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HYDROGRAPHIC DATA FROM THE NOAA SHIP RESEARCHER
DURING THE OCTOBER 1977 OCEAN COLOR AND CIRCULATION CRUISE
IN THE GULF OF MEXICO

George A. Maul
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
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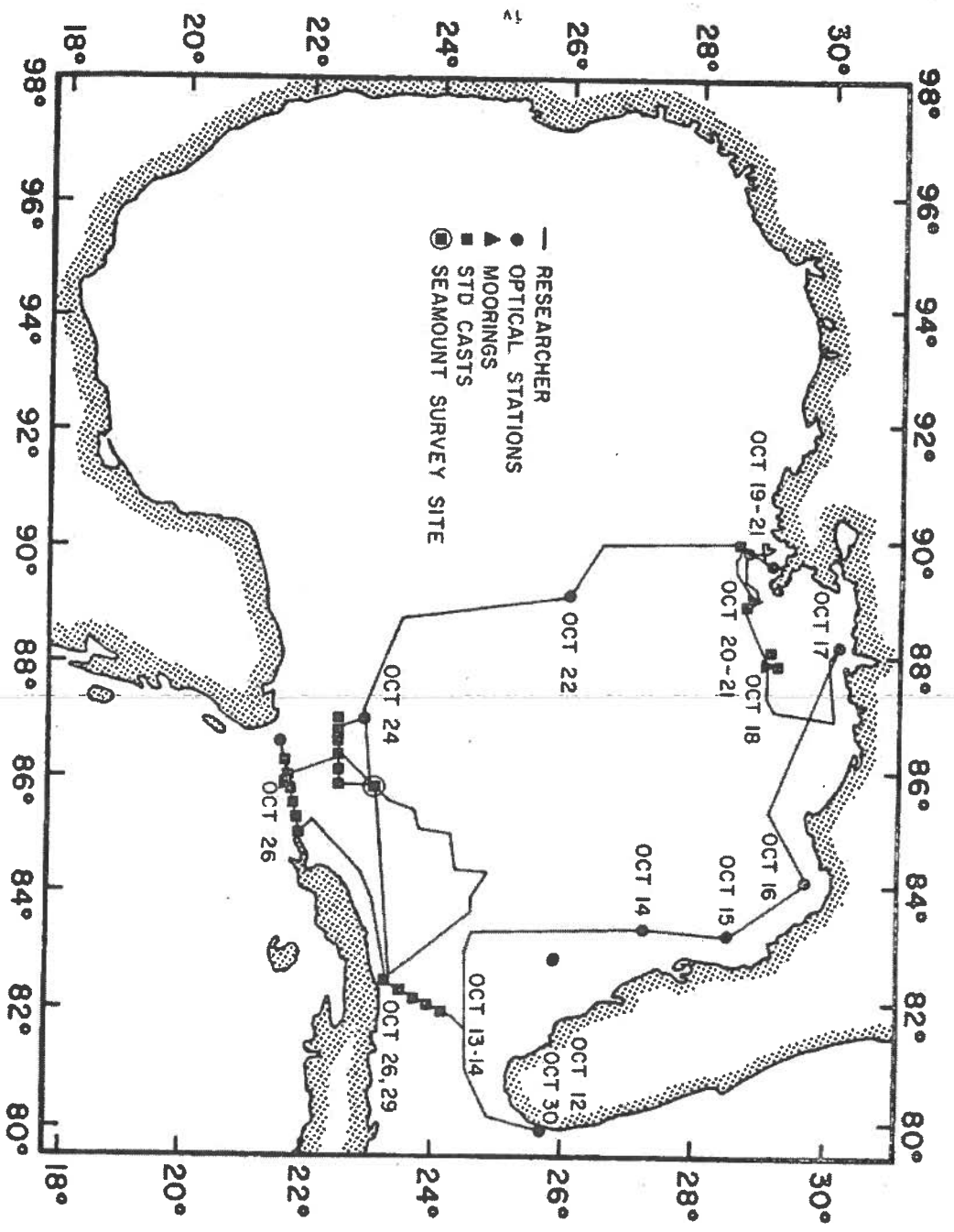
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1. Introduction

The NOAA Ship RESEARCHER departed Miami on October 12, 1977 for eastern Gulf waters near the Dry Tortugas. The RESEARCHER rendezvoused with the R/V GYRE (Texas A&M University) and proceeded to the planned work area. The location of each work site was determined by overflights by NASA aircraft, which provided actual real-time images of the area, and/or by running preset tracklines while recording chlorophyll levels with a fluorometer. Each day the R/V GYRE was contacted and its similar information was reviewed. Based upon the data information gathered by both vessels, a general worksite was selected. A series of optical experiments was then planned, coordinating the positions and work schedules of the two research vessels for purposes of equipment calibration and data verification.

2. Cruise Summary

The primary purposes of this cruise were twofold:

- 1) A study of the eastern Gulf of Mexico region using light sensitive equipment was conducted to sample and identify certain optical properties of the Gulf waters; from the data amassed during this cruise, it is anticipated that an accurate basis for the study of remote sensing of ocean color can be derived.
- 2) A survey of the southeastern Gulf of Mexico waters was carried out in order to continue determination of the basic circulation pattern in this area, and to implant a current meter array 100 m above the sill of the Yucatan Strait.

Itinerary for this cruise is as follows:

- OCT 12 RESEARCHER departs Miami on Ocean Color and Circulation Cruise; takes coastal route towards Dry Tortuga; dry run of typical Bio-Optical station conducted in afternoon.
- OCT 13 Rendezvous with R/V GYRE; Dry Tortugas station abandoned due to passage of front.
- OCT 14 Preliminary grid and overflights of Tampa Bay survey area followed by Bio-Optical station; rendezvous with GYRE.

- OCT 15 Preliminary grid and low altitude overflights held. Rendezvous with GYRE; Bio-Optical station conducted east of Crystal River Florida. During the evening, the RESEARCHER hosted a discussion of the scientific complements of both ships.
- OCT 16 Preliminary grid and overflights; Bio-Optical station occupied in Apalachee Bay. No rendezvous with GYRE. Began XBT survey of De Soto Canyon area this evening.
- OCT 17 Completed XBT survey of De Soto Canyon, preliminary grid and overflights; Bio-Optical station completed. Location vicinity of Mobile Bay. During afternoon hours, light measurements by camera to a depth of 52 feet by a group of four RESEARCHER divers. Once underway to buoy sites, a more detailed XBT survey was conducted through the axis of De Soto Canyon area.
- OCT 18 Completed XBT survey; arrived on OTEC buoy site ($29^{\circ}06.50'N$ and $87^{\circ}55.12'W$). Retrieved, serviced, and removed this current meter array at $29^{\circ}11.43'N$; $87^{\circ}38.16'W$. Second current meter at $29^{\circ}02.33'N$ and $88^{\circ}06.78'W$ failed to surface upon command. Once underway, an XBT/STD survey was conducted enroute to work site.
- OCT 19, 20, 21 Three full days of preliminary grids, optical stations and overflights whenever possible while in general vicinity of Southwest Pass, Louisiana. Rendezvous with GYRE once more. Hazy conditions encountered October 20 and exchange of personnel occurred with NASA/ERL launch followed by a second scientific conference aboard RESEARCHER. Underway to next station doing STD and a series of XBT's.
- OCT 22 Arrival on optical station located at $26^{\circ}N$, $89^{\circ}30'W$. Completed Bio-Optical station; rendezvous with GYRE. Underway to next station; series of XBT's launched.
- OCT 23 Enroute to station on Campeche Bank. XBT's launched and STD's taken today.
- OCT 24 Occupation of Campeche Bank station ($23^{\circ}N$, $88^{\circ}W$). Last full day of Bio-Optical sampling with R/V GYRE. Transfer of samples with GYRE that evening; underway due east towards Havana. A search pattern for the seamount in vicinity of $23^{\circ}13'N$, $85^{\circ}42'W$.
- OCT 25 Completed unsuccessful search of seamount due to limited amount of time. Underway to Cuban waters.
- OCT 26 Completed pick-up of Cuban observers at Havana. Underway to XBT/STD survey line across the Yucatan Strait.
- OCT 27 Conducted XBT/STD survey across Yucatan Strait.

- OCT 28 Conducted final Bio-Optical station and moored current meter array at 21°41.99'N, 85°52.81'W.
- OCT 29 Debark Cuban observers. Completed XBT/STD transect of the Straits of Florida.
- OCT 30 Arrived Miami.

Sixteen scientists were aboard for this cruise, each with a distinct and interrelated research interest. The circulation study of the Gulf of Mexico formed the background hydrographic measurements for the other disciplines. A brief report from each of the other investigators is as follows:

Optical Measurements for the Ocean Color Baseline Study: R. Austin, R. Smith, W. Wilson, G. Edwards, A. Chapin - Visibility Laboratory of the Scripps Institution of Oceanography.

The ocean color studies portion of this cruise was in support of the interests of the NIMBUS Experiment Team (NET) for the Coastal Zone Color Scanner (CZCS). Measurements of the biological properties and of the size distribution and nature of the particulate matter in the water column were obtained in conjunction with concomitant optical properties of the water and the resultant spectral signature of the radiance leaving the water surface. On some stations one or more aircraft carrying spectral scanners overflew the ship. On these occasions the optical properties of the atmosphere which effect the signal available to the airborne remote sensor were measured.

Ten optical remote sensing stations were taken. The first was for the purpose of checking out equipment operation and deployment procedures. Only limited quantities of data were acquired but the station objectives were met. On the other nine stations, all essential optical data were acquired.

The following instruments were used to obtain the data listed:

- 1.0 Spectroradiometer (submersible).
 - 1.1 Downwelling spectral irradiance (370 to 700 nanometers) at two or more depths - nine stations.
 - 1.2 Upwelling spectral radiance (370 - 700 nm) at two or more depths - nine stations.
 - 1.3 Upwelling spectral irradiance (370 - 700 nm) at two or more depths - four stations.
- 2.0 ALSCAT (or Spectral Transmissometer).
 - 2.1 Beam transmittance profiles (vertical) at one or more wavelengths - ten stations.
 - 2.2 Spectral beam transmittance at one or more depths (ten wavelengths) - seven stations.
 - 2.3 Volume scattering function at 3, 6, and 12 milliradians (one or more depths, ten wavelengths) - five stations.

- 3.0 General Angle Scattering Meter (GASM)
 - 3.1 Volume scattering function from 10° to 170° at three to six wavelengths and at one or more depths - three stations.
- 4.0 Irradiance Meter
 - 4.1 Vertical profiles of the irradiance at 518 nm were obtained to the bottom or to the 0.5% of surface light depth (for biological productivity studies) - ten stations.
- 5.0 Ultraviolet Spectroradiometer (UV-B)
 - 5.1 Measurements of the downwelling spectral irradiance were obtained from 250 to 450 nm at one or more depths - four stations.
- 6.0 Secchi Depths - seven stations.
- 7.0 Ocean Color: Munsell Scale determinations - ten stations.
- 8.0 Atmospheric Measurements - Hand Held Contrast Reduction Meter (HRCRM)
 - 8.1 Measurements of atmospheric beam transmittance, both radiance and downwelling irradiance were obtained at 16 wavelengths from 400 to 700 nm - six stations.

All instrument systems were maintained in a functional and calibrated condition during the cruise. Weather and sea conditions were excellent for the purposes of ocean color measurements at most stations. A variety of water colors, productivities, and suspended particulates were found in the coastal waters of the Gulf of Mexico providing an adequate range of these parameters for the objectives of remote sensing studies.

Productivity - Chlorophyll; the attenuation of visible light: C. S. Yentsch, C. M. Yentsch, P. Sherman - Bigelow Laboratory for Ocean Sciences.

One of the primary aims is to analyze substances in seawater responsible for the attenuation of visible light. The ocean is considered as an efficient absorber with an average reflection of about 5%. The factors for the selective absorption of light are:

$$A_{W\lambda} + (A_{phy} + A_p)\lambda + A_o$$

where (w) indicates water, (phy) phytoplankton, (p) particles and (o) dissolved organics.

To obtain spectra for phytoplankton and other particles, fluorescence and spectrophotometric techniques are utilized. Two to ten liters of water are filtered through a glass fiber filter which is fitted into the cell compartment of a spectrophotometer. The filter is scanned spectrally between 750 nm and 350 nm using a blank filter as the reference. On the same filter, fluorescence emission and excitation are measured. These filters are then subjected to extraction for the measurement of chlorophyll a, b, c, and phaeopigments.

In conjunction with these measurements, analyses are made on the water for major nutrients, trace metals, C-H-N ratio, particulate and organic carbon, and rates of carbon-14 incorporation. Dissolved organic substances are measured by light transmission at 350 nm in membrane-filtered water samples.

In the course of the cruise, we have encountered changes in chlorophyll of approximately three orders of magnitude. Dissolved organics were measured over a range of at least two orders of magnitude. Highest values were off the Mississippi Delta. Lowest values were in the Central Gulf. Ideally we, in conjunction with the Visibility Laboratory personnel, will attempt to correlate parameters of water color with chlorophyll content, suspended sediments, dissolved organics, and detritus.

Aircraft Operations: R. Svehla, NASA, Lewis Research Center

Program objectives were to overfly the RESEARCHER and GYRE at least once each cruise location through the Campeche Bank stations, ending overflights on October 25th. OCS overflights on the Lear Jet were conducted on October 14, 15, 16, 17, 19, and 21. Only the Campeche Bank area was missed due to cloudy skies. Data for all OCS channels were logged on tape for later use. A ground receiving station on the RESEARCHER was used to receive one channel of real time OCS data, which was displayed on dry silver paper. Solar radio-meter readings of the sun's disk were also obtained during the times of overflight. UHF radio communication was maintained with the aircraft for ranges in excess of 100 miles. VHF aircraft frequency communication was also maintained between the aircraft and both the RESEARCHER and GYRE.

Suspended Particulates: T. Nelsen, AOML

Measurements of suspended particulate matter (SPM) were made at 21 stations in the Gulf of Mexico, Yucatan Strait, and Straits of Florida. The shipboard measurements of SPM included concentration and particulate size distributions by Coulter Counter. At stations where comparative measurements were made there was good agreement between optical (ALSCAT) and SPM observations on relatively high and low concentration values. High powered RF sources such as shipboard radio transmitters proved to be debilitating noise sources for the Coulter Counter and hence coordination between radio transmissions and data collection was necessary.

Phytoplankton Communities: M. Ednoff, FSU

Samples were collected for continued investigations of phytoplankton community structure associated with the Gulf of Mexico Loop Current. Specifically, phytoplankton samples were collected at six or seven depths throughout the euphotic zone on two transects crossing from the waters outside the Loop Current through and into the waters of the current. Samples will be enumerated for species composition and correlated with

the other measurements sampled concurrently (Chl-a, nutrients, salinity, temperature, etc.) to determine if a zone of high productivity exists along the cyclonic edge of the current, and to investigate possible mechanisms responsible for this zone of higher productivity.

AOML Instrument Development: W. Krug, AOML

An AOML designed and built expendable bathythermograph digital data logger (XBT-DDL) was connected to the RESEARCHER's XBT system. Each XBT cast is automatically recorded on cassette tape; the system seemed to function properly. An Ebert 1/8 meter spectrometer was rigged from the starboard crane to record the upwelling light from the water surface. The unit was then placed on F-deck and the downwelling light from the sun was recorded. Five stations were taken in this manner. The data will be processed at AOML as there is no computer program presently available for the RESEARCHER's system.

Volume Scattering Measurements: K. Faller, NASA-ERL

Volume scattering function measurements were made on samples taken from five optical stations. These represented widely varying water types around the eastern Gulf of Mexico. The measurements were coordinated with Coulter Counter observations. The data appears to be of good quality with the exception of data taken at the first station due to an equipment malfunction which was rectified. Reproducibility tests indicated that results were repeatable with approximately 12% rms deviation.

3. Navigation

The primary navigation control aboard the RESEARCHER is provided by a Loran-C navigation system. A position is computed every ten minutes and is recorded on magnetic tape using a Honeywell 316/516 computer system. Loran-C positions can be computed at a greater rate if needed. Satellite navigation served as the supplementary navigation system which computes a position every 30 to 60 minutes, depending on the frequency of the satellite passes. The Loran-C fixes are compared to the satellite fixes for accuracy. A smooth plot of the ship's track during a particular cruise incorporates the most reliable positions from both systems.

With the Loran-C as the primary system and the satellite fix as a supplementary system, accuracy of any position is within $\pm .2$ nautical miles.

4. Expendable Bathythermograph Data

The XBT profiles are digitized upon return to AOML and the greatest depth of each T^{θ} isotherm is recorded along with the sea surface temperature (SST). XBT profiles whose traces are disrupted due to radio transmissions or broken wires are eliminated.

A check cycle tick mark is examined on each XBT trace as an indication that the XBT recorder was initialized before the probe was released. All profiles without such a tick mark are compared to their surrounding profiles for consistency. The XBT recorder can be calibrated by a comparison of sea surface temperatures from the XBT profile and a bucket sample taken at each XBT location.

5. Density Data

A Plessey Environmental Systems Model 9040 CSTD system was used in this study to collect density data. Incorporated into the CSTD system was a General Oceanic Rosette Sampler to collect bottle data to be used for calibration purposes. The sampling rate for the CSTD was approximately two scans/second. One scan of a Plessey 9040 CSTD consists of a measured value of conductivity, salinity, temperature and depth. The drop rate for the CSTD was 50 meters/minute through the thermocline, with a drop rate of 30 meters/minute from the surface to the mixed layer depth. The analysis of all temperature data collected by the Rosette Sampler incorporated the procedures outlined in Lafond (1951). Thermometer depths, computed on board the RESEARCHER, are accurate to within 3% of the depth. All salinity samples from the Rosette Sampler were analyzed by a Guildline Autosol 8400 and are accurate to $\pm .01$ ‰.

The computer processing techniques applied to the raw CSTD data are designed to eliminate scans which contain extraneous values of either parameter, whereby the entire scan is removed. Effects of shiproll are eliminated by producing a series monotonically increasing in depth by only accepting progressively greater values of depth. A low pass filter is then applied to the depth series (Scarlet, 1975).

The temperature probe of the Plessey 9040 CSTD has a slower response than the other probes in the instrument and for that reason a time lag correction must be applied to the temperature values. The time lag involved is 0.35 seconds. The forward difference analogue which is used to correct the slow response is:

$$T = MT + \frac{MT}{dt} * t$$

where T = time lag corrected temperature

MT = measured temperature

$\frac{MT}{dt}$ = temperature difference between successive readings

t = time constant of probe (.35 sec.)

A subsequent salinity correction developed by Mosetti (1967) was applied to the values of salinity to compensate for the time lag of the temperature probe.

Bottle data collected by the Rosette Sampler were used to calibrate the density profiles. Offsets realized by a comparison between bottle data and those scans measured by the CSTD were applied to the final CSTD series to create a processed, calibrated series.

6. Nutrient Data

Nutrient samples for circulation studies were collected in 125 ml "aged" linear polyethaline bottles and frozen immediately after collection. They were kept at -15°C in a dark container and returned to AOML for analysis. Samples were analyzed on a multi-channel Technicon Model I Autoanalyzer using standard Technicon nutrient methodology. Detection limits are as follows:

Parameter	Detection Limit ($\mu\text{g-at/l}$)	Coefficient of Variation (% at $\mu\text{g-at/l}$)
$\text{NO}_3\text{-N}$	0.5	0.17 at 15.0
$\text{NO}_2\text{-N}$	0.1	1.2 at 3.2
$\text{PO}_4\text{-P}$	0.05	1.6 at 0.64

7. Suspended Particulate Data

Water sampling was accomplished with a remotely activated Rosette sampling system which accommodates a suite of ten 10-liter Niskin bottles. After bottle closure at desired depths, the Rosette sampling system was brought back on board the vessel for subsampling.

For measurements of suspended particulate matter (SPM) concentrations duplicates were drawn from each Niskin sampler into volumetrically calibrated polyethylene bottles. These known volumes of sea water were then vacuum filtered through pre-weighed Nuclepore (47 mm diameter, 0.4 μ pore size) membrane filters. After filtering the sea water, each filter and its associated glass filter holder received a minimum of two washes with distilled water. This assured that any particles adhering to the glass filter funnel walls would be washed onto the filter and the filters would be purged of salts. The glass funnel was then removed and the filter edge received a final distilled water wash to purge it of any foreign material. The filters were then placed in covered petri-slides and stored for final weighing in the laboratory. In the laboratory the filters were dried at 50°C for at least four hours and allowed to cool overnight in a closed petri-slide before final weighing. All weights

were measured to the nearest 0.01 milligram on a Perkin-Elmer Model AM-2 digital micro-balance. Final SPM weights were then normalized to filtered water volume, and all concentration values were expressed in milligrams of SPM per liter of water (Mg/l).

8. References

- Lafond, E. C. (1951). Processing Oceanographic Data, U.S. Navy Hydrographic Office. Publication No. 614, U.S. Government Printing Office, Washington, D.C., 114 pp.
- Mosetti, F. (1966). A new formula for the correction of sea water conductivity with salinity and temperature. Bolletino di Geofisica Teorica ed Applicata, Vol. 8, No. 31, pp. 213-217.
- Scarlet, R. I. (1975). A data processing method for salinity temperature and depth profiles. Deep-Sea Research, 22, pp. 509-515.

Appendix A: Nutrient Data

Nutrient Data

Station/ Depth	NO ₂ -N	NO ₃ -N	SiO ₃ -Si	PO ₄ -P
11B2500	.00	35.47	20.03	1.34
11B2250	.00	26.43	19.21	1.34
11B2000	.00	26.43	18.89	1.34
11B1500	.00	24.43	19.27	1.34
11B1250	.00	29.64	21.55	1.39
11B1000	.00	23.07	15.73	1.00
11B 750	.00	41.96	20.55	1.94
11B 500	.00	41.34	14.17	1.79
11B 100	.00	10.87	1.69	.38
12 160	.00	11.98	1.80	.38
12 100	.12	4.76	.00	.10
12 75	.12	1.25	.00	.05
12 50	.00	.00	.00	.00
12 25	.00	.00	.00	.00
12 10	.00	.00	.00	.00
13 265	.03	23.56	5.33	.70
13 150	.03	9.27	.93	.24
13 100	.04	7.44	.93	.19
13 75	.06	.00	.00	.00
13 50	.00	.00	.00	.00
13 25	.00	.00	.00	.00
13 10	.00	.00	.00	.00
13 1	.00	.00	.00	.00
14 300	.00	34.82	7.57	1.16
14 240	.00	34.82	6.45	.96
14 150	.00	30.16	3.50	.65
14 90	.18	1.69	.00	.10
14 65	.00	.00	.00	.00
14 40	.00	.00	.00	.00
14 25	.00	.00	.00	.00
14 10	.00	.00	.00	.00
14 1	.00	.00	.00	.00
15 500	.00	26.57	10.40	1.00
15 245	.00	16.28	4.56	.63
15 150	.00	9.10	1.96	.32
15 90	.09	2.22	.66	.06
15 70	.00	.00	.00	.00
15 40	.00	.00	.00	.00
15 25	.00	.00	.00	.00
15 10	.00	.00	.00	.00
15 1	.00	.00	.00	.00
17 995	.00	30.77	16.74	1.07
17 750	.15	36.04	12.34	1.13
17 500	.00	22.25	5.66	.81
17 250	.00	6.89	1.05	.21
17 100	.07	.00	.00	.00
17 75	.15	.00	.00	.00

Nutrient Data

Station/ Depth	NO ₂ -N	NO ₃ -N	SiO ₃ -Si	PO ₄ -P
17 50	.00	.00	.00	.00
18 1450	.00	25.25	19.90	1.43
18 1250	.00	26.64	20.72	1.46
18 1000	.00	32.87	22.21	1.90
18 750	.00	35.62	16.73	2.05
18 500	.00	22.58	7.29	1.24
18 250	.00	5.64	.74	.25
18 100	.08	.13	.00	.00
18 75	.38	.25	.00	.00
18 50	.00	.00	.00	.00
19 1250	.00	26.27	19.32	1.36
19 1000	.00	32.47	21.15	1.75
19 750	.00	36.89	18.06	1.99
19 500	.00	26.87	8.23	1.44
19 250	.00	6.18	.68	.28
19 100	.18	.36	.00	.00
19 75	.00	.00	.00	.00
19 50	.00	.00	.00	.00
19 25	.00	.00	.00	.00
20 1988	.00	25.97	17.19	1.28
20 1734	.00	23.88	17.42	1.22
20 1500	.00	24.28	17.71	1.21
20 1250	.00	23.68	16.84	1.22
20 1000	.00	31.51	20.38	1.75
20 762	.00	23.92	11.37	1.15
20 500	.00	22.30	6.91	.93
20 184	.00	4.67	.34	.16
20 100	.00	.92	.00	.00
20 75	.00	.00	.00	.05
20 50	.00	.00	.00	.00
20 25	.00	.00	.00	.00
21 1334	.23	13.33	9.29	.53
21 1004	.00	32.87	19.26	1.65
21 616	.00	25.81	10.71	1.15
21 282	.00	16.21	3.81	.60
21 100	.00	1.31	.00	.04
21 75	.00	4.06	.00	.09
21 50	.00	.61	.00	.00
21 25	.00	.61	.00	.00
21 10	.00	.47	.00	.00
22 50	.07	2.38	.00	.05
22 50	.13	1.94	.00	.05
22 45	.05	3.56	.00	.10
22 45	.05	2.81	.00	.10
22 40	.03	1.07	.00	.05
22 40	.00	.95	.00	.00
22 30	.00	.12	.00	.00

Station/ Depth		Nutrient Data			
		NO ₂ -N	NO ₃ -N	SiO ₃ -Si	PO ₄ -P
22	30	.00	.12	.00	.00
22	20	.00	.00	.00	.00
22	20	.00	.45	.00	.00
22	10	.00	.00	.00	.00
23	1767	.00	6.24	3.44	.40
23	1500	.00	30.06	20.88	1.46
23	1250	.00	26.48	17.08	1.29
23	1000	.00	19.37	12.06	.99
23	750	.00	15.36	8.06	.70
23	500	.26	8.92	2.51	.53
23	250	.00	7.47	.79	.31
23	100	.00	1.26	.00	.05
23	75	.00	.00	.00	.00
23	50	.00	.00	.00	.00
23	25	.00	.00	.00	.00
23	10	.00	.00	.00	.00
24	500	.00	37.16	15.12	1.69
24	250	.00	30.06	11.71	1.27
24	150	.00	23.99	6.57	1.00
24	100	.00	17.43	3.63	.70
24	75	.00	5.82	1.07	.21
24	50	.00	.21	.00	.00
24	25	.00	.00	.00	.00
24	10	.00	.00	.00	.00
24	1	.00	.00	.00	.00
25	500	.00	36.89	14.05	1.68
25	250	.00	18.54	4.38	.70
25	150	.00	16.04	3.15	.58
25	100	.00	10.23	1.72	.37
25	75	.00	1.31	.00	.04
25	50	.00	1.36	.00	.00
25	25	.00	.59	.00	.00
25	10	.00	.00	.00	.00
25	1	.00	.00	.00	.00
26	587	.00	37.38	14.03	1.72
26	250	.00	17.26	3.38	.66
26	150	.00	9.05	.00	.29
26	100	.00	3.29	.00	.09
26	75	.00	1.61	.00	.03
26	50	.00	.00	.00	.00
26	25	.00	.00	.00	.00
26	10	.00	.00	.00	.00
26	1	.00	.00	.00	.00
27	1498	.00	28.75	19.94	1.44
27	1250	.00	31.97	20.58	1.51
27	1000	.00	38.25	20.97	1.79
27	750	.00	35.50	13.10	1.61
27	500	.00	25.00	6.40	1.04

Nutrient Data

Station/ Depth	NO ₂ -N	NO ₃ -N	SiO ₃ -Si	PO ₄ -P
27 250	.00	9.40	1.25	.31
27 100	.10	.75	.00	.00
27 75	.00	.00	.00	.00
27 50	.00	.00	.00	.00
27 25	.00	.00	.00	.00
27 10	.00	.00	.00	.00
28 1650	.00	21.40	20.36	1.30
28 1500	.00	24.20	22.40	1.42
28 1250	.00	20.57	17.02	1.08
28 1000	.00	29.89	22.60	1.68
28 750	.00	30.85	16.73	1.79
28 500	.00	21.52	8.58	1.24
28 250	.00	5.64	.64	.25
28 100	.00	.24	.00	.00
28 75	.00	.00	.00	.19
28 50	.00	.00	.00	.33
28 25	.00	.00	.00	.00
28 10	.00	.00	.00	.10
29 1734	.00	24.26	21.66	1.36
29 1500	.00	26.02	23.01	1.38
29 1250	.00	28.88	23.71	1.57
29 1000	.00	32.23	23.71	1.85
29 750	.00	29.13	16.73	1.50
29 500	.00	28.07	10.93	1.35
29 250	.00	9.59	1.52	.43
29 189	.00	6.04	.57	.27
29 100	.00	.59	.00	.00
29 75	.00	.00	.00	.00
29 50	.00	.00	.00	.00
29 25	.00	.00	.00	.00
30 1073	.00	33.00	24.60	1.89
30 911	.00	25.95	16.38	1.57
30 500	.00	30.76	15.04	1.59
30 250	.00	21.10	6.49	.89
30 140	.00	4.58	.28	.16
30 100	.00	1.43	.00	.00
30 75	.00	.27	.00	.00
30 50	.00	.00	.00	.00
30 25	.00	.00	.00	.00
30 10	.00	.00	.00	.00
30 1	.00	.00	.00	.00
31 640	.16	18.49	10.93	1.31
31 500	.00	35.88	18.74	1.85
31 250	.00	26.81	10.45	1.24
31 100	.10	4.75	.90	.16
31 75	.15	3.17	.00	.10
31 50	.00	.00	.00	.00

Nutrient Data

Station/ Depth	NO ₂ -N	NO ₃ -N	SiO ₃ -Si	PO ₄ -P
31 50	.00	.00	.00	.00
31 25	.00	.00	.00	.00
31 10	.00	.00	.00	.00
32 161	.03	26.04	11.30	1.15
32 100	.10	25.44	8.82	1.28
32 75	.00	15.27	4.55	.60
32 50	.00	21.40	6.77	.95
32 25	.00	.00	1.27	.00
32 10	.00	.00	.46	.00
32 1	.00	.00	.25	.00

Appendix B: Hydrographic Data

OCEAN COLOR & CIRCULATION STATION 1												
DEPTH	SALINITY	NOAA SHIP RESEARCHER			RP-17-RE-77			STATION 1		25 22.0 N		AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	SIGMA-P	DTN HGT.	AVSALIN	AVTEMP		
0.	36.519	28.765										
10.	36.500	28.467	28.464	23.390	450.319	26.727	.036	36.505	28.452	.000		
20.	36.501	28.234	28.229	23.467	443.026	26.408	.081	36.500	28.248	.000		
30.	36.496	28.194	28.186	23.476	442.283	26.819	.125	36.498	28.194	4.482		
40.	36.500	28.134	28.125	23.499	440.199	26.843	.169	36.501	28.108	3.470		
50.	36.530	27.806	27.795	23.629	427.901	27.140	.255	36.528	27.771	6.304		
60.	36.555	27.258	27.244	23.827	409.129	27.393	.295	36.581	26.567	10.186		
70.	36.572	26.652	26.636	24.034	389.526	27.997	.331	36.557	27.266	8.782		
80.	36.595	24.831	24.814	24.618	333.805	27.997	.351	36.598	24.810	13.924		
100.	36.777	22.480	22.459	25.450	254.584	28.854	.388	36.777	22.431	14.234		
120.	36.753	19.398	19.375	26.275	175.891	29.714	.434	36.753	19.398	14.028		
140.	36.339	14.978	14.956	27.026	103.700	30.528	.458	36.270	14.736	14.328		
160.	35.999	12.949	12.927	27.194	87.015	30.729	.476	35.998	12.945	6.472		
180.	35.889	12.291	12.267	27.240	82.246	30.746	.493	35.888	12.296	3.389		
200.	35.844	12.091	12.074	27.254	80.606	30.805	.509	35.888	11.976	2.842		
220.	35.844	10.717	10.690	27.587	70.985	30.921	.524	35.652	10.650	4.443		
240.	35.472	8.722	8.696	27.552	50.156	31.161	.536	35.449	8.703	6.627		
260.	35.360	7.578	7.552	27.639	40.792	31.270	.545	35.380	7.543	5.606		
280.	35.264	6.930	6.904	27.657	34.256	31.300	.553	35.262	6.932	-3.72		
300.	35.227	6.649	6.621	27.666	34.704	31.315	.561	35.220	6.652	1.395		
320.	35.236	6.586	6.556	27.685	34.373	31.336	.568	35.229	6.561	2.214		
340.	35.214	6.417	6.386	27.688	33.538	31.342	.575	35.213	6.559	*****		

OCEAN COLOR & CIRCULATION STATION 2												
DEPTH	SALINITY	NOAA SHIP RESEARCHER			RP-17-RE-77			STATION 2		27 11.1 N		AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	SIGMA-P	DTN HGT.	AVSALIN	AVTEMP		
0.	36.179	26.689										
10.	36.179	26.672	26.669	23.780	414.966	27.110	.033	36.214	26.688	.000		
20.	36.211	26.675	26.670	23.754	415.613	27.112	.075	36.212	26.673	.000		
30.	36.490	26.035	26.028	24.167	376.355	27.530	.116	36.616	25.688	12.447		
40.	37.083	24.280	24.272	25.153	287.428	28.533	.145	36.968	25.026	16.179		

OCEAN COLOR & CIRCULATION STATION 2-1												
DEPTH	SALINITY	NOAA SHIP RESEARCHER			RP-17-RE-77			STATION 2-1		27 10.8 N		AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	SIGMA-P	DTN HGT.	AVSALIN	AVTEMP		
0.	36.189	26.711										
10.	36.196	26.695	26.693	23.736	417.290	27.003	.033	36.192	26.699	.000		
20.	36.199	26.701	26.696	23.737	417.217	27.045	.075	36.199	26.702	.000		
30.	37.040	24.435	24.429	25.075	289.048	28.452	.114	36.810	25.073	15.734		
40.	37.069	24.374	24.365	25.115	286.134	28.493	.143	36.959	25.102	16.105		

OCEAN COLOR & CIRCULATION STATION 2-2												
DEPTH	SALINITY	NOAA SHIP RESEARCHER			RP-17-RE-77			STATION 2-2		27 8.7 N		AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	SIGMA-P	DTN HGT.	AVSALIN	AVTEMP		
0.	36.106	26.580										
10.	36.105	26.672	26.667	23.730	417.775	27.089	.034	36.104	26.564	.000		
20.	36.150	26.577	26.572	23.746	418.418	27.104	.075	36.167	26.591	.000		
30.	36.897	24.666	24.659	24.897	306.793	28.272	.115	36.722	25.418	13.449		

OCEAN COLOR & CIRCULATION STATION 2-3												
DEPTH	SALINITY	NOAA SHIP RESEARCHER			RP-17-RE-77			STATION 2-3		27 7.9 N		AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	SIGMA-P	DTN HGT.	AVSALIN	AVTEMP		
0.	36.086	26.579										
10.	36.088	26.533	26.531	23.707	420.022	27.045	.034	36.090	26.533	.000		
20.	36.098	26.500	26.495	23.725	418.383	27.045	.076	36.097	26.500	.000		
30.	36.112	26.485	26.478	23.740	417.836	27.101	.117	36.349	26.069	9.118		
40.	37.066	24.587	24.578	25.048	292.446	28.425	.150	36.952	25.274	15.756		

OCEAN COLOR & CIRCULATION STATION 3												
DEPTH	SALINITY	NOAA SHIP RESEARCHER			RP-17-RE-77			STATION 3		28 36.8 N		AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	SIGMA-P	DTN HGT.	AVSALIN	AVTEMP		
0.	35.082	24.336										
10.	35.079	24.295	24.293	23.634	426.915	27.021	.034	35.443	25.187	.000		

OCEAN COLOR & CIRCULATION STATION 3-1												
DEPTH	SALINITY	NOAA SHIP RESEARCHER			RP-17-RE-77			STATION 3-1		28 39.3 N		AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	SIGMA-P	DTN HGT.	AVSALIN	AVTEMP		
0.	35.082	24.471										
10.	35.035	24.407	24.405	23.567	433.354	26.453	.044	35.035	24.407	.000		

OCFAN COLOR & CIRCULATION STATION 4
 RP-17-RE-77 LATITUDE 29 30.1 N LONGITUDE 84 2.8 W
 NOAA SHIP RESEARCHER RP-17-RE-77 POTEMP SIGMA-T SVANOM SIGMA-P DYN HGT. AVSALIN AVTEMP AVG. X 1000

DEPTH	SALINITY	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	DYN HGT.	AVSALIN	AVTEMP	AVG. X 1000
0.	34.831	23.461								
10.	34.837	23.460	23.458	23.698	420.853	27.005	.002	34.837	23.460	.000

OCFAN COLOR & CIRCULATION STATION 4-1
 RP-17-RE-77 LATITUDE 29 30.6 N LONGITUDE 84 1.6 W
 NOAA SHIP RESEARCHER RP-17-RE-77 POTEMP SIGMA-T SVANOM SIGMA-P DYN HGT. AVSALIN AVTEMP AVG. X 1000

DEPTH	SALINITY	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	DYN HGT.	AVSALIN	AVTEMP	AVG. X 1000
0.	34.831	23.535								
10.	34.862	23.548	23.546	23.691	421.539	27.006	.034	34.851	23.507	.000

OCFAN COLOR & CIRCULATION STATION 5
 RP-17-RE-77 LATITUDE 30 9.3 N LONGITUDE 84 14.5 W
 NOAA SHIP RESEARCHER RP-17-RE-77 POTEMP SIGMA-T SVANOM SIGMA-P DYN HGT. AVSALIN AVTEMP AVG. X 1000

DEPTH	SALINITY	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	DYN HGT.	AVSALIN	AVTEMP	AVG. X 1000
0.	34.205	24.229								

OCFAN COLOR & CIRCULATION STATION 5-1
 RP-17-RE-77 LATITUDE 30 9.8 N LONGITUDE 84 14.8 W
 NOAA SHIP RESEARCHER RP-17-RE-77 POTEMP SIGMA-T SVANOM SIGMA-P DYN HGT. AVSALIN AVTEMP AVG. X 1000

DEPTH	SALINITY	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	DYN HGT.	AVSALIN	AVTEMP	AVG. X 1000
0.	32.945	22.907								
12.	34.000	23.860	23.854	22.944	492.488	26.345	.010	34.000	23.860	.000

OCFAN COLOR & CIRCULATION STATION 5-2
 RP-17-RE-77 LATITUDE 30 10.4 N LONGITUDE 84 14.8 W
 NOAA SHIP RESEARCHER RP-17-RE-77 POTEMP SIGMA-T SVANOM SIGMA-P DYN HGT. AVSALIN AVTEMP AVG. X 1000

DEPTH	SALINITY	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	DYN HGT.	AVSALIN	AVTEMP	AVG. X 1000
0.	34.082	24.010								
10.	34.807	24.291	24.288	23.430	446.472	26.818	.019	34.583	23.903	.000

OCFAN COLOR & CIRCULATION STATION 6
 RP-17-RE-77 LATITUDE 28 40.1 N LONGITUDE 84 52.7 W
 NOAA SHIP RESEARCHER RP-17-RE-77 POTEMP SIGMA-T SVANOM SIGMA-P DYN HGT. AVSALIN AVTEMP AVG. X 1000

DEPTH	SALINITY	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	DYN HGT.	AVSALIN	AVTEMP	AVG. X 1000
0.	34.119	25.420								
10.	35.676	25.853	25.841	23.610	429.252	26.977	.038	35.656	25.931	.000
20.	36.116	26.281	26.277	23.807	410.549	27.169	.079	36.112	26.270	.000
30.	36.131	26.283	26.277	23.814	409.615	27.141	.120	36.130	26.283	7.758
40.	36.230	26.293	26.284	23.890	402.944	27.252	.161	36.215	26.286	4.265
50.	36.310	25.715	25.704	24.130	380.021	27.499	.201	36.294	25.577	9.180
60.	36.457	21.690	21.674	25.430	256.098	28.842	.233	36.459	20.189	10.458
70.	36.402	20.654	20.640	25.749	225.735	29.174	.257	36.499	20.721	19.440
80.	36.490	19.837	19.822	25.959	205.768	29.344	.279	36.490	19.828	12.773
100.	36.486	18.414	18.396	26.323	171.061	29.777	.316	36.477	18.423	9.223
120.	36.479	18.221	18.200	26.367	166.936	29.824	.353	36.479	18.230	3.524
140.	36.455	17.849	17.825	26.441	150.846	29.904	.383	36.459	17.863	4.354
160.	36.405	17.327	17.300	26.531	151.211	30.001	.414	36.410	17.335	4.774
180.	36.325	16.604	16.574	26.642	140.385	30.124	.443	36.331	16.628	5.256
200.	36.187	15.704	15.672	26.745	130.276	30.241	.473	36.187	15.704	5.117
220.	35.855	13.544	13.509	26.961	104.715	30.490	.521	35.855	13.544	8.579
240.	35.811	13.302	13.266	26.977	106.967	30.510	.540	35.817	13.335	8.350
260.	35.701	12.601	12.563	27.033	101.062	30.579	.561	35.704	12.611	3.939
280.	35.643	12.142	12.102	27.079	96.314	30.632	.581	35.640	12.129	3.432
300.	35.582	11.602	11.561	27.111	92.694	30.674	.600	35.542	11.587	2.783
320.	35.472	11.087	11.044	27.145	88.827	30.717	.618	35.465	11.079	3.074
340.	35.392	10.592	10.548	27.173	85.560	30.743	.635	35.398	10.590	3.043
360.	35.359	10.328	10.282	27.194	83.101	30.779	.652	35.350	10.320	2.306
380.	35.249	9.893	9.846	27.184	83.368	30.777	.669	35.249	9.888	-1.215
400.	35.191	9.458	9.411	27.212	79.999	30.813	.685	35.191	9.453	2.802
420.	35.160	9.175	9.126	27.234	77.219	30.841	.701	35.164	9.190	2.406
440.	35.113	8.842	8.792	27.251	74.698	30.865	.716	35.117	8.847	2.365
460.	35.078	8.481	8.429	27.282	71.285	30.902	.731	35.076	8.472	2.755
480.	35.048	8.203	8.151	27.301	68.759	30.926	.745	35.050	8.198	2.475
500.	35.018	7.849	7.796	27.330	65.896	30.963	.754	35.021	7.854	2.457
520.	35.001	7.605	7.550	27.353	62.186	30.990	.771	35.002	7.597	2.524
540.	34.988	7.333	7.278	27.383	58.800	31.025	.783	34.985	7.347	2.549
560.	34.970	7.077	7.021	27.405	55.739	31.052	.794	34.970	7.078	2.708
580.	34.965	6.844	6.886	27.419	53.099	31.049	.805	34.965	6.930	2.181
600.	34.950	6.671	6.613	27.452	49.710	31.107	.815	34.958	6.666	2.408
620.	34.930	6.442	6.383	27.484	45.886	31.143	.825	34.958	6.439	2.476
640.	34.962	6.310	6.250	27.503	43.562	31.165	.834	34.963	6.309	2.366
660.	34.963	6.240	6.178	27.513	41.773	31.177	.842	34.964	6.239	1.888
680.	34.965	6.163	6.100	27.525	40.074	31.191	.851	34.964	6.167	1.731
700.	34.967	6.092	6.027	27.536	38.403	31.203	.858	34.967	6.092	1.772
720.	34.972	6.025	5.959	27.548	36.638	31.217	.866	34.970	6.025	1.889
740.	34.973	5.930	5.862	27.561	34.707	31.232	.873	34.974	5.928	2.634
760.	34.974	5.877	5.808	27.569	33.411	31.241	.880	34.975	5.879	1.482
780.	34.981	5.755	5.688	27.580	30.641	31.264	.886	34.980	5.765	2.245
800.	34.984	5.697	5.625	27.594	29.133	31.275	.892	34.984	5.692	1.958
820.	34.987	5.604	5.530	27.613	27.124	31.291	.898	34.984	5.604	1.423
840.	34.990	5.531	5.456	27.625	25.301	31.305	.903	34.989	5.535	1.693
860.	34.995	5.462	5.385	27.637	23.507	31.318	.908	34.995	5.460	1.987
880.	34.996	5.412	5.334	27.644	22.195	31.326	.912	34.997	5.407	1.536
900.	35.001	5.336	5.257	27.657	20.274	31.341	.917	35.001	5.331	1.870
920.	35.008	5.242	5.162	27.674	17.877	31.340	.920	35.009	5.248	2.166

OCEAN COLOR & CIRCULATION STATION 7											
DEPTH	SALINITY	NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	LONGITUDE	AVSALIN	AVTEMP	AVG. X 1000
0.	35.465	25.823					28 49.2 N				
10.	35.455	25.862	25.860	21.934	589.468	25.312		.024	33.455	25.862	.000
20.	35.255	26.187	26.183	23.188	469.634	26.555		.066	35.021	26.049	.000
30.	36.044	25.614	25.608	23.901	395.952	27.331		.110	36.039	25.455	22.240
40.	36.354	22.810	22.802	25.034	293.723	28.433		.144	36.349	22.932	21.674
50.	36.397	21.926	21.916	25.319	246.679	28.728		.172	36.349	21.888	17.431
60.	36.413	21.005	20.994	25.506	241.221	29.007		.197	36.402	20.980	11.863
70.	36.400	20.211	20.194	25.791	221.751	29.221		.220	36.405	20.215	10.683
80.	36.413	19.649	19.634	25.949	206.663	29.387		.241	36.391	19.622	9.293
100.	36.354	18.805	18.787	26.123	190.119	29.572		.261	36.356	18.800	6.741
120.	36.334	18.085	18.066	26.290	174.226	29.749		.281	36.337	18.087	6.368
140.	36.290	17.429	17.406	26.417	161.940	29.886		.301	36.284	17.413	5.567
160.	36.214	16.847	16.820	26.499	154.030	29.978		.342	36.217	16.823	4.940
180.	36.163	16.439	16.409	26.557	148.435	30.041		.413	36.166	16.408	3.770
200.	36.041	15.624	15.592	26.652	139.137	30.149		.442	36.037	15.614	4.453
220.	35.868	14.451	14.419	26.774	126.614	30.293		.468	35.868	14.451	5.661

OCEAN COLOR & CIRCULATION STATION 8											
DEPTH	SALINITY	NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	LONGITUDE	AVSALIN	AVTEMP	AVG. X 1000
0.	35.904	25.942					28 42.5 N				
10.	35.899	25.942	25.939	23.750	415.854	27.116		.033	35.907	25.942	.000
20.	36.000	25.916	25.912	23.835	407.916	27.201		.075	35.982	25.924	.000
30.	36.135	26.131	26.124	23.869	404.783	27.233		.115	36.121	26.106	5.254
40.	36.133	26.121	26.112	23.871	404.714	27.235		.156	36.137	26.132	3.612
50.	36.186	24.053	24.043	24.524	342.060	27.915		.195	36.204	24.082	11.697
60.	36.357	21.613	21.601	25.374	261.287	28.749		.225	36.352	21.641	18.495
70.	36.414	19.989	19.976	25.865	214.704	29.248		.249	36.419	19.989	18.613

OCEAN COLOR & CIRCULATION STATION 8-1											
DEPTH	SALINITY	NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	LONGITUDE	AVSALIN	AVTEMP	AVG. X 1000
0.	35.915	25.951					28 42.7 N				
10.	35.913	25.947	25.945	23.754	415.842	27.124		.041	35.921	25.928	.000
20.	36.026	25.905	25.901	23.857	405.742	27.228		.082	36.039	25.932	4.453
30.	36.134	26.071	26.064	23.890	402.733	27.245		.123	36.134	26.060	5.193
40.	36.171	26.126	26.116	23.894	402.118	27.242		.163	36.170	26.121	3.214
50.	36.420	23.636	23.625	24.843	312.003	28.233		.202	36.353	24.083	13.652
60.	36.429	21.425	21.413	25.483	251.066	28.408		.229	36.433	21.414	19.589

OCEAN COLOR & CIRCULATION STATION 8-2											
DEPTH	SALINITY	NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	LONGITUDE	AVSALIN	AVTEMP	AVG. Y 1000
0.	35.443	25.744					28 42.7 N				
10.	35.938	25.842	25.839	23.811	410.087	27.177		.042	35.930	25.841	.000
20.	36.032	25.911	25.907	23.860	405.493	27.226		.083	36.031	25.946	9.783
30.	36.154	26.114	26.107	23.890	402.736	27.254		.123	36.142	26.090	4.516
40.	36.185	26.147	26.138	23.901	401.766	27.246		.164	36.186	26.148	3.244
50.	36.452	22.900	22.890	25.082	289.270	28.440		.199	36.439	22.896	16.434
60.	36.498	20.999	20.987	25.645	235.655	29.063		.225	36.475	21.034	20.398
70.	36.459	20.281	20.268	25.817	219.283	29.248		.248	36.457	20.254	13.462

OCEAN COLOR & CIRCULATION STATION 8-3											
DEPTH	SALINITY	NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	LONGITUDE	AVSALIN	AVTEMP	AVG. Y 1000
0.	36.016	26.130					28 43.0 N				
10.	36.017	26.077	26.074	23.797	411.424	27.160		.041	36.020	26.077	.000
20.	36.021	26.004	26.000	23.823	409.048	27.148		.082	36.020	26.010	3.240
30.	36.091	26.118	26.111	23.840	407.350	27.204		.123	36.075	26.094	3.487
40.	36.124	25.108	25.098	23.864	404.961	27.233		.164	36.138	25.824	2.351
50.	36.445	23.086	23.076	25.023	294.878	28.419		.199	36.393	23.188	18.410
60.	36.470	20.922	20.910	25.652	234.953	29.073		.226	36.441	20.818	20.345
70.	36.477	20.241	20.228	25.842	216.937	29.271		.244	36.465	20.155	14.760

OCEAN COLOR & CIRCULATION STATION 8-4											
DEPTH	SALINITY	NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	LONGITUDE	AVSALIN	AVTEMP	AVG. Y 1000
0.	36.036	26.109					28 43.3 N				
10.	36.029	26.042	26.040	23.817	409.537	27.141		.041	36.029	26.059	.000
20.	36.033	26.030	26.026	23.824	408.939	27.149		.082	36.034	26.032	2.487
30.	36.047	26.040	26.034	23.831	408.401	27.190		.123	36.048	26.048	2.231
40.	36.130	26.144	26.135	23.841	405.631	27.226		.164	36.137	26.051	4.241
50.	36.433	23.382	23.372	24.928	303.961	28.320		.201	36.396	23.663	15.044
60.	36.459	20.946	20.935	25.640	234.235	29.040		.227	36.469	21.038	20.403
70.	36.407	20.075	20.062	25.832	217.761	29.264		.250	36.439	20.006	15.443

OCEAN COLOR & CIRCULATION STATION 8-5												
DEPTH	SALINITY	NOAA SHIP RESEARCHER		RP-17-RE-77		LATITUDE		LONGITUDE		AVSALIN	AVTEMP	AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	DTM HGT.	89 58.2 W				
0.	35.871	25.850										
10.	35.918	25.934	25.951	23.767	414.278	27.133	.008	35.918	25.934			.000
20.	36.076	26.214	26.210	23.798	411.368	27.181	.041	36.057	26.159			.680
30.	36.152	26.073	26.066	23.900	411.793	27.255	.082	36.143	26.071			5.796
40.	36.197	25.917	25.909	24.107	382.182	27.477	.121	36.256	25.137			10.644
50.	36.459	22.888	22.878	25.091	298.372	28.449	.154	36.447	22.949			16.814
60.	36.452	21.592	21.580	25.434	253.867	28.867	.181	36.455	22.153			15.772

OCEAN COLOR & CIRCULATION STATION 8-6												
DEPTH	SALINITY	NOAA SHIP RESEARCHER		RP-17-RE-77		LATITUDE		LONGITUDE		AVSALIN	AVTEMP	AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	DTM HGT.	89 44.4 W				
0.	35.883	25.892										
10.	35.920	25.897	25.895	23.780	412.997	27.146	.041	35.929	25.915			.000
20.	36.018	26.052	26.048	23.805	410.733	27.170	.083	36.022	26.056			3.688
30.	36.136	26.192	26.185	23.850	406.957	27.214	.123	36.118	26.145			4.195
40.	36.174	25.515	25.506	24.090	383.739	27.461	.163	36.210	25.393			9.195
50.	36.461	22.895	22.885	25.091	288.828	28.449	.197	36.443	23.009			16.969

OCEAN COLOR & CIRCULATION STATION 8-7												
DEPTH	SALINITY	NOAA SHIP RESEARCHER		RP-17-RE-77		LATITUDE		LONGITUDE		AVSALIN	AVTEMP	AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	DTM HGT.	89 44.3 W				
0.	34.450	25.526										
10.	35.603	25.904	25.902	23.765	414.467	27.131	.047	35.903	25.904			.000
20.	36.142	26.254	26.250	23.836	407.827	27.198	.088	36.106	26.196			.000
30.	36.149	26.146	26.149	23.862	405.397	27.226	.128	36.149	26.186			5.064
40.	36.402	25.768	25.764	24.027	384.815	27.345	.168	36.202	25.768			7.175
50.	36.481	22.343	22.343	25.250	273.236	28.643	.200	36.470	22.343			16.309
60.	36.482	21.092	21.080	25.614	238.513	29.034	.226	36.460	20.961			20.122

OCEAN COLOR & CIRCULATION STATION 8-8												
DEPTH	SALINITY	NOAA SHIP RESEARCHER		RP-17-RE-77		LATITUDE		LONGITUDE		AVSALIN	AVTEMP	AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	DTM HGT.	89 44.1 W				
0.	35.422	25.734										
10.	35.889	25.878	25.876	23.783	414.681	27.129	.034	35.882	25.879			.000
20.	35.975	25.991	25.947	23.792	411.957	27.158	.075	36.000	26.044			.000
30.	36.124	26.149	26.142	23.856	406.079	27.220	.114	36.123	26.119			5.124
40.	36.353	24.620	24.611	24.499	344.749	27.878	.155	36.315	24.573			12.915
50.	36.450	22.028	22.018	25.330	265.374	28.738	.185	36.447	22.119			16.637
60.	36.446	20.817	20.805	25.662	233.963	29.045	.210	36.433	20.838			16.782
70.	36.469	20.099	20.086	25.873	213.926	29.305	.232	36.427	20.083			11.478

OCEAN COLOR & CIRCULATION STATION 8-9												
DEPTH	SALINITY	NOAA SHIP RESEARCHER		RP-17-RE-77		LATITUDE		LONGITUDE		AVSALIN	AVTEMP	AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	DTM HGT.	89 44.1 W				
0.	35.179	25.733										
10.	35.922	25.950	25.944	23.765	414.485	27.130	.034	35.918	25.960			.000
20.	36.041	26.050	26.045	23.821	409.251	27.145	.075	36.023	26.020			.000
30.	36.149	25.979	25.972	23.927	399.184	27.203	.116	36.144	25.926			6.682
40.	36.374	24.417	24.408	24.576	337.406	27.957	.153	36.359	24.365			13.567
50.	36.459	21.994	21.984	25.347	264.014	28.755	.183	36.456	22.010			16.386
60.	36.508	20.889	20.877	25.690	231.379	29.111	.207	36.468	20.851			16.225

OCEAN COLOR & CIRCULATION STATION 10												
DEPTH	SALINITY	NOAA SHIP RESEARCHER		RP-17-RE-77		LATITUDE		LONGITUDE		AVSALIN	AVTEMP	AVG. X 1000
		TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	DTM HGT.	89 50.1 W				
0.	35.880	26.070										
10.	35.849	26.036	26.035	23.683	422.286	27.044	.042	35.851	26.036			.000
20.	35.834	26.038	26.030	23.672	423.421	27.038	.084	35.834	26.038			-2.295
30.	35.870	26.085	26.078	23.683	422.444	27.049	.127	35.896	26.114			1.688
40.	36.132	25.442	25.433	24.081	384.647	27.452	.164	36.108	25.363			9.914
50.	36.323	21.850	21.840	25.284	269.957	28.694	.201	36.287	22.133			18.921
60.	36.333	20.265	20.253	25.726	227.890	29.155	.226	36.330	20.256			19.998
70.	36.400	19.626	19.613	25.944	206.970	29.343	.248	36.370	19.552			13.674
80.	36.329	18.446	18.431	26.195	183.204	29.648	.267	36.327	18.504			10.175
100.	36.318	18.140	18.123	26.284	174.876	29.722	.303	36.320	18.129			5.975
120.	36.251	17.434	17.414	26.386	164.958	29.854	.337	36.256	17.417			5.587
140.	36.115	16.198	16.176	26.576	146.589	30.043	.364	36.126	16.242			6.654
160.	36.067	15.800	15.774	26.631	141.266	30.124	.397	36.066	15.802			3.798
180.	36.044	15.587	15.558	26.666	137.840	30.163	.425	36.049	15.587			3.422
200.	35.963	15.043	15.012	26.782	132.272	30.227	.452	35.938	14.983			3.787
220.	35.771	13.946	13.946	26.801	124.259	30.323	.477	35.787	14.033			4.59

OCEAN COLOR & CIRCULATION STATION 11-1											
DEPTH	CALCULITY	NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	LONGITUDE	AVSALIN	AVTEMP	AVG. Y 1000
0.	36.343	26.771									
10.	36.341	26.735	26.730	23.833	408.042	27.140	.074	36.341	26.735	.000	
20.	36.343	26.728	26.721	23.837	407.812	27.144	.114	36.343	26.728	.000	
30.	36.344	26.709	26.700	23.844	407.273	27.202	.155	36.353	26.641	.000	
40.	36.355	23.373	23.373	24.860	309.373	28.242	.191	36.357	23.314	15.054	
50.	36.355	22.049	22.057	25.196	278.445	28.665	.220	36.293	22.050	17.466	
60.	36.334	21.437	21.423	25.407	258.719	28.824	.247	36.294	21.893	9.345	

OCEAN COLOR & CIRCULATION STATION 11-2											
DEPTH	CALCULITY	NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	LONGITUDE	AVSALIN	AVTEMP	AVG. Y 1000
0.	36.132	26.451									
10.	36.145	26.777	26.784	23.810	409.243	27.174	.041	36.366	26.784	.000	
20.	36.145	26.722	26.718	23.810	407.404	27.197	.082	36.345	26.725	3.474	
30.	36.145	26.681	26.684	23.850	408.444	27.208	.123	36.344	26.689	2.804	
40.	36.151	26.636	26.627	23.868	405.304	27.223	.163	36.368	26.100	6.025	
50.	36.155	23.252	23.519	24.824	313.424	28.220	.194	36.371	23.579	15.041	
60.	36.284	22.147	22.175	25.150	281.053	28.411	.227	36.291	22.207	16.473	
70.	36.290	21.401	21.387	25.184	260.541	28.411	.255	36.301	21.473	11.473	
80.	36.306	20.310	20.295	25.692	231.165	29.123	.280	36.301	20.302	11.143	
90.	36.354	19.335	19.317	26.000	201.074	29.441	.322	36.384	19.302	9.214	
100.	36.317	18.141	18.120	26.263	176.778	29.722	.360	36.327	18.177	7.474	
110.	36.247	17.213	17.189	26.437	160.041	29.949	.399	36.259	17.243	6.614	
120.	36.114	16.255	16.230	26.565	147.622	30.042	.424	36.114	16.255	5.042	
130.	35.999	15.391	15.363	26.672	137.100	30.172	.452	35.995	15.357	5.269	
140.	35.772	14.578	14.478	26.764	127.608	30.242	.479	35.873	14.529	4.734	
150.	35.763	13.861	13.829	26.823	122.061	30.348	.504	35.719	13.829	4.294	
160.	35.772	13.262	13.229	26.874	116.470	30.412	.524	35.677	13.262	3.413	
170.	35.673	12.626	12.503	26.929	111.151	30.474	.550	35.573	12.626	3.727	
180.	35.446	11.896	11.860	26.974	106.304	30.531	.572	35.445	11.965	3.619	
190.	35.375	11.350	11.312	27.022	101.174	30.589	.593	35.377	11.372	3.254	
200.	35.311	10.846	10.806	27.030	96.044	30.614	.614	35.308	10.970	2.704	
210.	35.236	10.315	10.274	27.064	91.044	30.647	.632	35.242	10.517	2.864	
220.	35.177	10.022	9.980	27.106	86.453	30.687	.651	35.174	10.021	3.021	
230.	35.127	9.623	9.580	27.132	81.264	30.731	.669	35.122	9.624	2.782	
240.	35.172	9.232	9.187	27.157	75.294	30.762	.687	35.074	9.247	2.432	
250.	34.994	8.904	8.854	27.174	69.474	30.740	.703	35.032	8.900	2.454	
260.	34.922	8.616	8.569	27.193	63.847	30.810	.720	34.944	8.614	2.264	
270.	34.847	8.265	8.215	27.208	58.404	30.888	.735	34.865	8.311	2.420	
280.	34.772	7.977	7.927	27.243	53.104	30.947	.751	34.811	8.020	2.443	
290.	34.646	8.076	7.997	27.263	48.044	30.947	.765	34.818	7.777	2.454	
300.	34.715	7.764	7.714	27.263	43.104	30.947	.779	34.900	7.536	2.427	
310.	34.770	7.551	7.499	27.281	38.404	30.919	.794	34.874	7.249	2.470	
320.	34.674	7.226	7.173	27.304	33.804	30.949	.804	34.843	7.011	2.463	
330.	34.664	7.011	6.957	27.330	29.404	31.013	.814	34.859	6.833	2.435	
340.	34.654	6.844	6.786	27.351	25.204	31.143	.830	34.859	6.665	2.418	
350.	34.654	6.633	6.577	27.374	21.204	31.057	.841	34.859	6.495	2.443	
360.	34.654	6.441	6.385	27.394	17.404	31.001	.852	34.863	6.325	2.462	
370.	34.654	6.273	6.215	27.419	13.804	31.111	.862	34.862	6.154	2.457	
380.	34.654	6.145	6.086	27.444	10.404	31.132	.871	34.865	6.002	2.426	
390.	34.654	6.036	5.976	27.464	7.204	31.153	.881	34.871	5.852	2.424	
400.	34.654	5.909	5.847	27.482	4.204	31.173	.890	34.875	5.702	2.472	
410.	34.674	5.801	5.738	27.500	1.404	31.141	.897	34.882	5.552	2.470	
420.	34.674	5.719	5.654	27.516	0.804	31.211	.904	34.884	5.402	2.456	
430.	34.674	5.614	5.548	27.534	0.404	31.233	.911	34.894	5.252	2.422	
440.	34.674	5.494	5.427	27.555	0.204	31.294	.918	34.894	5.102	2.446	
450.	34.674	5.374	5.305	27.572	0.104	31.270	.924	34.904	4.952	2.422	
460.	34.674	5.254	5.184	27.584	0.004	31.241	.930	34.907	4.802	2.457	
470.	34.674	5.154	5.084	27.596	0.004	31.244	.934	34.911	4.652	2.472	
480.	34.674	5.054	4.984	27.617	0.004	31.315	.940	34.914	4.502	2.455	
490.	34.674	4.954	4.884	27.632	0.004	31.332	.945	34.922	4.352	2.424	
500.	34.674	4.854	4.784	27.647	0.004	31.334	.945	34.926	4.202	2.444	
510.	34.674	4.754	4.684	27.655	0.004	31.348	.953	34.930	4.052	2.470	
520.	34.674	4.654	4.584	27.667	0.004	31.362	.956	34.934	3.902	2.470	

OCEAN COLOR & CIRCULATION STATION 11-4											
DEPTH	CALCULITY	NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	LONGITUDE	AVSALIN	AVTEMP	AVG. Y 1000
0.	36.294	26.665									
10.	36.300	26.669	26.667	23.830	408.227	27.147	.041	36.310	26.666	.000	
20.	36.304	26.649	26.644	23.834	407.751	27.144	.082	36.305	26.638	2.174	
30.	36.293	26.526	26.517	23.864	405.254	27.223	.122	36.297	26.535	2.801	
40.	36.287	26.482	26.473	23.874	404.846	27.233	.163	36.287	26.480	3.100	
50.	36.354	23.794	23.784	24.754	320.876	28.139	.201	36.343	24.350	13.106	
60.	36.270	22.371	22.359	25.096	287.930	28.322	.231	36.273	22.311	17.125	
70.	36.242	21.145	21.132	25.414	257.244	28.836	.259	36.251	21.176	14.285	
80.	36.286	20.340	20.335	25.667	233.542	29.047	.283	36.275	20.349	11.783	
90.	36.339	19.342	19.324	25.973	204.414	29.416	.322	36.320	19.302	8.470	
100.	36.279	18.366	18.344	26.177	184.044	29.633	.366	36.281	18.365	7.079	

OCEAN COLOR & CIRCULATION STATION 12											
DEPTH	CALCULITY	NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	LATITUDE	LONGITUDE	AVSALIN	AVTEMP	AVG. Y 1000
0.	36.321	27.413									
10.	36.257	27.412	27.410	23.544	435.101	28.848	.043	36.257	27.412	.000	
20.	36.271	27.354	27.349	23.586	431.686	28.936	.087	36.271	27.368	-2.158	
30.	36.289	27.333	27.326	23.602	430.247	28.943	.130	36.284	27.335	3.427	
40.	36.250	27.224	27.214	23.608	429.744	28.942	.173	36.297	26.730	7.394	
50.	36.258	23.062	23.052	24.884	307.680	28.285	.204	36.266	23.041	17.722	
60.	36.294	22.108	22.096	25.189	279.109	28.597	.237	36.298	22.108	14.427	
70.	36.351	21.177	21.163	25.492	250.242	28.911	.264	36.343	21.180	11.894	
80.	36.388	20.649	20.634	25.664	233.908	29.090	.288	36.365	20.679	10.227	
90.	36.394	19.934	19.916	25.863	214.948	29.299	.333	36.405	19.911	7.490	
100.	36.355	18.186	18.182	26.240	174.201	29.740	.410	36.342	18.044	8.016	
110.	36.292	17.241	17.214	26.427	161.046	29.849	.441	36.242	17.241	8.003	

OCEAN COLOR & CIRCULATION STATION 13										
DEPTH	SALINITY	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	CIRCU-P	DTM HGT.	AVSALIN	AVTEMP	AVG. X 1000
0.	36.355	27.421								
10.	36.354	27.403	27.403	23.62A	427.515	28.977	.043	36.351	27.403	.000
20.	36.353	27.363	27.348	23.641	424.466	28.981	.085	36.353	27.348	2.706
30.	36.251	27.356	27.349	23.641	426.428	28.942	.12R	36.353	27.358	2.139
40.	36.300	27.382	27.372	23.692	421.765	27.043	.171	36.421	27.273	6.495
50.	36.282	24.001	23.009	24.616	333.671	28.013	.210	36.30A	28.624	18.494
60.	36.251	22.470	22.458	25.051	292.089	28.448	.242	36.252	22.571	17.754
70.	36.298	21.177	21.164	25.452	251.155	28.872	.260	36.293	21.206	15.36A
80.	36.297	20.752	20.737	25.567	243.154	28.902	.293	36.294	20.695	11.600
100.	36.35A	19.542	19.524	25.934	208.040	29.376	.338	36.353	19.537	9.191
120.	36.390	19.258	19.237	26.034	198.708	29.479	.379	36.38A	19.258	5.886
140.	36.333	18.366	18.363	26.21A	181.10A	29.675	.417	36.339	18.377	6.774
160.	36.328	17.962	17.944	26.315	171.704	29.778	.452	36.329	17.946	4.077
180.	36.37A	17.294	17.274	26.437	160.111	29.919	.465	36.272	17.301	5.322
200.	36.217	16.875	16.842	26.495	154.49A	29.974	.517	36.213	16.801	3.923
220.	36.240	15.818	15.781	26.614	142.720	30.119	.547	36.059	15.868	5.557
240.	35.657	15.144	15.112	26.644	134.624	30.149	.574	35.955	15.133	4.476
260.	35.66A	14.593	14.544	26.761	128.073	30.277	.601	35.860	14.504	4.486

OCEAN COLOR & CIRCULATION STATION 14										
DEPTH	SALINITY	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	CIRCU-P	DTM HGT.	AVSALIN	AVTEMP	AVG. X 1000
0.	36.331	27.345								
10.	36.427	27.305	27.305	23.6A5	422.113	27.033	.042	36.427	27.399	.000
20.	36.420	27.396	27.391	23.6A7	422.011	27.030	.084	36.420	27.397	-1.543
30.	36.445	27.375	27.348	23.70A	420.31A	27.040	.127	36.445	27.373	2.453
40.	36.464	27.353	27.344	23.727	418.427	27.07E	.18A	36.461	27.327	3.415
50.	36.394	25.956	24.089	24.089	383.00A	27.445	.209	36.343	25.759	10.286
60.	36.359	23.336	23.424	24.033	315.08A	28.148	.244	36.248	23.327	15.453
70.	36.277	21.786	21.784	25.252	273.095	28.665	.273	36.259	21.777	16.409
80.	36.277	20.956	20.944	25.497	289.823	28.919	.290	36.276	20.936	13.282
100.	36.232	19.491	19.463	25.874	213.445	29.318	.345	36.327	19.490	9.645
120.	36.134	18.931	18.904	26.075	194.717	29.524	.386	36.329	18.911	7.012
140.	36.117	18.222	18.100	26.23A	179.145	29.697	.424	36.324	18.255	6.333
160.	36.230	17.389	17.362	26.388	164.771	29.849	.458	36.242	17.429	5.8P5
180.	36.187	16.635	16.605	26.516	152.576	29.946	.490	36.16A	16.636	5.739
200.	36.101	15.867	15.835	26.610	142.341	30.111	.519	36.100	15.976	5.049
220.	35.780	15.222	15.187	26.703	134.077	30.266	.550	35.990	15.222	4.670
240.	35.500	14.611	14.604	26.757	128.443	30.271	.573	35.890	14.619	4.265
260.	35.78A	13.957	13.919	26.814	122.418	30.340	.598	35.783	13.974	3.805
280.	35.74A	13.422	13.382	26.865	117.509	30.348	.622	35.695	13.415	3.464
300.	35.750	13.043	13.011	26.913	112.611	30.442	.645	35.659	13.043	3.444

OCEAN COLOR & CIRCULATION STATION 15										
DEPTH	SALINITY	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	CIRCU-P	DTM HGT.	AVSALIN	AVTEMP	AVG. X 1000
0.	36.354	27.316								
10.	36.447	27.319	27.314	23.734	417.479	27.083	.042	36.43A	27.319	.000
20.	36.451	27.323	27.311	23.727	418.183	27.077	.083	36.450	27.318	-1.314
30.	36.435	27.294	27.287	23.722	418.773	27.073	.125	36.430	27.295	-1.443
40.	36.411	27.273	27.263	23.711	419.421	27.065	.167	36.410	27.270	-1.66A
50.	36.231	23.832	23.821	24.844	331.128	28.031	.207	36.287	24.449	13.403
60.	36.242	22.954	22.940	24.937	304.113	28.330	.239	36.242	22.473	17.167
70.	36.209	21.704	21.694	25.24A	273.745	28.650	.267	36.207	21.676	13.45A
80.	36.122	21.477	21.461	25.387	260.354	28.843	.294	36.321	21.425	10.653
100.	36.120	20.194	20.147	25.740	225.804	29.1A1	.342	36.312	20.066	9.177
120.	36.100	18.646	18.627	26.12P	189.420	29.581	.384	36.307	18.611	9.490
140.	36.206	17.986	17.964	26.285	174.774	29.740	.420	36.287	17.938	6.411
160.	36.217	16.933	16.906	26.441	155.77A	29.958	.453	36.20A	16.915	6.407
180.	36.180	16.000	15.986	26.610	143.282	30.102	.481	36.085	15.955	5.714
200.	36.109	15.385	15.358	26.674	136.425	30.175	.511	36.000	15.386	4.122
220.	35.869	14.531	14.478	26.762	128.164	30.270	.537	35.88A	14.525	4.449
240.	35.784	14.005	13.970	26.800	123.136	30.332	.563	35.780	14.021	3.794
260.	35.711	13.547	13.510	26.844	119.247	30.379	.587	35.714	13.553	3.249
280.	35.636	13.012	12.973	26.901	113.445	30.440	.610	35.631	13.018	3.462
300.	35.508	12.278	12.248	26.94A	10A.807	30.499	.632	35.511	12.308	3.569
320.	35.554	11.870	11.846	26.988	104.833	30.543	.654	35.458	11.886	3.263
340.	35.440	11.729	11.729	26.999	103.529	30.556	.675	35.444	11.771	1.766
360.	35.410	11.565	11.519	27.000	101.417	30.574	.695	35.411	11.577	1.78A
380.	35.374	11.284	11.216	27.037	98.786	30.607	.714	35.360	11.233	2.49A
400.	35.260	10.635	10.586	27.069	94.499	30.651	.735	35.274	10.646	3.427
420.	35.171	9.913	9.864	27.110	89.174	30.714	.753	35.174	9.934	3.605
440.	35.174	9.853	9.802	27.132	87.679	30.728	.771	35.172	9.842	1.011
460.	35.145	9.617	9.584	27.186	85.744	30.746	.78A	35.145	9.633	2.065
480.	35.120	9.437	9.411	27.165	83.442	30.749	.805	35.120	9.425	2.084
500.	35.173	8.906	8.843	27.204	7A.8P1	30.816	.822	35.073	8.948	3.472

DEPTH	SALINITY	OCEAN COLOR & CIRCULATION					STATION 16			AVG. X 1000
		NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	LONGITUDE	AVSALIN	
0.	36.326	26.841								
10.	36.312	26.757	26.754	23.805	410.697	27.140	.033	36.313	26.761	.000
20.	36.296	26.743	26.738	23.789	412.290	27.145	.074	36.286	26.742	.000
30.	36.277	26.753	26.746	23.790	413.994	27.137	.115	36.278	26.752	-2.172
40.	36.305	26.744	26.735	23.803	411.156	27.161	.157	36.283	26.251	6.134
50.	36.304	23.619	23.608	24.764	319.598	28.144	.192	36.303	23.712	15.167
60.	36.311	22.708	22.735	25.020	295.239	28.421	.223	36.316	22.755	16.148
70.	36.316	22.054	22.040	25.221	276.130	28.630	.251	36.320	21.887	11.424
80.	36.360	21.027	21.007	25.541	245.652	28.962	.277	36.362	21.042	11.183
100.	36.372	20.856	20.836	25.596	240.509	29.020	.326	36.374	20.846	3.496
120.	36.387	19.811	19.788	25.872	214.189	29.310	.371	36.383	19.834	7.492
140.	36.359	19.226	19.201	26.019	200.208	29.445	.413	36.365	19.243	6.184
160.	36.375	18.924	18.896	26.109	191.635	29.560	.452	36.373	18.922	4.689
180.	36.390	18.155	18.124	26.276	175.952	29.737	.489	36.335	18.181	6.251
200.	36.290	17.212	17.179	26.431	160.540	29.906	.523	36.252	17.224	6.487
220.	36.084	16.065	16.030	26.586	145.464	30.076	.553	36.094	16.089	6.170
240.	35.904	14.812	14.776	26.730	131.224	30.241	.581	35.912	14.809	5.760
260.	35.492	14.208	14.169	26.840	119.551	30.369	.607	35.492	14.208	5.928
280.	35.774	13.976	13.935	26.809	123.118	30.333	.631	35.776	13.976	4.486
300.	35.700	13.500	13.457	26.850	114.786	30.383	.655	35.713	13.536	3.490
320.	35.430	13.053	13.008	26.888	114.815	30.428	.674	35.424	13.033	3.014
340.	35.515	12.113	12.068	26.985	104.790	30.541	.700	35.503	12.048	4.482

DEPTH	SALINITY	OCEAN COLOR & CIRCULATION					STATION 16-1			AVG. X 1000
		NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	LONGITUDE	AVSALIN	
0.	36.381	26.840								
10.	36.365	26.809	26.807	23.827	408.576	27.142	.033	36.374	26.833	.000
20.	36.375	26.753	26.740	23.844	406.445	27.215	.073	36.375	26.743	.000
30.	36.395	26.746	26.736	23.862	404.834	27.225	.114	36.393	26.736	5.181
40.	36.410	26.730	26.721	23.892	402.714	27.249	.154	36.403	26.730	5.769
50.	36.442	23.361	23.351	24.441	302.892	28.334	.189	36.423	23.315	16.110
60.	36.316	22.524	22.512	25.084	284.760	28.491	.219	36.374	22.522	16.749
70.	36.340	22.077	22.063	25.232	276.084	28.642	.247	36.337	21.873	9.144

DEPTH	SALINITY	OCEAN COLOR & CIRCULATION					STATION 17			AVG. X 1000
		NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	SIGMA-P	LONGITUDE	AVSALIN	
0.	36.286	26.839								
10.	36.144	28.489	28.447	23.115	476.574	26.454	.034	36.153	28.444	.000
20.	36.158	28.449	28.445	23.138	474.463	26.478	.086	36.154	28.451	.000
30.	36.166	28.420	28.412	23.154	473.033	26.498	.133	36.165	28.424	2.447
40.	36.169	28.402	28.393	23.162	472.418	26.504	.180	36.168	28.403	2.471
50.	36.185	28.386	28.374	23.165	472.301	26.508	.224	36.184	28.384	1.870
60.	36.173	28.360	28.372	23.170	471.869	26.515	.275	36.172	28.383	1.448
70.	36.180	28.376	28.360	23.179	471.198	26.526	.322	36.177	28.375	1.017
80.	36.177	28.325	28.304	23.194	469.892	26.530	.369	36.174	28.277	3.270
100.	36.223	27.089	27.062	23.631	428.500	26.900	.416	36.225	27.141	9.424
120.	36.365	26.170	26.143	24.030	390.351	27.349	.462	36.367	26.169	10.444
140.	36.713	24.594	24.565	24.770	319.036	28.143	.612	36.719	24.594	13.242
160.	36.877	23.539	23.515	25.214	277.249	28.614	.671	36.872	23.506	10.465
180.	36.815	22.420	22.147	25.624	238.205	29.039	.722	36.815	22.220	9.930
200.	36.847	20.784	20.762	25.977	218.563	29.245	.767	36.843	21.437	7.458
220.	36.762	19.987	19.942	26.126	190.566	29.406	.814	36.844	20.810	5.418
240.	36.691	19.446	19.398	26.215	181.944	29.508	.867	36.760	19.496	6.164
260.	36.600	18.702	18.652	26.337	170.134	29.706	.922	36.691	18.439	4.466
300.	36.434	17.890	17.834	26.406	163.407	29.872	.955	36.602	18.708	5.494
320.	36.440	17.890	17.834	26.450	159.154	29.920	.991	36.530	18.212	4.386
340.	36.431	17.560	17.502	26.494	154.834	29.949	1.019	36.480	17.890	3.310
360.	36.369	16.607	16.544	26.595	150.493	30.015	1.054	36.430	17.541	3.443
380.	36.285	16.364	16.298	26.625	146.605	30.085	1.079	36.367	17.184	3.424
400.	36.228	16.364	16.298	26.625	141.625	30.119	1.111	36.265	16.618	3.497
420.	36.134	15.883	15.816	26.667	137.196	30.149	1.136	36.224	16.364	3.215
440.	36.045	15.304	15.235	26.727	131.030	30.237	1.162	36.045	15.308	3.432
460.	35.925	14.625	14.546	26.783	125.024	30.304	1.184	36.140	14.629	3.444
480.	35.835	14.046	14.015	26.831	119.410	30.340	1.212	35.924	14.029	3.929
500.	35.763	13.699	13.626	26.858	116.901	30.343	1.236	35.821	14.020	3.734
520.	35.621	12.879	12.806	26.916	110.396	30.442	1.259	35.762	13.922	2.475
540.	35.586	12.630	12.555	26.930	107.781	30.492	1.281	35.625	12.906	3.927
560.	35.545	12.352	12.276	26.962	105.052	30.520	1.302	35.586	12.622	2.724
580.	35.437	11.717	11.641	27.001	100.432	30.549	1.323	35.437	11.723	2.491
600.	35.395	11.415	11.337	27.025	97.548	30.548	1.342	35.395	11.424	2.407
620.	35.349	11.124	11.045	27.043	95.189	30.622	1.362	35.356	11.174	2.174
640.	35.303	10.846	10.886	27.072	91.665	30.657	1.380	35.304	10.781	2.490
660.	35.283	10.616	10.535	27.084	90.127	30.672	1.399	35.280	10.602	1.990
680.	35.203	10.081	10.000	27.116	85.995	30.739	1.414	35.207	10.086	3.171
700.	35.171	9.835	9.753	27.137	83.297	30.753	1.433	35.173	9.798	2.600
720.	35.031	8.866	8.786	27.164	76.874	30.802	1.449	35.035	8.859	3.481
740.	34.997	8.322	8.243	27.242	70.032	30.870	1.464	34.998	8.336	3.472
760.	34.967	7.983	7.903	27.271	66.282	30.905	1.477	34.966	7.969	2.494
780.	34.901	7.362	7.284	27.310	60.444	30.956	1.490	34.900	7.356	1.453
800.	34.904	7.273	7.194	27.327	58.749	30.974	1.502	34.906	7.275	2.138
820.	34.906	7.237	7.155	27.332	57.807	30.980	1.514	34.906	7.229	1.390
840.	34.903	7.052	6.970	27.356	54.710	31.008	1.525	34.903	7.044	2.614
860.	34.910	6.928	6.844	27.374	51.858	31.033	1.535	34.913	6.931	2.489
880.	34.915	6.723	6.638	27.410	47.936	31.064	1.545	34.914	6.728	2.819
900.	34.894	6.425	6.340	27.438	44.163	31.102	1.554	34.911	6.428	3.322
920.	34.916	6.121	6.036	27.492	37.470	31.142	1.562	34.917	6.115	3.444
940.	34.930	5.760	5.676	27.544	31.094	31.225	1.569	34.931	5.763	3.424
960.	34.952	5.504	5.420	27.598	25.267	31.279	1.579	34.949	5.505	3.347
980.	34.950	5.440	5.354	27.605	23.960	31.247	1.580	34.950	5.311	2.656

DEPTH	LATITUDE	OCEAN COLOR & CIRCULATION				STATION 18		AVSALIN	AVTEMP	AVG. X 1000
		NOAA SHIP RESEARCHER	PP-17-RE-77	LATITUDE	21 48.9 N	LONGITUDE	85 14.7 W			
U.	36.263	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	CIRCU-P	DT. MGT.			
10.	36.263	28.521	28.568	23.177	470.613	26.515	.019	36.264	28.577	.000
20.	36.262	28.527	28.523	23.191	469.433	26.530	.006	36.262	28.528	.000
30.	36.261	28.505	28.499	23.197	468.940	26.537	.113	36.261	28.502	2.877
40.	36.267	28.463	28.453	23.216	467.288	26.547	.160	36.267	28.465	2.617
50.	36.267	28.444	28.432	23.221	466.874	26.546	.206	36.267	28.450	2.445
60.	36.269	28.433	28.419	23.226	466.538	26.570	.253	36.267	28.435	1.740
70.	36.263	28.413	28.406	23.229	466.360	26.574	.345	36.264	28.393	2.206
80.	36.269	27.844	27.666	23.473	483.195	26.825	.000	36.270	27.747	7.478
100.	36.342	26.812	26.749	23.810	411.226	27.171	.431	36.344	26.832	9.248
140.	36.464	25.07	25.045	26.598	336.289	27.978	.582	36.473	25.044	12.271
160.	36.700	23.796	23.762	25.077	290.756	28.470	.645	36.792	23.825	10.540
180.	36.884	22.919	22.882	25.406	259.462	28.819	.700	36.885	22.956	8.404
200.	36.914	21.995	21.955	25.694	231.919	29.109	.750	36.915	22.021	8.424
220.	36.494	21.186	21.143	25.902	212.143	29.327	.794	36.494	21.191	7.284
240.	36.482	20.637	20.591	26.002	202.561	29.434	.835	36.482	20.632	5.965
260.	36.707	19.710	19.662	26.281	175.607	29.602	.874	36.708	19.711	6.200
280.	36.407	18.942	18.892	26.454	167.548	29.602	.911	36.410	18.956	5.415
300.	36.457	18.442	18.444	26.454	168.116	29.820	.945	36.455	18.469	4.447
320.	36.431	17.716	17.661	26.455	158.439	29.928	.978	36.433	17.751	4.910
340.	36.331	17.129	17.072	26.522	151.936	30.003	1.009	36.331	17.123	6.240
360.	36.255	16.674	16.614	26.572	146.446	30.061	1.039	36.259	16.683	3.597
380.	36.191	16.242	16.230	26.612	142.766	30.107	1.067	36.191	16.283	3.428
400.	36.112	15.843	15.779	26.656	138.291	30.147	1.095	36.111	15.836	3.445
420.	35.791	15.180	15.115	26.713	132.345	30.224	1.123	35.796	15.201	3.837
440.	35.715	14.706	14.639	26.759	127.868	30.278	1.144	35.708	14.680	3.586
460.	35.484	14.425	14.356	26.797	123.402	30.320	1.174	35.490	14.457	2.990
480.	35.707	13.590	13.521	26.837	118.407	30.374	1.194	35.709	13.598	1.497
500.	35.726	13.092	13.021	26.877	114.472	30.422	1.221	35.722	13.060	3.446
520.	35.511	12.431	12.360	26.924	109.106	30.440	1.247	35.522	12.439	3.498
540.	35.404	12.252	12.179	26.949	107.070	30.501	1.265	35.497	12.265	2.075
560.	35.403	11.849	11.764	26.974	103.214	30.542	1.288	35.400	11.679	3.280
580.	35.358	11.254	11.140	27.026	97.447	30.662	1.306	35.356	11.251	3.460
600.	35.307	10.904	10.829	27.047	94.740	30.629	1.325	35.310	10.925	2.619
620.	35.194	10.275	10.200	27.075	90.970	30.684	1.344	35.200	10.298	2.900
640.	35.125	9.765	9.690	27.100	86.705	30.711	1.362	35.129	9.768	3.258
660.	35.060	9.354	9.278	27.134	83.365	30.743	1.379	35.073	9.361	2.581
680.	35.077	8.928	8.852	27.135	80.428	30.771	1.394	35.014	8.931	2.888
700.	34.950	8.496	8.420	27.146	75.334	30.822	1.411	34.944	8.466	3.166
720.	34.939	8.213	8.137	27.213	72.806	30.843	1.425	34.930	8.218	2.383
740.	34.931	8.131	8.053	27.222	71.575	30.854	1.430	34.930	8.131	1.645
760.	34.711	7.921	7.842	27.234	69.441	30.872	1.454	34.912	7.932	2.445
780.	34.604	7.845	7.764	27.244	68.043	30.883	1.468	34.909	7.848	1.683
800.	34.688	7.644	7.566	27.256	66.109	30.887	1.481	34.889	7.665	1.922
820.	34.471	7.354	7.275	27.287	62.253	30.934	1.494	34.872	7.373	2.373
840.	34.431	6.774	6.697	27.337	55.836	30.945	1.506	34.835	6.805	3.864
860.	34.436	6.545	6.464	27.367	52.137	31.026	1.517	34.838	6.576	3.443
880.	34.649	6.458	6.376	27.411	47.288	31.074	1.527	34.871	6.454	3.374
900.	34.472	6.264	6.181	27.438	43.704	31.105	1.536	34.871	6.279	2.587
920.	34.464	6.140	6.075	27.440	42.003	31.118	1.544	34.868	6.183	1.912
940.	34.441	5.947	5.922	27.466	39.597	31.139	1.553	34.863	5.981	2.408
960.	34.440	5.860	5.773	27.505	36.986	31.140	1.560	34.849	5.845	3.160
980.	34.401	5.659	5.572	27.534	31.234	31.213	1.567	34.895	5.660	2.812
1000.	34.405	5.458	5.371	27.567	27.055	31.250	1.573	34.905	5.481	2.493

DEPTH	LATITUDE	OCEAN COLOR & CIRCULATION				STATION 19		AVSALIN	AVTEMP	AVG. X 1000
		NOAA SHIP RESEARCHER	PP-17-RE-77	LATITUDE	21 48.5 N	LONGITUDE	85 34.9 W			
U.	36.174	TEMPERATURE	POTEMP	SIGMA-T	SVANOM	CIRCU-P	DT. MGT.			
10.	36.174	28.477	28.466	23.145	473.447	26.445	.019	36.164	28.414	.000
20.	36.134	28.216	28.211	23.200	468.534	26.543	.066	36.140	28.222	.000
30.	36.135	28.174	28.167	23.212	467.470	26.556	.113	36.138	28.179	3.454
40.	36.154	28.177	28.168	23.226	466.244	26.571	.159	36.158	28.184	2.664
50.	36.211	28.242	28.230	23.246	464.942	26.541	.204	36.211	28.245	2.909
60.	36.209	28.204	28.140	23.258	463.538	26.603	.252	36.213	28.171	3.437
70.	36.254	27.818	27.801	23.420	468.155	26.770	.298	36.252	27.835	6.375
80.	36.277	27.649	27.630	23.490	441.511	26.843	.342	36.280	27.653	7.326
100.	36.324	27.271	27.248	23.652	426.324	27.009	.429	36.334	27.246	6.539
120.	36.494	26.242	26.214	24.107	383.075	27.474	.510	36.508	26.288	10.276
140.	36.800	24.302	24.272	24.933	304.339	28.370	.581	36.741	24.359	13.930
160.	36.824	23.240	23.207	25.303	269.162	28.702	.637	36.869	23.271	9.733
180.	36.913	21.954	21.913	25.704	245.766	28.957	.689	36.927	22.529	7.444
200.	36.492	21.256	21.212	25.881	214.119	29.119	.736	36.917	21.982	6.042
240.	36.775	20.252	20.206	26.065	196.431	29.502	.781	36.890	21.252	6.722
260.	36.681	19.516	19.468	26.184	184.494	29.636	.822	36.671	20.292	6.450
280.	36.563	18.659	18.609	26.320	171.792	29.779	.866	36.566	18.686	5.663
300.	36.497	18.139	18.087	26.401	163.425	29.847	.929	36.497	18.149	4.469
320.	36.440	17.819	17.763	26.437	160.357	29.908	.962	36.439	17.811	3.160
340.	36.373	17.322	17.230	26.507	153.437	29.946	.993	36.356	17.248	4.084
360.	36.227	16.564	16.504	26.577	146.338	30.007	1.023	36.221	16.326	3.156
380.	36.132	15.957	15.896	26.645	139.413	30.144	1.051	36.125	15.824	4.284
400.	36.006	15.268	15.206	26.705	133.204	30.215	1.079	36.012	15.307	3.913
420.	35.466	14.488	14.425	26.769	126.506	30.290	1.105	35.865	14.480	4.434
440.	35.467	13.887	13.823	26.821	120.924	30.352	1.129	35.763	13.871	3.728
460.	35.638	13.189	13.104	26.870	115.473	30.413	1.153	35.646	13.194	3.497
480.	35.666	12.667	12.601	26.914	110.513	30.467	1.176	35.564	12.654	3.420
500.	35.667	12.097	12.031	26.951	106.370	30.512	1.197	35.471	12.104	3.156
520.	35.454	11.935	11.866	26.972	104.011	30.536	1.214	35.444	11.822	2.326
540.	35.396	11.655	11.584	26.981	102.637	30.549	1.241	35.396	11.655	2.146
560.	34.845	6.688	6.610	27.360	53.030	31.019	1.517	34.846	6.693	10.684
580.	34.850	6.492	6.413	27.390	50.185	31.053	1.528	34.849	6.449	2.866
600.	34.850	6.330	6.250	27.412	47.295	31.078	1.537	34.852	6.335	2.547
620.	34.857	6.197	6.116	27.435	44.334	31.103	1.547	34.857	6.201	2.416
640.	34.865	6.044	5.968	27.461	41.009	31.133	1.555	34.865	6.054	2.630
660.	34.476	5.764	5.538	27.530	37.447	31.142	1.564	34.874	5.773	3.472
680.	34.485	5.621	5.440	27.545	36.345	31.220	1.576	34.882	5.632	2.580
700.	34.488	5.524	5.290	27.571	26.947	31.255	1.582	34.899	5.370	2.229
720.	34.498	5.375	5.115	27.603	22.897	31.291	1.587	34.912	5.202	2.400

DEPTH	CALINITY	NOAA SHIP RESEARCHER			OCEAN COLOR & CIRCULATION			STATION 23			86	6.0	AVG. Y 1000
		TEMPERATURE	POTEMP	RP-17-RE-77	SIGMA-T	SVANOM	CIGMA-P	DTN HGT.	AVSALIN	AVTEMP			
12.	36.152	28.975	28.967	22.960	491.392	20.295	.010	36.152	28.970	.000			
20.	36.161	28.893	28.888	22.992	488.379	20.329	.049	36.160	28.907	.000			
30.	36.158	28.878	28.871	22.995	488.263	20.332	.098	36.159	28.876	3.149			
40.	36.160	28.850	28.841	23.006	487.316	20.341	.147	36.163	28.846	2.507			
50.	36.169	28.772	28.760	23.039	484.291	20.379	.195	36.171	28.762	3.495			
60.	36.215	27.947	27.933	23.346	455.044	20.694	.242	36.211	27.847	9.723			
70.	36.297	26.782	26.766	23.785	413.205	21.145	.286	36.280	26.833	13.126			
80.	36.354	24.126	24.108	24.036	389.377	21.403	.326	36.353	26.167	12.714			
100.	36.555	25.158	25.136	24.408	346.409	21.805	.401	36.538	25.202	10.766			
120.	36.795	23.700	23.674	23.109	287.320	20.501	.466	36.782	23.778	12.201			
140.	36.921	22.330	22.302	22.502	240.402	19.009	.514	36.911	22.312	11.274			
160.	36.911	21.338	21.307	21.873	214.614	17.292	.563	36.894	21.268	8.270			
180.	36.793	20.393	20.358	20.041	187.498	15.473	.604	36.790	20.394	6.277			
200.	36.720	19.776	19.709	20.154	187.296	13.599	.643	36.724	19.771	5.359			
220.	36.586	18.758	18.719	20.312	172.441	11.757	.678	36.594	18.787	6.232			
240.	36.420	18.400	18.354	20.352	168.531	9.813	.712	36.520	18.400	3.652			
260.	36.444	17.925	17.840	20.414	162.482	7.882	.744	36.447	17.941	3.476			
280.	36.362	17.351	17.304	20.491	154.451	5.967	.774	36.374	17.445	4.341			
300.	36.175	16.285	16.236	20.602	143.895	4.043	.804	36.187	16.367	5.394			
320.	35.452	14.979	14.930	20.728	119.846	2.127	.831	35.469	14.978	5.877			
340.	35.753	13.759	13.709	20.834	131.183	0.239	.856	35.951	14.978	5.877			
360.	35.721	13.529	13.478	20.862	107.367	0.367	.881	35.752	13.766	5.290			
380.	35.604	12.857	12.804	20.910	117.518	0.305	.908	35.721	13.526	2.643			
400.	35.459	12.009	11.957	20.961	106.329	0.520	.929	35.607	12.871	3.414			
420.	35.393	11.574	11.524	20.993	102.747	0.549	.959	35.392	12.066	3.787			
440.	35.280	10.877	10.823	21.041	97.274	0.624	.970	35.290	10.888	3.159			
460.	35.222	10.406	10.350	21.074	93.447	0.640	.989	35.223	10.407	3.019			
480.	35.169	10.011	9.954	21.101	90.120	0.645	1.008	35.165	9.992	2.777			
500.	35.087	9.420	9.364	21.137	85.784	0.701	1.025	35.085	9.415	3.196			
520.	35.039	9.017	8.959	21.165	82.257	0.777	1.042	35.040	9.036	2.750			
540.	35.014	8.780	8.722	21.184	79.477	0.800	1.058	35.014	8.780	2.467			
560.	34.979	8.494	8.436	21.201	77.451	0.823	1.074	34.979	8.494	2.420			
580.	34.971	8.236	8.177	21.241	74.982	0.867	1.089	34.976	8.237	3.032			
600.	34.954	7.972	7.913	21.264	69.651	0.889	1.103	34.972	8.013	2.890			
620.	34.942	7.553	7.494	21.294	66.007	0.934	1.117	34.955	7.739	2.754			
640.	34.976	6.945	6.887	21.314	63.786	0.954	1.130	34.944	7.501	2.251			
660.	34.945	6.553	6.495	21.349	59.000	1.001	1.142	34.973	6.987	2.464			
680.	34.944	6.353	6.295	21.379	55.004	1.037	1.154	34.945	6.551	3.260			
700.	34.970	6.149	6.091	21.404	51.806	1.067	1.164	34.945	6.301	3.197			
720.	34.976	5.909	5.851	21.427	47.029	1.113	1.174	34.964	6.209	3.452			
740.	34.994	5.844	5.786	21.447	42.164	1.159	1.182	34.990	5.850	2.190			
760.	34.994	5.844	5.786	21.447	38.400	1.179	1.194	34.994	5.813	2.359			
780.	34.994	5.844	5.786	21.447	34.109	1.190	1.207	34.994	5.800	2.474			
800.	34.994	5.844	5.786	21.447	30.345	1.211	1.213	34.905	5.490	1.837			
820.	34.916	5.454	5.395	21.497	27.420	1.240	1.225	34.916	5.458	2.317			
840.	34.926	5.349	5.290	21.527	24.424	1.241	1.231	34.932	5.300	1.804			
860.	34.933	5.305	5.246	21.564	21.527	1.211	1.236	34.937	5.196	2.135			
880.	34.944	5.065	4.984	21.624	20.771	1.233	1.240	34.944	5.070	2.405			
900.	34.956	4.908	4.827	21.664	18.423	1.252	1.244	34.956	4.976	2.114			
920.	34.955	4.857	4.776	21.664	16.471	1.241	1.251	34.956	4.820	1.458			
940.	34.958	4.788	4.707	21.687	15.444	1.271	1.254	34.960	4.792	1.795			

DEPTH	CALINITY	NOAA SHIP RESEARCHER			OCEAN COLOR & CIRCULATION			STATION 24			86	6.0	AVG. Y 1000
		TEMPERATURE	POTEMP	RP-17-RE-77	SIGMA-T	SVANOM	CIGMA-P	DTN HGT.	AVSALIN	AVTEMP			
12.	36.354	27.414	27.417	23.623	428.027	20.972	.026	36.355	27.418	.000			
20.	36.377	27.179	27.174	23.714	419.078	21.070	.068	36.370	27.214	.000			
30.	36.385	26.908	26.901	23.811	410.298	21.160	.110	36.383	26.897	6.804			
40.	36.409	26.701	26.692	23.896	402.344	21.243	.150	36.407	26.713	6.827			
50.	36.370	25.568	25.561	24.223	371.206	21.503	.190	36.369	25.543	10.043			
60.	36.297	23.431	23.419	24.811	315.178	20.204	.224	36.300	23.376	15.054			
70.	36.104	21.920	21.906	25.250	273.356	18.641	.253	36.300	21.970	15.482			
80.	36.134	20.949	20.933	25.541	245.594	18.944	.274	36.320	20.968	12.984			
100.	36.306	19.375	19.357	25.940	207.617	17.342	.324	36.302	19.386	9.462			
120.	36.320	18.407	18.389	26.199	182.946	16.643	.354	36.321	18.461	7.834			
140.	36.321	17.763	17.749	26.359	167.559	15.924	.394	36.334	17.801	6.543			
160.	36.274	16.986	16.966	26.476	156.281	14.952	.431	36.344	17.020	5.368			
180.	36.105	16.056	16.027	26.601	144.127	14.001	.461	36.101	16.042	5.494			
200.	35.940	14.644	14.617	26.660	137.407	13.108	.489	36.027	14.948	4.415			
220.	35.772	13.997	13.962	26.754	129.023	12.266	.515	35.992	14.657	4.471			
240.	35.726	13.607	13.571	26.800	123.315	11.436	.541	35.764	14.018	3.455			
260.	35.630	13.019	12.980	26.895	119.378	10.377	.565	35.726	13.616	3.079			
280.	35.554	12.506	12.465	26.938	114.417	10.434	.584	35.631	13.014	3.306			
300.	35.407	12.147	12.104	26.961	109.821	10.446	.611	35.555	12.520	2.772			
320.	35.405	11.516	11.472	27.013	101.636	10.579	.632	35.506	12.179	3.378			
340.	35.345	10.702	10.656	27.044	98.207	10.616	.654	35.408	11.500	2.435			
360.	35.284	10.334	10.286	27.069	95.224	10.649	.674	35.351	11.150	2.773			
380.	35.203	9.763	9.715	27.131	90.898	10.696	.693	35.207	10.705	3.196			
400.	35.154	9.412	9.362	27.155	87.408	10.728	.712	35.152	10.162	2.653			
420.	35.108	9.111	9.060	27.178	85.025	10.748	.729	35.108	9.408	2.673			
440.	35.074	8.850	8.798	27.204	82.172	10.818	.747	35.074	9.115	2.884			
460.	35.054	8.780	8.725	27.236	79.070	10.818	.760	35.054	8.858	2.639			
480.	35.080	8.780	8.725	27.236	75.629	10.851	.795	35.080	8.780	2.477			

DEPTH	CALINITY	NOAA SHIP RESEARCHER			OCEAN COLOR & CIRCULATION			STATION 25			86	6.0	AVG. Y 1000
		TEMPERATURE	POTEMP	RP-17-RE-77	SIGMA-T	SVANOM	CIGMA-P	DTN HGT.	AVSALIN	AVTEMP			
10.	36.252	28.172	28.011	23.351	453.962	20.695	.046	36.259	28.034	.000			
20.	36.250	28.013	27.959	23.540	436.047	20.888	.090	36.312	27.609	7.490			
30.	36.314	27.593	27.128	23.739	417.167	21.092	.130	36.329	27.132	13.221			
40.	36.394	26.987	26.974	23.794	412.061	21.149	.171	36.349	26.811	8.759			
50.	36.474	25.480	25.469	24.327	361.229	21.698	.210	36.474	25.544	7.558			
60.	36.583	24.737	24.724	24.607	334.615	21.946	.245	36.527	24.708	13.547			
70.	36.530	23.910	23.895	24.814	314.990	20.202	.277	36.490	23.887	11.169			
80.	36.470	19.884	19.865	25.294	268.793	18.704	.307	36.527	22.484	12.800			
100.	36.669	18.960	18.938	26.324	193.442	17.112	.352	36.664	18.881	14.314			
120.	36.460	17.959	17.934	26.494	171.112	16.771	.388	36.660	18.923	7.782			
140.	36.237	16.361	16.335	26.632	154.876	15.955	.420	36.551	17.945	6.287			
160.	36.074	15.576	15.548	26.687	135.804	15.116	.450	36.237	16.361	6.595			
180.	36.074	15.576	15.548	26.687	135.804	10.144	.478	36.079	15.608	3.758			

DEPTH	CALI 177	TEMPERATURE	PCTEMP	OCEAN COLOR & CIRCULATION				STATION 26			SIGMA-T	SIGMA-P	LONGITUDE	AVSALIN	S7TEMP	RHO. T 1000
				PP-17-DE-77	SVANOW	LATITUDE	22 30.8 N	DT. HGT.	85 51.9 W							
1u.	36.229	28.625	27.622	23.126	475.509	26.463	.03A	36.221	28.624	.000						
2u.	36.224	28.620	27.622	23.129	475.322	26.467	.133	36.229	28.616	.000						
3u.	36.224	28.586	28.581	23.143	474.10A	26.463	.180	36.26A	28.173	2.250						
4u.	36.284	28.616	28.606	23.37A	451.999	26.721	.225	36.288	27.890	8.435						
5u.	36.281	27.904	27.892	23.41P	448.114	26.745	.267	36.459	26.51A	12.47A						
6u.	36.471	26.305	26.4A7	24.007	391.944	27.348	.306	36.485	26.201	12.772						
7u.	36.474	25.531	26.289	24.770	386.004	27.438	.343	36.540	25.571	9.414						
8u.	36.451	25.531	26.406	24.75P	357.530	27.741	.412	36.737	24.577	10.40A						
10u.	36.714	24.668	21.991	25.900	320.476	28.139	.465	36.946	22.074	14.693						
12u.	36.944	22.015	21.212	25.904	211.443	29.324	.510	36.924	21.316	6.024						
14u.	36.716	21.239	21.212	25.904	211.443	29.324	.586	36.744	20.044	7.487						
16u.	36.745	20.114	20.044	26.11A	191.094	29.542	.651	36.377	18.549	6.428						
18u.	36.722	18.549	17.370	26.47A	171.421	29.773	.691	36.327	17.111	3.446						
20u.	36.327	17.111	17.070	26.523	156.444	29.949	.711	36.700	16.355	4.429						
22u.	36.204	16.348	16.325	26.605	143.757	30.000	.730	36.03A	15.344	4.057						
24u.	36.04P	15.146	15.452	26.702	134.00A	30.245	.765	35.877	14.474	4.433						
26u.	35.4P2	14.440	14.443	26.781	125.470	30.248	.760	35.756	13.761	3.900						
28u.	35.76P	13.410	13.744	26.83A	120.017	30.346	.813	35.615	12.931	4.049						
30u.	35.414	12.935	12.444	26.899	113.447	30.442	.835	35.503	12.251	3.421						
32u.	35.504	12.260	12.211	26.949	108.117	30.503	.876	35.274	11.424	3.042						
34u.	35.345	11.346	11.31A	27.011	101.306	30.540	.850	35.205	10.242	3.140						
36u.	35.274	10.759	10.710	27.051	96.770	30.641	.876	35.274	9.964	2.475						
38u.	35.274	10.250	10.201	27.08A	92.442	30.676	.894	35.205	9.539	2.452						
40u.	35.150	9.945	9.846	27.111	89.660	30.746	.914	35.15A	9.064	2.475						
42u.	35.11A	9.531	9.478	27.143	85.970	30.744	.930	35.110	8.539	2.452						
44u.	35.071	9.101	9.047	27.177	81.430	30.746	.947	35.045	8.047	3.113						

DEPTH	CALI 177	TEMPERATURE	PCTEMP	OCEAN COLOR & CIRCULATION				STATION 27			SIGMA-T	SIGMA-P	LONGITUDE	AVSALIN	S7TEMP	RHO. T 1000
				PP-17-DE-77	SVANOW	LATITUDE	23 13.8 W	DT. HGT.	85 51.9 W							
1u.	36.20P	27.907	27.919	23.762	452.911	26.717	.045	36.213	27.919	.000						
2u.	36.225	27.916	27.911	23.394	440.045	26.739	.040	36.245	27.914	.000						
3u.	36.264	27.922	27.915	23.392	450.312	26.738	.135	36.265	27.920	2.250						
4u.	36.263	27.916	27.913	23.399	450.444	26.736	.180	36.285	27.921	8.435						
5u.	36.26C	27.637	27.623	23.416	450.410	26.740	.225	36.243	27.920	12.47A						
6u.	36.259	27.820	27.812	23.41A	448.278	26.745	.267	36.240	27.920	2.250						
7u.	36.26P	27.746	27.727	23.44A	445.610	26.744	.313	36.259	27.821	2.700						
8u.	36.284	26.470	26.467	23.755	416.405	27.117	.444	36.285	27.732	3.156						
10u.	36.402	25.485	25.44A	24.116	382.140	27.447	.524	36.405	26.814	4.400						
12u.	36.425	24.690	24.462	24.622	334.002	28.004	.540	36.010	24.94A	10.711						
14u.	36.404	22.640	23.646	25.100	247.650	28.544	.601	36.794	23.644	11.71A						
16u.	36.497	21.567	22.412	25.501	250.372	28.946	.714	36.405	22.643	6.424						
18u.	36.450	20.444	21.577	25.798	221.941	29.218	.762	36.497	21.631	8.744						
20u.	36.704	20.122	20.077	26.089	194.142	29.342	.805	36.439	20.149	6.200						
22u.	36.44P	19.530	19.442	26.186	144.770	29.653	.844	36.760	20.134	4.044						
24u.	36.570	18.763	18.713	26.505	153.401	29.753	.919	36.577	19.445	5.157						
26u.	36.368	17.310	17.275	26.423	161.697	29.842	.952	36.368	18.764	5.448						
28u.	36.30A	16.947	16.930	26.53A	150.240	30.045	.984	36.30A	17.310	4.045						
30u.	36.224	16.523	16.464	26.580	145.624	30.075	1.014	36.306	16.948	3.272						
32u.	36.179	15.749	15.64P	26.652	138.640	30.154	1.044	36.219	16.446	3.412						
34u.	36.125	15.367	15.204	26.697	134.011	30.200	1.072	36.081	15.745	4.240						
36u.	35.971	15.046	14.941	26.727	130.493	30.240	1.099	36.074	15.360	3.314						
38u.	35.922	14.783	14.695	26.752	128.196	30.270	1.152	35.91A	14.785	2.458						
40u.	35.851	14.349	14.280	26.787	124.42A	30.312	1.177	35.852	14.359	2.070						
42u.	35.749	13.776	13.706	26.830	119.644	30.344	1.201	35.753	13.701	3.445						
44u.	35.706	13.475	13.403	26.869	116.414	30.389	1.225	35.703	13.405	2.460						
46u.	35.617	12.945	12.882	26.89A	112.195	30.445	1.244	35.61A	12.940	3.22A						
48u.	35.460	12.546	12.226	26.946	104.043	30.479	1.270	35.557	12.546	2.744						
50u.	35.414	12.304	11.937	26.967	106.444	30.505	1.292	35.511	12.293	2.45A						
52u.	35.467	12.014	11.611	26.989	104.073	30.531	1.313	35.465	12.006	2.470						
54u.	35.416	11.649	11.267	27.003	101.262	30.549	1.333	35.416	11.649	2.470						
56u.	35.344	11.466	11.406	27.033	98.459	30.570	1.353	35.382	11.467	2.145						
58u.	35.351	11.055	10.974	27.033	95.786	30.614	1.373	35.317	11.040	2.715						
60u.	35.276	10.787	10.685	27.051	93.400	30.637	1.392	35.275	10.760	2.440						
62u.	35.245	10.509	10.424	27.073	90.653	30.644	1.410	35.271	10.471	2.440						
64u.	35.178	10.054	9.970	27.101	87.052	30.649	1.428	35.175	10.043	2.440						
66u.	35.141	9.762	9.677	27.122	84.272	30.649	1.444	35.141	9.764	2.440						
68u.	35.085	9.360	9.283	27.144	81.173	30.745	1.461	35.085	9.367	2.440						
70u.	35.030	8.896	8.811	27.178	76.429	30.747	1.477	35.029	8.853	3.185						
72u.	35.027	8.769	8.643	27.196	74.549	30.817	1.492	35.024	8.765	2.185						
74u.	35.078	8.414	8.327	27.213	71.450	30.801	1.507	34.941	8.413	2.440						
76u.	34.978	8.414	8.012	27.244	67.417	30.878	1.521	34.959	8.127	2.796						
78u.	34.955	8.099	7.676	27.270	64.362	30.910	1.534	34.925	7.761	2.430						
80u.	34.925	7.763	7.228	27.305	59.644	30.953	1.547	34.885	7.314	3.196						
82u.	34.88A	7.314	7.080	27.330	56.491	30.941	1.55A	34.891	7.142	2.431						
84u.	34.891	7.168	6.717	27.376	50.944	31.034	1.569	34.895	6.792	3.432						
86u.	34.885	6.804	6.270	27.432	44.095	31.044	1.57A	34.879	6.352	3.940						
88u.	34.879	6.356	5.890	27.494	36.330	31.107	1.594	34.895	6.074	3.281						
90u.	34.888	6.110	6.024	27.471	39.351	31.141	1.567	34.88A	5.817	2.418						
92u.	34.895	5.977	5.890	27.494	36.330	31.107	1.594	34.895	5.974	2.418						
94u.	34.901	5.802	5.716	27.521	32.429	31.107	1.601	34.901	5.801	2.724						
96u.	34.901	5.652	5.563	27.545	29.621	31.225	1.607	34.90A	5.651	2.610						

DEPTH	SALINITY	OCEAN COLOR & CIRCULATION				STATION 28		LONGITUDE	AZ	11.4 W	AVTEMP	AVG. X 1000
		NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	RP-17-RE-77	LATITUDE	23 29.2 N					
0.	36.206	28.070										
10.	36.208	28.016	28.013	23.316	457.372	26.649	.027	36.204	28.018	.000		
20.	36.208	28.010	28.005	23.321	456.977	26.665	.073	36.211	28.007	.000		
30.	36.255	27.900	27.893	23.392	450.377	26.738	.110	36.249	27.917	4.093		
40.	36.268	27.860	27.851	23.415	448.272	26.762	.164	36.267	27.862	4.712		
50.	36.279	27.866	27.854	23.421	447.773	26.749	.209	36.278	27.862	3.217		
60.	36.274	27.824	27.810	23.431	446.914	26.770	.253	36.276	27.823	2.372		
70.	36.272	27.803	27.783	23.437	446.546	26.787	.294	36.273	27.803	2.128		
80.	36.284	27.802	27.783	23.446	445.747	26.797	.342	36.284	27.796	2.073		
100.	36.334	27.215	27.192	23.674	424.276	27.031	.430	36.343	27.232	7.461		
120.	36.457	26.435	26.408	24.016	391.757	27.382	.511	36.463	26.412	9.268		
140.	36.684	25.097	25.066	24.604	335.766	27.924	.584	36.690	25.058	11.989		
160.	36.452	24.115	24.041	25.028	295.429	28.418	.648	36.856	24.143	9.481		
180.	36.991	22.643	22.606	25.566	244.182	28.972	.702	36.991	22.654	11.457		
200.	36.924	21.885	21.825	25.739	227.683	29.145	.749	36.929	21.849	6.682		
220.	36.824	20.789	20.747	25.957	206.753	29.317	.792	36.822	20.792	7.220		
240.	36.743	19.946	19.944	26.109	192.194	29.549	.832	36.743	19.996	6.167		
260.	36.627	19.110	19.063	26.252	174.345	29.704	.869	36.630	19.140	5.494		
280.	36.435	18.399	18.360	26.385	167.402	29.827	.904	36.530	18.409	5.262		
300.	36.311	17.777	17.725	26.443	154.742	29.914	.936	36.430	17.768	4.499		
320.	36.311	17.066	17.013	26.517	152.406	29.968	.964	36.314	17.100	4.153		
340.	36.198	16.420	16.365	26.588	145.234	30.079	.997	36.210	16.424	4.352		
360.	36.119	15.928	15.871	26.642	138.894	30.140	1.028	36.111	15.894	3.771		
380.	35.998	15.222	15.163	26.708	132.933	30.218	1.053	35.909	15.225	3.687		
400.	35.891	14.631	14.470	26.757	127.768	30.276	1.079	35.891	14.620	3.687		
420.	35.802	14.049	14.021	26.805	122.717	30.333	1.104	35.802	14.052	3.465		
440.	35.725	13.615	13.558	26.844	118.473	30.379	1.124	35.719	13.597	3.113		
460.	35.414	12.973	12.905	26.893	113.118	30.439	1.152	35.614	12.947	3.409		
480.	35.550	12.557	12.492	26.926	109.474	30.478	1.174	35.549	12.558	3.012		
500.	35.491	12.194	12.132	26.950	106.400	30.509	1.195	35.492	12.190	2.555		
520.	35.431	11.835	11.767	26.979	103.243	30.544	1.216	35.440	11.843	2.725		
540.	35.409	11.548	11.514	26.997	101.077	30.571	1.237	35.402	11.582	2.405		
560.	35.359	11.294	11.223	27.010	98.168	30.594	1.257	35.354	11.293	2.419		
580.	35.311	10.976	10.925	27.040	95.721	30.621	1.276	35.312	10.982	2.495		
600.	35.251	10.613	10.538	27.063	92.843	30.640	1.295	35.254	10.610	2.684		
620.	35.202	10.215	10.141	27.092	89.387	30.655	1.313	35.201	10.207	2.420		
640.	35.157	9.879	9.803	27.114	86.247	30.715	1.331	35.159	9.877	2.464		
660.	35.117	9.550	9.473	27.134	83.241	30.745	1.344	35.118	9.554	2.296		
680.	35.084	9.307	9.224	27.155	81.042	30.765	1.364	35.082	9.246	2.243		
700.	35.059	9.073	8.984	27.172	78.666	30.777	1.380	35.058	9.049	2.243		
720.	35.011	8.777	8.684	27.190	76.044	30.811	1.395	35.013	8.738	2.174		
740.	35.002	8.534	8.444	27.211	73.116	30.836	1.414	34.999	8.528	2.414		
760.	34.967	8.242	8.161	27.231	70.527	30.841	1.425	34.984	8.236	2.517		
780.	34.941	7.963	7.881	27.253	67.590	30.848	1.439	34.937	7.942	2.514		
800.	34.907	7.672	7.590	27.277	64.816	30.912	1.455	34.910	7.670	2.444		
820.	34.921	7.592	7.507	27.292	62.283	30.935	1.468	34.921	7.577	2.442		
840.	34.899	7.318	7.234	27.314	59.148	30.943	1.477	34.911	7.344	2.442		
860.	34.873	6.946	6.862	27.344	55.194	30.948	1.468	34.872	6.945	2.292		
880.	34.877	6.634	6.550	27.393	49.176	31.053	1.498	34.874	6.647	3.475		
900.	34.876	6.475	6.400	27.416	46.343	31.079	1.504	34.841	6.475	2.742		
920.	34.889	6.261	6.275	27.438	43.441	31.104	1.517	34.844	6.330	2.403		
940.	34.887	6.134	6.047	27.467	40.749	31.137	1.525	34.844	6.131	2.472		
960.	34.927	6.062	5.915	27.489	36.471	31.144	1.533	34.895	5.948	2.447		
980.	34.907	5.834	5.746	27.518	33.195	31.164	1.540	34.902	5.840	2.471		
1000.	34.911	5.846	5.498	27.541	29.419	31.222	1.546	34.911	5.669	2.472		

DEPTH	SALINITY	OCEAN COLOR & CIRCULATION				STATION 29		LONGITUDE	AZ	11.4 W	AVTEMP	AVG. X 1000
		NOAA SHIP RESEARCHER	TEMPERATURE	POTEMP	RP-17-RE-77	LATITUDE	23 39.7 N					
0.	36.200	20.244										
10.	36.184	20.147	20.142	23.254	463.394	26.547	.037	36.184	20.157	.000		
20.	36.147	20.150	20.152	23.256	463.352	26.549	.083	36.184	20.162	.000		
30.	36.141	20.150	20.150	23.254	463.842	26.611	.130	36.184	20.161	1.144		
40.	36.187	20.128	20.134	23.254	461.747	26.509	.176	36.184	20.160	.437		
50.	36.214	20.105	20.091	23.294	460.010	26.611	.222	36.220	20.059	3.446		
60.	36.268	20.110	20.104	23.462	444.484	26.611	.267	36.267	20.119	7.480		
70.	36.270	20.472	20.476	23.444	436.401	26.611	.312	36.272	20.760	13.243		
80.	36.164	20.739	20.716	23.444	407.444	27.211	.397	36.164	20.131	6.424		
100.	36.442	20.110	20.123	24.110	382.744	27.479	.471	36.442	20.110	6.133		
120.	36.779	20.477	20.247	24.482	347.386	27.600	.545	36.782	20.356	11.174		
140.	36.893	20.717	20.413	24.492	298.812	28.344	.609	36.780	20.444	10.451		
160.	36.847	21.434	21.305	25.798	273.296	28.876	.665	36.843	20.746	9.062		
180.	36.812	20.844	20.844	25.922	221.975	29.219	.711	36.844	21.437	5.782		
200.	36.770	19.704	19.704	26.152	184.196	29.341	.755	36.815	20.922	7.492		
220.	36.944	18.800	18.756	26.309	172.046	29.595	.795	36.722	18.813	6.445		
240.	36.491	18.053	18.004	26.417	162.317	29.843	.831	36.595	18.053	5.211		
260.	36.412	17.517	17.466	26.489	155.243	29.903	.866	36.484	17.519	4.162		
280.	36.274	16.745	16.742	26.561	148.030	30.046	.924	36.275	16.744	4.425		
300.	36.116	15.855	15.800	26.656	134.439	30.155	.955	36.126	15.845	4.425		
320.	36.114	15.223	15.167	26.721	131.915	30.229	.982	36.014	15.257	3.946		
340.	35.724	14.655	14.599	26.770	125.440	30.296	1.004	35.914	14.642	3.050		
360.	35.462	14.332	14.271	26.800	123.531	30.325	1.033	35.863	14.331	2.499		
380.	35.757	13.790	13.649	26.840	119.159	30.372	1.057	35.758	13.759	3.347		
400.	35.652	13.144	13.092	26.844	114.242	30.426	1.080	35.657	13.170	3.437		
420.	35.444	12.776	12.713	26.914	110.432	30.447	1.103	35.599	12.767	2.888		
440.	35.401	12.117	12.051	26.974	104.467	30.533	1.124	35.501	12.130	3.429		
460.	35.415	11.536	11.474	27.017	99.434	30.586	1.145	35.415	11.549	3.497		
480.	35.169	11.203	11.147	27.044	93.369	30.699	1.164	35.368	11.201	2.417		
500.	35.321	10.864	10.798	27.069	87.369	30.650	1.183	35.312	10.825	2.687		
520.	35.174	10.270	10.204	27.103	82.494	30.731	1.201	35.175	10.030	3.243		
540.	35.134	9.643	9.615	27.130	77.547	30.757	1.219	35.133	9.646	2.731		
560.	35.087	9.347	9.279	27.149	72.624	30.787	1.234	35.084	9.334	2.625		
580.	35.047	8.980	8.911	27.177	79.344	30.742	1.252	35.044	8.991	3.076		
600.	35.024	8.662	8.592	27.211	75.344	30.831	1.267	35.024	8.616	2.425		
620.	35.046	8.355	8.285	27.249	72.817	30.855	1.282	34.947	8.363	2.425		
640.	34.954	8.075	8.004	27.249	70.108	30.840	1.296	34.957	8.063	2.446		
660.	34.955	7.920	7.847	27.271	67.358	30.905	1.310	34.954	7.913	2.470		
680.	34.933	7.677	7.604	27.288	64.763	30.928	1.323	34.933	7.674	2.382		
700.	34.916	7.444	7.370	27.310	61.992	30.954	1.334	34.917	7.446	2.452		
720.	34.901	7.238	7.163	27.328	59.435	30.976	1.340	34.902	7.243	2.276		
740.	34.896	7.045	6.969	27.351	56.446	31.002	1.360					

		OCEAN COLOR & CIRCULATION				STATION 40					
DEPTH	SALINITY	NOAA SHIP RESEARCHER	POTEMP	RP-17-RE-77	LATITUDE	24 1.8 N	LONGITUDE	B2	9.7 M	AVTEMP	AVG. T 100M
0.	36.179	TEMPERATURE	SIGMA-T	SVANOM	SIGMA-P	DTM HGT.	AVSALIN				
10.	36.181	28.373	28.365	23.183	470.050	26.523	.009	36.181	28.367	.000	
20.	36.193	28.337	28.227	23.236	465.056	26.579	.056	36.196	28.231	-.000	
30.	36.191	28.208	28.189	23.288	468.483	26.547	.102	36.191	28.212	3.852	
40.	36.178	28.181	28.171	23.257	463.311	26.622	.199	36.197	28.180	2.288	
50.	36.211	28.136	28.124	23.281	461.151	26.627	.195	36.219	28.106	3.773	
60.	36.275	27.701	27.687	23.472	443.029	26.822	.240	36.276	27.756	6.676	
70.	36.310	27.414	27.399	23.592	431.708	28.945	.284	36.317	27.443	8.413	
80.	36.399	26.810	26.810	23.847	407.854	27.206	.327	36.389	26.886	9.433	
100.	36.659	25.221	25.109	24.547	340.778	27.923	.402	36.656	25.220	13.292	
120.	36.540	23.484	23.459	24.979	299.641	28.375	.464	36.554	23.364	10.403	
140.	36.448	22.299	22.271	25.631	237.622	29.039	.518	36.437	22.265	12.131	
160.	36.916	21.126	21.045	25.935	206.625	29.357	.562	36.921	21.143	9.180	
180.	36.424	18.772	18.739	26.185	184.817	29.638	.602	36.414	18.725	7.998	
200.	36.354	17.730	17.696	26.393	164.824	29.860	.636	36.351	17.753	6.485	
220.	36.209	16.646	16.610	26.544	149.727	30.027	.664	36.209	16.646	6.549	
240.	36.071	15.771	15.733	26.641	140.076	30.138	.697	36.084	15.825	5.954	
260.	35.925	14.843	14.803	26.737	130.501	30.248	.724	35.929	14.854	5.117	
280.	35.827	14.182	14.140	26.805	123.647	30.326	.749	35.823	14.170	4.128	
300.	35.676	13.294	13.251	26.874	116.375	30.410	.773	35.677	13.303	4.254	
320.	35.447	12.499	12.456	26.934	110.030	30.443	.796	35.552	12.522	4.000	
340.	35.489	11.956	11.911	26.980	105.110	30.536	.817	35.472	11.954	3.480	
360.	35.374	11.280	11.235	27.033	99.415	30.602	.838	35.375	11.298	3.113	
380.	35.282	10.654	10.608	27.076	94.523	30.657	.857	35.280	10.653	3.461	
400.	35.204	10.186	10.139	27.098	91.796	30.707	.876	35.202	10.173	2.818	
420.	35.127	9.636	9.580	27.132	87.724	30.731	.894	35.124	9.630	3.003	
440.	35.091	9.327	9.277	27.155	84.852	30.760	.911	35.091	9.327	2.416	
460.	35.092	9.148	9.096	27.186	81.437	30.794	.924	35.092	9.134	2.480	
480.	35.077	8.954	8.901	27.205	79.046	30.817	.944	35.077	8.947	2.264	
500.	35.041	8.781	8.726	27.220	77.089	30.836	.959	35.059	8.777	1.961	
520.	35.048	8.644	8.587	27.229	75.726	30.847	.974	35.047	8.656	1.479	
540.	35.024	8.463	8.405	27.244	73.629	30.867	.989	35.028	8.464	2.011	
560.	35.074	8.267	8.208	27.257	71.808	30.883	1.004	35.066	8.256	2.204	
580.	34.990	8.052	7.992	27.274	69.185	30.908	1.014	34.990	8.047	2.296	
600.	34.940	7.633	7.573	27.302	65.928	30.939	1.032	34.935	7.601	2.708	
620.	34.884	7.141	7.081	27.337	61.876	30.979	1.044	34.890	7.151	2.456	
640.	34.895	7.025	6.963	27.353	59.194	31.003	1.056	34.894	7.014	2.441	
660.	34.847	6.790	6.727	27.380	55.446	31.034	1.064	34.849	6.785	2.755	
680.	34.893	6.641	6.577	27.404	52.402	31.042	1.079	34.893	6.638	2.527	
700.	34.846	6.556	6.491	27.414	50.490	31.077	1.089	34.846	6.560	1.754	
720.	34.897	6.464	6.397	27.431	49.036	31.042	1.099	34.894	6.461	1.446	
740.	34.890	6.363	6.295	27.446	46.945	31.109	1.109	34.890	6.358	2.201	
760.	34.704	6.246	6.216	27.461	44.446	31.125	1.114	34.903	6.243	1.466	
780.	34.906	6.123	6.052	27.484	41.446	31.141	1.127	34.906	6.122	2.451	
800.	34.922	5.970	5.894	27.516	38.192	31.147	1.135	34.914	5.979	2.731	
820.	34.926	5.865	5.792	27.532	35.431	31.205	1.142	34.926	5.844	2.449	
840.	34.924	5.781	5.706	27.544	34.007	31.219	1.149	34.929	5.781	1.492	
860.	34.924	5.713	5.637	27.553	32.569	31.229	1.156	34.928	5.711	1.483	
880.	34.932	5.621	5.543	27.568	30.440	31.246	1.162	34.934	5.617	2.105	

		OCEAN COLOR & CIRCULATION				STATION 41					
DEPTH	SALINITY	NOAA SHIP RESEARCHER	POTEMP	RP-17-RE-77	LATITUDE	24 1.9 N	LONGITUDE	B1	54.4 M	AVTEMP	AVG. T 100M
0.	36.884	TEMPERATURE	SIGMA-T	SVANOM	SIGMA-P	DTM HGT.	AVSALIN				
10.	36.887	27.290	27.276	25.426	256.434	28.767	.010	36.147	27.272	.000	
20.	36.122	27.122	27.115	23.544	435.783	26.480	.052	36.121	27.110	.000	
30.	36.164	26.852	26.842	23.663	424.534	27.020	.094	36.163	26.869	4.444	
40.	36.177	26.687	26.676	23.725	414.716	27.045	.134	36.174	26.694	6.540	
50.	36.198	26.520	26.506	23.794	412.214	27.150	.174	36.196	26.515	5.474	
60.	36.237	25.222	25.207	24.228	370.897	27.600	.214	36.214	25.246	10.440	
80.	36.261	23.442	23.525	24.751	321.076	28.145	.254	36.281	23.505	15.282	
100.	36.707	22.794	22.773	25.307	266.243	28.708	.312	36.676	22.706	11.527	
120.	36.214	19.733	19.711	25.776	223.311	29.215	.362	36.256	19.990	10.261	
140.	36.140	18.072	18.067	26.178	184.844	29.639	.403	36.171	17.977	10.491	
160.	35.921	16.109	16.094	26.447	154.758	29.937	.436	35.920	16.110	7.434	
180.	35.716	15.094	15.066	26.520	151.472	30.026	.467	35.716	15.094	6.339	
200.	35.454	13.965	13.936	26.566	144.595	30.040	.497	35.456	13.959	3.411	
220.	35.354	13.266	13.235	26.631	140.013	30.144	.526	35.349	13.254	4.038	
240.	35.243	12.579	12.547	26.683	134.567	30.230	.553	35.248	12.544	3.792	
260.	35.132	11.817	11.784	26.744	128.148	30.304	.579	35.133	11.834	3.421	
280.	35.049	11.244	11.209	26.784	123.443	30.358	.605	35.048	11.248	3.442	
300.	34.970	10.742	10.665	26.825	119.411	30.404	.629	34.971	10.693	3.290	
320.	34.917	10.241	10.244	26.864	115.033	30.452	.652	34.918	10.235	3.246	
340.	34.844	9.744	9.705	26.896	111.363	30.443	.675	34.853	9.744	2.429	
360.	34.807	9.418	9.377	26.919	108.598	30.522	.697	34.807	9.417	2.524	
380.	34.809	9.346	9.303	26.932	106.467	30.537	.718	34.807	9.344	1.444	
400.	34.785	9.187	9.142	26.934	105.806	30.547	.740	34.787	9.191	1.425	
420.	34.760	8.954	8.908	26.958	103.478	30.571	.760	34.761	8.961	2.182	
440.	34.727	8.659	8.612	26.979	100.836	30.597	.781	34.727	8.654	2.468	
460.	34.705	8.462	8.413	26.992	98.464	30.615	.801	34.706	8.477	1.457	
480.	34.688	8.264	8.214	27.014	96.744	30.634	.821	34.684	8.262	2.414	
500.	34.650	7.946	7.897	27.035	95.570	30.647	.840	34.660	7.937	2.237	
520.	34.605	7.546	7.496	27.051	91.138	30.691	.858	34.617	7.574	2.445	
540.	34.561	7.128	7.078	27.076	87.739	30.724	.876	34.561	7.134	2.435	
560.	34.590	7.025	6.971	27.113	83.634	30.743	.893	34.544	7.007	3.025	
580.	34.573	6.818	6.763	27.129	81.414	30.743	.909	34.574	6.812	2.413	
600.	34.585	6.743	6.646	27.148	78.993	30.804	.925	34.544	6.740	2.157	
620.	34.583	6.596	6.538	27.167	76.967	30.825	.941	34.704	6.839	4.400	

		OCEAN COLOR & CIRCULATION				STATION 42					
DEPTH	SALINITY	NOAA SHIP RESEARCHER	POTEMP	RP-17-RE-77	LATITUDE	24 22.3 N	LONGITUDE	B1	55.4 M	AVTEMP	AVG. T 100M
0.	35.825	TEMPERATURE	SIGMA-T	SVANOM	SIGMA-P	DTM HGT.	AVSALIN				
10.	35.831	26.114	26.118	23.643	424.124	27.007	.009	35.831	26.121	.000	
20.	35.828	26.127	26.123	23.639	426.596	27.004	.051	35.834	26.130	.000	
30.	35.858	26.164	26.159	23.850	425.688	27.015	.094	35.852	26.133	1.917	
40.	35.822	25.866	25.857	23.716	419.442	27.045	.134	35.829	25.854	4.355	
50.	35.744	25.437	25.426	23.793	412.223	27.167	.174	35.734	25.346	6.156	
60.	35.673	24.738	24.725	23.690	397.263	27.333	.218	35.706	24.761	7.544	
72.	35.607	24.089	24.073	24.246	369.111	27.635	.263	35.652	24.081	10.292	
80.	35.632	14.081	14.070	24.691	135.546	30.208	.283	35.607	14.089	14.681	
100.	35.433	12.875	12.861	26.771	127.535	30.309	.310	35.437	12.923	24.703	
120.	35.363	12.535	12.519	26.785	126.017	30.328	.335	35.354	12.469	2.627	
140.	35.006	10.678	10.661	26.857	118.414	30.433					

Appendix C: Suspended Sediment Data

OCEAN COLOR CRUISE

CAST 2

DEPTH (m)	CONCENTRATION (mg/l)
1	0.17
10	0.95
30	1.76
40	0.58

CAST 2C

DEPTH (m)	CONCENTRATION (mg/l)
26	0.27
35	0.91
38	0.93

CAST 3A

DEPTH (m)	CONCENTRATION (mg/l)
1	0.54
5	0.75
10	0.58

CAST 4A

1	1.05
6	0.41
12	0.63

CAST 5A

1	0.83
6	0.79
8	0.81
10	0.78
12	1.20
14	1.87

CAST 6

1	0.57
55	0.50
300	0.27
500	1.47
750	0.22
950	0.79

CAST 7

2	0.94
30	0.83
60	0.55
100	0.31
150	1.24
225	0.45

CAST 8D

1	1.88
20	0.21
30	0.22
45	1.46
47	0.23
49	0.21
70	0.09

CAST 8F

1	1.76
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CAST 8G

1	1.64
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CAST 9A

1	1.54
6	1.60
10	0.82
14	1.02

CAST 9B

2	1.37
8	0.67
13	0.80
15	1.86

CAST 10

1	0.45
38	0.27
75	0.91
125	0.69
225	1.04

CAST 11D

1	0.13
45	0.28
49	0.26
52	0.28
120	0.29

CAST 18

204	0.52
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CAST 19

187	0.27
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CAST 23

164	0.22
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CAST 28

179	0.44
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CAST 30

140	0.30
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