          |
| BS-5S              | 1.0                 | 1/19/93       | 1315          | 30         | 16.9       | 87          | 58.3        | 12805.3          | 47098.0          | 3.6                 | 9.5               | 14.4        | 9.7         | 100         |

## MOBILE BAY CRUISE MB-34

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | DATE<br>m/d/y | LOCAL<br>TIME | LAT<br>DEG | LAT<br>MIN | LON<br>DEG | LON<br>MIN | LORAN W<br>(12K) | LORAN Y<br>(47K) | BOTTOM<br>DEPTH (m) | SALINITY<br>(ppt) | TEMP<br>(C) | O2<br>(PPM) | OSAT<br>(%) |
|--------------------|---------------------|---------------|---------------|------------|------------|------------|------------|------------------|------------------|---------------------|-------------------|-------------|-------------|-------------|
| BS-7S              | 1.0                 | 1/19/93       | 1329          | 30 :       | 16.8       | 87 :       | 54.9       | 12840.3          | 47098.3          | 3.4                 | 14.2              | 14.9        | 9.1         | 98          |
| BS-7B              | 2.4                 | 1/19/93       | 1329          | 30 :       | 16.8       | 87 :       | 54.9       | 12840.3          | 47098.3          | 3.4                 | 19.0              | 14.5        | 7.1         | 78          |
| FM-1S              | 1.0                 | 1/19/93       | 1415          | 30 :       | 15.8       | 88 :       | 3.6        | 12749.1          | 47092.3          | 4.8                 | 8.3               | 13.9        | 8.8         | 89          |
| FM-3S              | 1.0                 | 1/19/93       | 1407          | 30 :       | 15.5       | 88 :       | 2.3        | 12762.8          | 47091.4          | 15.8                | 9.7               | 14.2        | 8.7         | 90          |
| FM-3B              | 14.8                | 1/19/93       | 1407          | 30 :       | 15.5       | 88 :       | 2.3        | 12762.8          | 47091.4          | 15.8                | 31.0              | 16.0        | 7.1         | 87          |
| FM-5S              | 1.0                 | 1/19/93       | 1358          | 30 :       | 15.7       | 88 :       | 0.8        | 12778.7          | 47092.4          | 4.2                 | 6.1               | 14.1        | 8.9         | 89          |
| FM-5B              | 3.2                 | 1/19/93       | 1358          | 30 :       | 15.7       | 88 :       | 0.8        | 12778.7          | 47092.4          | 4.2                 | 22.1              | 15.2        | 8.0         | 91          |
| FM-7S              | 1.0                 | 1/19/93       | 1348          | 30 :       | 15.6       | 87 :       | 58.9       | 12797.5          | 47092.6          | 4.0                 | 9.2               | 14.3        | 9.2         | 94          |

## MOBILE BAY CRUISE MB-34

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| MR-1S              | 1.0                 | -  | 739          | 0.86        | 18.00       | 0.59        | 7.78        | 109.66     | 446         | 17.09       | 0.04        | 90.49      | 9.07       | 1.27       |
| MR-1B              | 8.8                 | -  | -            | 0.47        | 2.92        | 0.34        | 7.06        | 31.69      | -           | -           | -           | -          | -          | -          |
| MR-2S              | 1.0                 | -  | -            | 0.93        | 17.25       | 0.48        | 3.39        | 112.49     | -           | -           | -           | -          | -          | -          |
| DR-1S              | 1.0                 | -  | -            | 0.69        | 15.77       | 0.55        | 4.12        | 105.34     | -           | -           | -           | -          | -          | -          |
| DR-3S              | 1.0                 | -  | 878          | 0.69        | 16.01       | 0.58        | 5.15        | 100.23     | 424         | 15.68       | 0.21        | 114.17     | 10.37      | 1.40       |
| DR-3B              | 13.0                | -  | -            | 0.44        | 1.06        | 0.20        | 3.37        | 16.36      | -           | -           | -           | -          | -          | -          |
| DR-5S              | 1.0                 | -  | -            | 0.93        | 16.74       | 0.61        | 2.59        | 81.05      | -           | -           | -           | -          | -          | -          |
| DR-5B              | 2.4                 | -  | -            | 0.81        | 14.08       | 0.57        | 7.36        | 104.83     | -           | -           | -           | -          | -          | -          |
| DR-7S              | 1.0                 | -  | 757          | 1.03        | 16.55       | 0.52        | 2.56        | 114.67     | 422         | 16.80       | 0.00        | 57.40      | 6.15       | 0.75       |
| DR-7B              | 1.7                 | -  | -            | 1.06        | 15.20       | 0.60        | 4.13        | 111.56     | -           | -           | -           | -          | -          | -          |
| PC-1S              | 1.0                 | -  | -            | 0.69        | 15.28       | 0.73        | 4.98        | 106.36     | -           | -           | -           | -          | -          | -          |
| PC-3S              | 1.0                 | -  | 782          | 0.79        | 15.87       | 0.56        | 5.79        | 113.84     | 437         | 14.64       | 0.26        | 49.47      | 5.49       | 0.81       |
| PC-3B              | 12.1                | -  | -            | 0.39        | 1.40        | 0.29        | 3.16        | 19.66      | -           | -           | -           | -          | -          | -          |
| PC-5S              | 1.0                 | -  | 766          | 0.69        | 15.08       | 0.55        | 3.29        | 113.65     | 414         | 17.68       | 0.41        | 151.99     | 19.73      | 1.54       |
| PC-5B              | 2.4                 | -  | -            | 0.64        | 11.54       | 0.54        | 2.57        | 97.03      | -           | -           | -           | -          | -          | -          |
| FR-3S              | 1.0                 | -  | 782          | 0.91        | 16.45       | 0.58        | 5.15        | 110.87     | 424         | 14.75       | 0.00        | 62.06      | 5.90       | 0.84       |
| FR-3B              | 13.9                | -  | -            | 0.22        | 0.69        | 0.20        | 1.75        | 13.72      | -           | -           | -           | -          | -          | -          |
| FR-5S              | 1.0                 | -  | -            | 0.20        | 3.42        | 0.46        | 3.13        | 68.37      | -           | -           | -           | -          | -          | -          |
| FR-5B              | 2.4                 | -  | -            | 0.27        | 6.49        | 0.49        | 0.37        | 97.68      | -           | -           | -           | -          | -          | -          |
| WB-1S              | 1.0                 | -  | 853          | 0.69        | 15.18       | 0.59        | 2.53        | 102.55     | 407         | 16.84       | 0.21        | 66.67      | 7.08       | 0.74       |
| WB-3S              | 1.0                 | -  | 875          | 0.52        | 14.33       | 0.77        | 2.94        | 108.64     | 392         | 16.61       | 0.28        | 49.80      | 5.77       | 0.71       |
| WB-3B              | 13.6                | -  | -            | 0.15        | 0.25        | 0.14        | 1.59        | 8.98       | -           | -           | -           | -          | -          | -          |
| WB-5S              | 1.0                 | -  | -            | 0.44        | 11.61       | 0.59        | 1.58        | 102.04     | -           | -           | -           | -          | -          | -          |
| WB-5B              | 2.6                 | -  | -            | 0.69        | 8.32        | 0.51        | 3.81        | 74.64      | -           | -           | -           | -          | -          | -          |
| WB-7S              | 1.0                 | -  | 1038         | 0.15        | 0.30        | 0.40        | 1.65        | 66.10      | 331         | 10.40       | 0.20        | 170.98     | 24.26      | 0.91       |
| CP-3S              | 1.0                 | -  | 959          | 0.44        | 12.14       | 0.57        | 2.24        | 102.09     | 382         | 15.39       | 0.21        | 69.97      | 6.86       | 0.60       |
| CP-3B              | 13.9                | -  | -            | 0.15        | 0.37        | 0.24        | 1.31        | 13.39      | -           | -           | -           | -          | -          | -          |
| BS-5S              | 1.0                 | -  | -            | 0.25        | 8.62        | 0.44        | 1.74        | 78.22      | -           | -           | -           | -          | -          | -          |



## MOBILE BAY CRUISE MB-34

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | pH | TCO2<br>(uM) | PO4<br>(uM) | NO3<br>(uM) | NO2<br>(uM) | NH4<br>(uM) | SI<br>(uM) | DOC<br>(uM) | DON<br>(uM) | DOP<br>(uM) | PC<br>(uM) | PN<br>(uM) | PP<br>(uM) |
|--------------------|---------------------|----|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|------------|------------|
| BS-7S              | 1.0                 | -  | -            | 0.17        | 0.96        | 0.42        | 1.31        | 65.31      | 289         | 12.18       | 0.18        | 104.22     | 14.03      | 0.66       |
| BS-7B              | 2.4                 | -  | -            | 0.17        | 1.78        | 0.17        | 1.09        | 50.54      | -           | -           | -           | -          | -          | -          |
| FM-1S              | 1.0                 | -  | -            | 0.44        | 10.80       | 0.60        | 1.66        | 88.20      | -           | -           | -           | -          | -          | -          |
| FM-3S              | 1.0                 | -  | 1094         | 0.44        | 6.60        | 0.33        | 0.86        | 86.25      | 348         | 17.07       | 0.11        | 38.88      | 4.51       | 0.41       |
| FM-3B              | 14.8                | -  | -            | 0.07        | 0.58        | 0.26        | 0.65        | 12.55      | -           | -           | -           | -          | -          | -          |
| FM-5S              | 1.0                 | -  | -            | 0.49        | 9.25        | 0.41        | 2.56        | 101.25     | -           | -           | -           | -          | -          | -          |
| FM-5B              | 3.2                 | -  | -            | 0.32        | 4.13        | 0.22        | 1.41        | 43.95      | -           | -           | -           | -          | -          | -          |
| FM-7S              | 1.0                 | -  | 1081         | 0.25        | 7.72        | 0.47        | 0.89        | 69.81      | 361         | 16.91       | 0.35        | 79.97      | 9.65       | 0.56       |

## MOBILE BAY CRUISE MB-34

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC/l/d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|------------------|-------------------|
| MR-1S              | 1.0                 | 30.50                  | 0.56            | -              | 25             | 0.039            | 29.0              |
| MR-1B              | 8.8                 | -                      | 0.70            | -              | -              | -                | -                 |
| MR-2S              | 1.0                 | 17.50                  | 0.45            | -              | 25             | -                | -                 |
| DR-1S              | 1.0                 | 11.00                  | 0.29            | 1.87           | 50             | -                | -                 |
| DR-3S              | 1.0                 | 28.00                  | 0.32            | -              | 25             | 0.025            | 16.0              |
| DR-3B              | 13.0                | -                      | 1.33            | -              | -              | -                | -                 |
| DR-5S              | 1.0                 | 13.50                  | 0.50            | 2.89           | 25             | -                | -                 |
| DR-5B              | 2.4                 | -                      | 0.30            | -              | -              | -                | -                 |
| DR-7S              | 1.0                 | 15.50                  | 0.75            | 1.72           | 50             | 0.081            | 54.0              |
| DR-7B              | 1.7                 | -                      | 1.20            | -              | -              | -                | -                 |
| PC-1S              | 1.0                 | 9.50                   | 0.44            | 1.75           | 50             | -                | -                 |
| PC-3S              | 1.0                 | 13.50                  | 0.57            | 2.18           | 50             | 0.066            | 40.0              |
| PC-3B              | 12.1                | -                      | 1.55            | -              | -              | -                | -                 |
| PC-5S              | 1.0                 | 18.00                  | 6.19            | 1.71           | 25             | 0.738            | 573.0             |
| PC-5B              | 2.4                 | -                      | 1.42            | -              | -              | -                | -                 |
| FR-3S              | 1.0                 | 13.00                  | 0.40            | -              | 25             | 0.040            | 24.0              |
| FR-3B              | 13.9                | -                      | 1.17            | -              | -              | -                | -                 |
| FR-5S              | 1.0                 | 6.00                   | 5.28            | 1.68           | 125            | -                | -                 |
| FR-5B              | 2.4                 | -                      | 3.13            | -              | -              | -                | -                 |
| WB-1S              | 1.0                 | 11.50                  | 1.00            | 1.98           | 50             | 0.250            | 172.0             |
| WB-3S              | 1.0                 | 8.50                   | 1.58            | 1.64           | 50             | 0.162            | 109.0             |
| WB-3B              | 13.6                | -                      | 1.32            | -              | -              | -                | -                 |
| WB-5S              | 1.0                 | 6.00                   | 0.53            | 1.42           | 75             | -                | -                 |
| WB-5B              | 2.6                 | -                      | 0.53            | -              | -              | -                | -                 |
| WB-7S              | 1.0                 | 5.50                   | 6.12            | 1.50           | 100            | 0.759            | 559.0             |
| CP-3S              | 1.0                 | 5.00                   | 2.25            | 1.28           | 100            | 0.275            | 292.0             |
| CP-3B              | 13.9                | -                      | 1.77            | -              | -              | -                | -                 |
| BS-5S              | 1.0                 | 4.50                   | 1.85            | 0.83           | 150            | -                | -                 |

MOBILE BAY CRUISE MB-34

| CRUISE/<br>STATION | SAMPLE<br>DEPTH (m) | SESTON CHLOR<br>(mg/l) | CHLOR<br>(ug/l) | ATTEN<br>-(/m) | SECCHI<br>(cm) | VPROD<br>mgC//d | APROD<br>mgC/m2/d |
|--------------------|---------------------|------------------------|-----------------|----------------|----------------|-----------------|-------------------|
| BS-7S              | 1.0                 | 5.67                   | 2.83            | 0.50           | 125            | 0.193           | 607.0             |
| BS-7B              | 2.4                 | -                      | 2.26            | -              | -              | -               | -                 |
| FM-1S              | 1.0                 | 5.00                   | 1.27            | -              | -              | -               | -                 |
| FM-3S              | 1.0                 | 5.33                   | 0.83            | -              | -              | 0.083           | 110.0             |
| FM-3B              | 14.8                | -                      | 1.30            | -              | -              | -               | -                 |
| FM-5S              | 1.0                 | 5.67                   | 0.80            | -              | -              | -               | -                 |
| FM-5B              | 3.2                 | -                      | 1.46            | -              | -              | -               | -                 |
| FM-7S              | 1.0                 | 5.67                   | 2.48            | -              | 125            | 0.247           | 734.0             |