NORTHWEST REGIONAL MARINE PROGRAM

Sponsored by Ecological Research Division
United States Department of Energy

OREGON STATE
UNIVERSITY

UNIVERSITY OF
WASHINGTON

BATTELLE
NORTHWEST

DATA REPORT OF THE DOE-SPONSORED NORTHWEST MARINE SCIENCES GROUP SEPTEMBER - OCTOBER 1980 CRUISE

COMPILED BY

JAMES R. POSTEL
WILLIS K. PETERSON
JAMES C. KITCHEN
AND
DAVID W. MENZIES

MASTER

Department of Energy Contracts:

DE-AT06-79-EV-10047
DE-AT06-76-EV-75026
DE-AT06-76-EV-71025
DE-AT06-76-EV-70024
DE-AT06-76-EV-70029
DE-AC06-76-RL-01830

NOTICE

PORTIONS OF THIS REPORT ARE ILLEGIBLE. It
has been reproduced from the best available
copy to permit the broadest possible avail-
ability.

Battelle

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

PORTIONS OF THIS REPORT ARE ILLEGIBLE. It
has been reproduced from the best available
copy to permit the broadest possible avail-
ability.

DE/EV/10047-5

DATA REPORT OF THE DOE-SPONSORED
NORTHWEST MARINE SCIENCES GROUP
SEPTEMBER-OCTOBER 1980 CRUISE

Compiled by

DOE/EV/10047--5

DE82 011081

James R. Postel
Willis K. Peterson
School of Oceanography, WB-10
University of Washington
Seattle, Washington 98195

and

James C. Kitchen
David W. Menzies
School of Oceanography
Oregon State University

DISCLAIMER

This book was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

PREPARED FOR THE U.S. DEPARTMENT OF ENERGY
UNDER CONTRACT NO. DE-AT06-79-EV-10047

George C. Anderson
Regional Coordinator

Knut Aagaard
Acting Associate Director for Research
School of Oceanography

REF: A82-1
Date: January 1982

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Department of Energy, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

Table of Contents

Introduction	1
Cruise Synopsis	3
Leg I	3
Leg II	3
Leg III	7
Methods	13
CTD data	13
Hydrographic cast data	14
Salinity for calibration of the CTD	14
Oxygen	14
Nutrients	14
Pigments	15
Phytoplankton, microzooplankton, and ammonium oxidizing bacteria	15
Particle size distribution	15
Water transparency and incident radiation	15
Phytoplankton primary productivity	15
Intensive sampling	16
Acknowledgments	16
Section Plots of Measured Variables	17
CTD Plots and Data Tables	50
Explanation of data table headings	51
Deep CTD Casts	361
Interpolated and Computed Values	404

Phytoplankton Productivity	442
Simulated in situ incubations	442, 445
Photosynthetic rate versus light intensity data	442
Photosynthetic unit size determination	443
P700 measurements	443
Measured ¹⁴ C uptake rates	443
Photosynthetic unit size, P700, and photosynthetic rate versus light intensity data	451
Particle Size Distribution	464
Nitrifying Bacteria Abundances	475
Zooplankton Data	477
References	492
Appendix 1: Continuous oxygen profile	494
Appendix 2: Participating personnel and contacts for data	496

INTRODUCTION

This cruise, designated W8009c, was part of a continuing program to collect detailed information on the processes affecting plankton productivity, abundance, and distribution off the Washington coast, and on the chemistry, distribution, and flux of particulate material in these waters. The sampling program for this cruise was designed to determine the effect of the Quinault Canyon on the biology, chemistry, hydrography, and flux of particulate material in Washington coastal waters. Personnel from the University of Washington and Oregon State University cooperated to provide a broad range of expertise toward fulfilling the scientific objectives of the cruise. The timing of the cruise was chosen to correspond to autumn conditions.

The field program had three major components: Leg I, concerned with the deployment of current meters and measurement of water properties in the vicinity of Quinault Canyon; Leg II, predominantly a transect or survey phase; and Leg III, intensive sampling at a smaller number of sites to investigate important processes and rates. The transect phase provided an overview of biological and hydrographic parameters over a large region of the coastal zone. The information collected during Leg II provided the bases for selecting sites for intensive sampling on Leg III and also provided a broader geographical data base for interpreting and extrapolating the results of the intensive studies of Leg III. The intensive investigations focused on rates of important processes involved in transfer of energy and biomass in pelagic ecosystems and included measures of phytoplankton productivity, zooplankton grazing rates, microbial activity, flux of organic matter and suspended particulates, and characteristics of a near-bottom nepheloid layer.

Fig. 1. Locations of CTD transects, current meter deployments (□), sediment trap deployment (◇), and special stations (991-995) sampled during cruise W8009c, Leg I (24-27 September 1980).

CRUISE SYNOPSIS

Leg I

The R/V Wecoma departed Newport, Oregon at 1341, 24 September 1980, and steamed to the 200-m contour off Depoe Bay, Oregon (Fig. 1). A CTD lowering and hydrographic sampling were conducted at this location (Sta 991, 992) and at two deeper stations (993, 994) seaward of Willapa Bay as the Wecoma steamed toward the primary study area. On 25 and 26 September, five current meter arrays (Hickey) and one sediment trap array (Carpenter) were moored, CTD sections were sampled in the Quinault Canyon region, and one additional station (995) was occupied to gather data concerned with the near-bottom nepheloid layer.

Subsurface current meter arrays were deployed and anchored at the following locations in order to monitor water flow in the Quinault Canyon region.

<u>Station ID.</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Bottom Depth</u>
CM9	47°07.4'N	124°20.0'W	45 m
CM8	47°07.5'N	124°54.2'W	145 m
CM10	47°27.6'N	124°55.8'W	432 m
CM2	47°18.1'N	124°46.4'W	386 m
CM1	47°16.2'N	125°45.9'W	147 m

One CTD section down the canyon axis (Sta 1-12), one section around the canyon rim at approximately 160 m depth (Sta 13-22), and one section directed across the canyon walls (Sta 23-33) were occupied to determine the initial density field relevant to the interpretation of the current meter data (Figs. 1, 2).

The sediment trap array was moored in 97 m of water at 47°07.5'N and 124°40.3'W. Traps were positioned at 30, 60, and 90 m depth to collect particulate material. The sediment trap site is in the path of major sediment transport from the Columbia River, and the samples taken are utilized to examine the types and fate of aliphatic and polycyclic aromatic hydrocarbons introduced to the Washington shelf by the Columbia River.

CTD work was terminated at 1105, 27 September, and the Wecoma steamed to Grays Harbor, Washington. Leg I ended with a partial exchange of scientific personnel at Westport, Washington on 27 September.

Leg II

The Wecoma departed Grays Harbor at 1530, 27 September to begin sampling several transects of stations (Fig. 3). The first transect sampled, the Copalis Line (Figs. 3, 4), extended along latitude 47°07.0'N from near shore to 125°45.0'W. Stations were sampled as rapidly as possible from the surface to the bottom of the water column, using a Neil Brown Mark III CTD and optical instruments designed and built by Oregon State University personnel. A few discrete depths were sampled for particle size distribution on the CTD upcast using rosette-mounted, 5% Niskin bottles. The Copalis Line was then repeated in reverse order to permit more detailed sampling at discrete depths in the upper 150 m for dissolved

Fig. 2. Detail of locations of CTD stations (x), current meter deployments (□), and sediment trap deployment (◇) during cruise W8009c, Leg I (24-27 September 1980).

Fig. 3. Locations of sampling transects occupied during cruise W8009c, Leg II (27 September - 5 October 1980).

Fig. 4. Detailed location of stations comprising the Copalis Line, occupied 27-29 September 1980.

nutrients and oxygen, plant pigments, particulate nitrogen and carbon, phyto- and zooplankton species composition, and primary productivity.

Upon completion of the Copalis Line, the Wecoma steamed to the inshore end of the Moclips Line (Figs. 3, 5). The Moclips Line ($47^{\circ}13.5'N$) was sampled once in detail from near shore to longitude $124^{\circ}57.6'W$. The Wecoma then steamed to the inshore end of the Quinault (Canyon) Line, which followed the axis of the canyon itself and terminated beyond the canyon mouth at $47^{\circ}20.0'N$, $125^{\circ}45.0'W$ (Figs. 3, 6). The sampling procedure outlined above for the Copalis Line was repeated here and then again for the Queets Line ($47^{\circ}32.0'N$; Figs. 3, 7) from nearshore to $125^{\circ}45.0'W$. On both the Quinault and Queets Lines, during the outbound transects, from 5-9 depths per station were sampled for nepheloid layer experiments.

After completion of the Queets Line, two north-south sections were sampled. The first transect (Stas 116-125) followed approximately the 40 m contour between the Queets Line and the Copalis Line (Figs. 3, 8). Standard depths were sampled on the CTD upcasts for plant pigments and dissolved nutrients. The second transect involved five stations (126-130) and followed the 200 m contour closely. A few depths per station were sampled to determine characteristics of particulate material associated with the near-bottom nepheloid layer. The north-south sections were completed at 1840, 4 October, and the Wecoma departed for Grays Harbor where a partial exchange of scientific personnel was made on 5 October.

Leg III

The Wecoma departed Grays Harbor at 1835, 5 October, to resume scientific work for Leg III of the cruise, which involved intensive sampling at each of four sites (Figs. 8, 9). The sites were: (A) the approximate shelf break (200 m) on the Copalis Line, (B) the approximate 60 m contour on the Moclips Line, (C) the head of the Quinault Canyon at about the 200 m contour, and (D) the approximate 30 m contour on the Copalis Line. Some extra sampling was conducted at other sites as time permitted.

At sites A and C (Fig. 9), 48-hour time course studies were made of the near-bottom nepheloid layer; sampling was conducted at 6-hour intervals. At each main site (A-D), experimental studies of microzooplankton grazing activity were conducted and samples were collected to measure photosynthetic rate versus light intensity and photosynthetic unit size of the phytoplankton.

The sediment traps deployed during Leg I (Sta FPI) were recovered on 12 October, and, in addition, a box core, net hauls, and water samples were collected at the same site. Similarly, net hauls (and a box core) were obtained from a site seaward of Grays Harbor at $46^{\circ}55.0'N$, $124^{\circ}31.5'W$ (Sta 144).

Another sediment trap array was deployed on 8 October to determine the flux of organic material through the water column. It was anchored in 236 m of water at $47^{\circ}14.1'N$, $124^{\circ}29.4'W$. However, this array was lost during the attempted recovery.

Station work was completed by 0900, 13 October, and the Wecoma departed the study area for Seattle, Washington. The cruise terminated in Seattle at 1055, 14 October 1980.

Fig. 5. Detailed location of stations comprising the Moclips Line, occupied 29 September 1980.

Fig. 6. Detailed location of stations comprising the Quinault (Canyon) Line, occupied 29 September - 2 October 1980.

Fig. 7. Detailed location of stations comprising the Queets Line, occupied 2-3 October 1980.

Fig. 8. Detailed locations of north-south sampling line stations (116-130), occupied 3-4 October 1980 and stations occupied during cruise W8009c, Leg III (131-158), occupied 5-13 October 1980.

Fig. 9. Locations of intensive sampling sites (A-D) and other special stations occupied during W8009c, Leg III (5-13 October 1980).

METHODS

Three sampling transects on Leg II extended from near shore to longitude 125°45'W. Each of these transects (Queets Line, Quinault Canyon Line, and Copalis Line) were sampled twice. On the first sampling of each transect, the CTD was lowered from the surface to within a few meters of the bottom; a few discrete samples were taken using rosette-mounted Niskin bottles on the CTD up-cast. On the second sampling, the CTD was lowered to 200 m, or close to the bottom in shallower water, and 11 depths were sampled between 150 m and the surface on the CTD upcast. At five selected stations on each transect, net tows were made and a large-volume (50 l), non-toxic plastic water sampler was used to collect water for a variety of experiments.

The shorter Moclips Line was sampled once. The CTD was lowered to near the bottom and several discrete depths were sampled on the CTD upcast.

CTD data

Throughout this cruise temperature, conductivity, depth, and dissolved oxygen concentration were measured using a Neil Brown Instrument Systems, Inc., Mark III CTD, which was lowered from the surface to within a few meters of the bottom at approximately 30 m min⁻¹. Dissolved oxygen was monitored with a Beckman oxygen probe, one of the built-in CTD system options. Additionally, a beam transmissometer and an irradiance meter, designed by the Oregon State University optical oceanography group, were mounted on the rosette sampler and interfaced with the CTD system underwater unit to measure the water's beam attenuation coefficient (660 nm wavelength source) and the amount of radiant energy throughout the water column.

The conductivity calibration was confirmed by taking discrete samples for salinity at three deep-water stations (47, 81, and 105). The oxygen calibration was determined at the same stations from titrated samples (as described below and in Appendix 1). The temperature and pressure sensors were not recalibrated for this cruise. Previous data has shown them to be stable and to agree with the manufacturer's calibration; but because the conductivity sensor occasionally becomes filled with mud, we routinely calibrate it during our cruises.

The transmissometer and the irradiance meter were calibrated in air before and after the cruise. For stations prior to number 99, we used a transmissometer having a path length of 100 cm. The instrument developed a crack at Sta 99 and was removed. Another transmissometer, having a path length of 25 cm, was utilized for stations 131-158. All attenuation coefficients reported here have been corrected as necessary to represent 100 cm path length.

The digitized data were written to 9-track magnetic tapes by a Kennedy data logger as frequency counts for each variable. The tapes were read and processed using a PRIME 300 computer; the program was developed by the Computer Services Group, Department of Oceanography, University of Washington.

After initial processing, the downcast data files were condensed by averaging data from scans within 0.1 m of each other and deleting scans associated with upward movement of the instrument or with erratic sensor signals (such as near the surface, where the instrument was bobbing in and out of the water). The resulting files were used to generate the vertical plots and interpolated data tables found in this report. Data from the upcast (rosette) files were averaged for each depth at which a bottle was tripped and these data appear in the data tables with the appropriate data derived from water bottle samples.

Hydrographic cast data

Discrete samples for hydrographic, biological, chemical, and particle size data were obtained using rosette-mounted, 5-l Niskin bottles. Typically, subsamples were drawn from each water bottle for the determination of dissolved oxygen, nitrate, nitrite, ammonia, phosphate, silicate, chlorophyll *a* and phaeopigments, and phytoplankton species composition. Selected stations and depths were subsampled for determination of microzooplankton species composition and biomass, concentration of ammonium oxidizing bacteria, particle size distribution and phytoplankton primary productivity (simulated in situ productivity measurements).

Salinity for calibration of the CTD

Salinity samples were collected at three deep water stations to empirically determine appropriate calibration coefficients for the CTD conductivity sensor. Salinities were measured with a salinometer which was a modification of the Wenner-Smith-Soule salinity bridge (Paquette, 1958).

Oxygen

Dissolved oxygen was measured by titration, using a modification of the method of Carpenter (1965). The reagent concentrations were adjusted to reduce iodine volatilization. Weiss' (1970) equations and values of temperature and salinity from the CTD rosette casts were used to calculate the percent oxygen saturation and the apparent oxygen utilization (AOU) of the titrated samples.

Nutrients

Nutrient samples were analyzed on shipboard using a Technicon® autoanalyzer. Samples were analyzed for nitrate, nitrite, ammonia, phosphate, and silicate using modifications of the methods described by Strickland and Parsons (1972) for autoanalyzer use (Pavlou, 1972).

Pigments

Chlorophyll *a* and phaeopigments were determined fluorometrically (Yentsch and Menzel, 1963; Holm-Hansen et al., 1965) on shipboard. Water samples (280 ml) were filtered immediately onto 25-mm diameter Whatman GF/C or Gelman A/E glass fiber filters, and pigments were extracted in 90% acetone. Cells were lysed by sonication at an indicated 400-500 μ amps output for 7 minutes using an Ultrasonic Instruments International, Inc., Megason ultrasonic disintegrator (Model PG-300-20-1) and probe (Model PA-300-20-1). Samples were placed in a stainless steel-jacketed ice bath during sonication.

The Turner 111 fluorometer was calibrated against spectrophotometrically determined chlorophyll extracts of phytoplankton cultures harvested during the log-phase of growth (Lorenzen, 1967). Several species were analyzed and the results averaged to determine the calibration constants.

Phytoplankton, microzooplankton, and ammonium oxidizing bacteria

Phytoplankton samples were preserved in 1% v/v formalin that was buffered with sodium acetate [30 g ℓ^{-1} (UNESCO, 1974)]. Bacterial samples were preserved with 2% v/v buffered formalin. Microzooplankton species were preserved in 2% v/v Lugol's solution. Ammonium-oxidizing bacteria were enumerated by the method of Ward and Perry (1980). Samples were stored in clear, soft glass, screw-cap bottles in the dark.

Particle size distribution

Selected depths were subsampled for particle size and volume data. Particle size distributions were analyzed with a resistive pulse particle size counter (Nuclear Data pulse height analyzer, Model 2400, interfaced with Coulter Electronics glassware).

Water transparency and incident radiation

In addition to the measurements of water transparency using the beam transmissometer, a secchi disk lowering was made at most daylight stations. Daily incident radiation was monitored using a Belfort portable pyrhelimeter to determine total langleys/day reaching the sea surface during the cruise.

Phytoplankton primary productivity

Phytoplankton production was measured at depths corresponding to 95, 50, 30, 15, 5 and 1% of surface light intensity, using simulated in situ incubation techniques, but following the basic method of Steemann Nielsen (1952). The light

depths were generally selected based on data from the CTD-interfaced irradiance meter, although secchi disk lowerings were occasionally used. Two light bottles and one dark bottle per depth were inoculated with ^{14}C -labeled sodium bicarbonate and incubated on deck. Samples were cooled with running surface seawater, and light intensities were simulated with wire screen neutral density filters.

Intensive sampling

In addition to the more routine sampling described above, special measurements and experiments were conducted at selected stations, primarily on Leg III; these experiments are listed below. The experimental methods are included together with the data in the appropriate sections for those programs denoted by *.

Primary productivity measurements

 simulated in situ incubations*

Photosynthetic efficiencies (P vs. I curves and photosynthetic unit-sizes)*

Sediment traps

Zooplankton grazing and abundance*

Hydrocarbons

Current speed and direction

Nepheloid layer experiments

 nutrients

 particle counts

 total suspended particulate material

 oxidizable suspended particulate material

 ATP

 total particulate silicon

 biogenic particulate silicon

 chlorophyll

 particulate organic carbon and nitrogen

 preserved samples

 scanning electron microprobe samples

^{14}C potential productivity

 epifluorescence

 time course growth

Ammonium oxidizing bacteria

ACKNOWLEDGMENTS

The collection, reduction, and compilation of the data included in this report is, of course, due to the efforts of a great many people whose contributions are sincerely appreciated. The participants of W8009c are listed in Appendix 2. Jean Newman and Keith Kurrus helped with the final reduction and compilation of the CTD and hydrographic data. Karen Zakar did the zooplankton enumeration.

Section Plots of Measured Variables

Computer-generated contoured section plots are presented to give a visual representation of the distribution of the measured or interpolated physical, chemical, and biological parameters along the sampling section.

The CTD and bottle cast data presented in the next section were used to produce these contours. Samples were collected at locations shown as dots on the plots. The data were linearly interpolated within stations and then at selected depths between stations to produce a regularly spaced grid of points used by a computer contouring subroutine (CONLI) available in the graphics library at the University of Washington Academic Computer Center. The step transitions seen in the bottom profiles at the inshore stations are artifacts of the grid spacing.

For comparative purposes the section plots for the four east-west transects are presented first for each measured variable. These are followed by similar plots for the north-south transect.

THIS PAGE
WAS INTENTIONALLY
LEFT BLANK

CTD Plots and Data Tables

Two vertical profiles are presented for each CTD cast made during the cruise. The left-hand plot shows the temperature ($^{\circ}\text{C}$), salinity (‰), and sigma-t profile at the station. The right-hand plot shows the beam attenuation coefficient (m^{-1}), dissolved oxygen concentration (ml l^{-1}), and measured irradiance ($\log_{10}[\text{microwatts cm}^{-2}]$) in the water column. For irradiance, the useful range of the sensor is 1.8 to $-4.2 \log_{10}$ units.

The CTD plots and data tables for each station are presented together in order to consolidate as much synoptic data as possible for the station. An explanation of the data tables follows below.

The irradiance traces are included even for the nighttime casts. Part of the sensor signal may have been a response to the light at the end of the boom used to lower the instrument. Part of the sensor signal was a response to the true irradiance at night. No attempt has been made to quantify the separate effects or to determine whether the instrument was lowered on the side of the ship affected by the ship's shadow or on the side not affected by the shadow.

The CTD plots in this section of the report are limited to the upper 200 m of the water column. Separate plots were drawn with a 0-2000 m depth scale for those stations deeper than 200 m.

Explanation of Data Table Headings

Each station's data have been presented in tabular format on the following pages. Most of the heading information is readily understandable, but brief explanations of the various abbreviations and units of measurement are presented here. Blanks indicate missing observations; zeroes are measured values.

General Heading Information:

CRUISE	- Ship and local cruise designation: W = R/V Wecoma
STATION	- Numerical station designation within the given cruise
DATE	- Local date: day, month, year
TIME	- Local time of CTD cast or messenger drop; local time zone relative to GMT is in parentheses
LAT and LON	- Latitude and longitude of station in degrees and minutes
DEPTH	- Water column depth, in meters
SECCHI	- Secchi disk reading, in meters
PHOTIC	- Estimated 1% light depth, in meters
SUN AM, PM, and TOTAL	- Solar radiation in langley's $\text{m}^{-2} \cdot \text{sec}^{-1}$ AM = sunrise to local apparent noon PM = local apparent noon to sunset TOTAL = sunrise to sunset
WIND SPD and DIR	- Wind speed in knots and wind direction in degrees true
WAVE HGT, DIR, and PER	- Swell height in meters, direction in degrees true, and period in seconds
BAROMETER	- Barometric pressure in millibars
AIR DRY and WET	- Dry bulb and wet bulb air temperature readings in degrees Celsius
REL HUMIDITY	- Relative humidity in per cent
SURF TEMP	- Surface temperature in degrees Celsius

CLOUD TYPE and AMOUNT

- Dominant cloud type and percentage of sky covered

WEATHER

- Weather conditions at station, based on World Meteorological Organization code 4501

VISIBILITY

- Visibility from ship's bridge

TIDE

- Estimated tidal height in meters and tide stage based on data for Pacific Beach, Washington. Tide was estimated only for stations having ≤ 50 m of water.

Standard Parameters:

DEPTH

- Depth sampled, in meters, based on CTD readout or estimated wire out

TEMP

- Water temperature, in degrees Celsius

SAL

- Salinity, in parts per thousand

SIG-T

- Sigma-t, an expression for the density of seawater at atmospheric pressure, having the indicated temperature and salinity:
 $\sigma_t = (\text{density}-1) \times 10^{-3}$

ATTEN

- Beam attenuation coefficient, for a one meter path length

OXYGEN

- Dissolved oxygen concentration in milliliters per liter (ML/L); per cent of oxygen saturation (SAT) and apparent oxygen utilization (AOU)--in milligram-atoms per liter-- are also presented when titrated oxygen, temperature, and salinity data were all available.

PHOS, SIL, NO₃, NO₂, NH₃

- Concentrations of phosphate, silicate, nitrate, nitrite, and ammonia, respectively, all in microgram-atoms per liter

CHLA and PHAEO

- Concentrations of chlorophyll- α and phaeopigments in milligrams per cubic meter

FO/FA

- Ratio of fluorescence readings of pigment extracts before:after acidification

C-14 DEPTH

- Simulated depths at which primary productivity measurements were made using ¹⁴C techniques, in meters.

LIGHT DEPTH, %

- Per cent of maximum irradiance sample received if attenuated with neutral density screens or incubated at depths other than one sampled

SIMULATED IN SITU,
IN SITU, or CONSTANT
LIGHT

- Type of incubation used to measure ^{14}C production (results of dark bottle have been subtracted from the light bottle) of samples

-CARBON ASSIM-
LIGHT DARK

- ^{14}C production measured in light and dark bottles. Units depend on the incubation period and are milligrams carbon per cubic meter per incubation period (shown in parentheses). Normal incubation period designations are:

LAN-SS: local apparent noon to sunset

SR-SS: sunrise to sunset

SR-LAN: sunrise to local apparent noon

SR-SR: sunrise to sunrise

INCUB*: non-standard period specified in comments

HOURL: hour

ASSIM/CHLA

- ^{14}C assimilation per unit chlorophyll-*a*, in milligrams carbon assimilated per milligram chlorophyll-*a* per hour of light

SAMPLED DEPTH

- Depth, in meters, from which the indicated ^{14}C sample was taken.

(0 - xxx.x M)

- Concentrations of chlorophyll-*a* and phaeopigments in milligrams per meter squared and ^{14}C assimilation in milligrams C per meter squared per designated incubation period, integrated from the surface to the indicated depth (usually the estimated 1% light depth)

COMMENTS

- Any information pertinent to interpreting the data at a particular station is given in the form of comments at the bottom of the table for that station.

-----CRUISE W8009

STATION 991-----

DATE 24 SEP 80	SECCHI	M	WIND SPD	16KT	BAROMETER	1018.2MB	CLOUD TYPE:	STRATUS
TIME 1634(+07)	PHOTIC	35.0M	DIR	0	AIR DRY	12.2C	AMOUNT:	10%
LAT 44-55.3N	SUN AM	LY	WAVE HGT	1M	WET	11.1C	WEATHER:	PARTLY CLOUDY
LON 124-23.6W	PM	LY	DIR	310	REL HUMIDITY	88%	VISIBILITY:	20-50KM
DEPTH 189M	TOTAL	LY	PER	7SEC	SURF TEMP	11.90C	TIDE:	M

NO STANDARD BUTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/M
R = Irradiance - log(stanwatts/cm²)

-----CRUISE W8009

STATION 992-----

DATE 24 SEP 80 SECCHI M WIND SPD 18KT
 TIME 1758(+07) PHOTIC 35.0M DIR 0
 LAT 44-55.3N SUN AM LY WAVE HGT 1M
 LON 124-23.6W Pm LY DIR 310
 DEPTH 189M TOTAL LY PER 7500

BAROMETER 1017.5MB CLOUD TYPE: STRATUS
 AIR DRY 16.7C AMOUNT: 10%
 WET 14.4C WEATHER: PARTLY CLOUDY
 REL HUMIDITY 78% VISIBILITY: 20-50KM
 SURF TEMP 12.13C TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
 S = Salinity - 0/00
 D = Sigma-t

X = Oxygen - ml/l
 A = Attenuation - 1/M
 R = Irradiance - log microwatts/cm²

-----CRUISE W8009 STATION 993-----

DATE 25 SEP 80	SECCHI	M	WIND SPD 16KT	BAROMETER 1015.6MB	CLOUD TYPE: STRATUS
TIME 0325(+07)	PHOTIC	M	DIR 40	AIR DRY 13.9C	AMOUNT: 10%
LAT 46-28.9N	SUN AM	LY	WAVE HGT 3M	WET 12.8C	WEATHER: PARTLY CLOUDY
LONG 124-54.5W	PM	LY	DIR 315	REL HUMIDITY 88%	VISIBILITY: 20-50KM
DEPTH 1490M	TOTAL	LY	PER 6SEC	SURF TEMP 15.50C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - ‰/100
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/M
R = Irradiance - log(starwatts/sq cm)

-----CRUISE W8009

STATION 994-----

DATE 25 SEP 80	SECCHI	M	WIND SPD	20KT	BAROMETER	1015.2MB	CLOUD TYPE:	STRATUS
TIME 0635(+07)	PHOTIC	M	DIR	40	AIR DRY	13.3C	AMOUNT:	30%
LAT 46-37.9N	SUN AM	LY	WAVE HGT	3M	WET	12.2C	WEATHER:	PARTLY CLOUDY
LOX 125-12.0W	PM	LY	DIR	315	REL HUMIDITY	88%	VISIBILITY:	10-20KM
DEPTH 1215M	TOTAL	LY	PER	7SEC	SURF TEMP	15.21C	TIDE:	M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/100
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/M
R = Irradiance - log(storowatts/cm²)

-----CRUISE W8009

STATION 995-----

DATE 25 SEP 80 SECCHI M WIND SPD 10KT BAROMETER 1009.0MB CLOUD TYPE: CIRRUS
 TIME 1903(+07) PHOTIC 14.0M AIR DRY 15.6C AMOUNT: 80%
 LAT 47-18.2N SUN AM LY WAVE HGT 1M WET 13.6C WEATHER: PARTLY CLOUDY
 LON 124-45.0W PM LY DIR 290 REL HUMIDITY 80% VISIBILITY: 20-50KM
 DEPTH 206M TOTAL LY PER 7SEC SURF TEMP 13.84C TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

W8009 995

T = Temperature - C
 S = Salinity - 0/00
 D = Sigma-t

X = Oxygen - ml/l
 A = Attenuation - 1/M
 R = Irradiance - log(microwatts/cm)

-----CRUISE W8009

STATION 001-----

DATE 25 SEP 80 SECCHI M WIND SPD OKT BAROMETER 1007.7MB CLOUD TYPE: CIRRUS
 TIME 2312(+07) PHOTIC M D1K AIR DRY 15.0C AMOUNT: 70%
 LAT 47-21.4N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: PARTLY CLOUDY
 LON 124-30.9W PM LY DIP 290 REL HUMIDITY 83% VISIBILITY: 20-50KM
 DEPTH 41M TOTAL LY PER 5SEC SURF TEMP 14.36C TIDE: 1.4M FLOOD

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION 002-----

DATE 25 SEP 80	SECCHI	M	WIND SPD	DKT	BAROMETER 1008.2MB	CLOUD TYPE:
TIME 2350(+07)	PHOTIC	M	DIR		AIR DRY 15.0C	AMOUNT: 0%
LAT 47-26.0N	SUN AM	LY	WAVE HGT	1M	WET 13.3C	WEATHER: CLEAR
LON 124-36.3W	PM	LY	DIR	290	REL HUMIDITY 83%	VISIBILITY: 20-50KM
DEPTH 75M	TOTAL	LY	PER	5SEC	SURF TEMP 14.01C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION 003-----

DATE 26 SEP 80	SECCHI	M	WIND SPD	OKT	BAROMETER 1008.0MB	CLOUD TYPE:
TIME 0041(+07)	PHOTIC	M	DIR		AIR DRY 15.0C	AMOUNT: 0%
LAT 47-24.8N	SUN AM	LY	WAVE HGT	1M	WET 13.3C	WEATHER: CLEAR
LON 124-41.7W	PM	LY	DIR 290		REL HUMIDITY 83%	VISIBILITY: 20-50KM
DEPTH 109M	TOTAL	LY	PER 5SEC		SURF TEMP 14.40C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION 004-----

DATE 26 SEP 80	SECCHI	M	WIND SPD	5KT	BAROMETER 1008.0MB	CLOUD TYPE: CIRROSTRATUS
TIME 0115(+07)	PHOTIC	M	DIR 120		AIR DRY 14.4C	AMOUNT: 70%
LAT 47-24.1N	SUN AM	LY	WAVE HGT 1M		WET 13.3C	WEATHER: PARTLY CLOUDY
LON 124-44.4W	PM	LY	DIR 290		REL HUMIDITY 89%	VISIBILITY: 20-50KM
DEPTH 129M	TOTAL	LY	PER 5SEC		SURF TEMP 12.56C	TIDE: M

NO STANDARD BOTILE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
R = Attenuation - 1/m
R = Irradiance - log(nicounts/mq cm)

-----CRUISE W8009

STATION C05-----

DATE 26 SEP 80	SECCHI	M	WIND SPD	SKT	BAROMETER 1008.0MB	CLOUD TYPE: CIRROSTRATUS
TIME 0139(+07)	PHOTIC	M	DIR 120		AIR DRY 14.4C	AMOUNT: 70%
LAT 47-23.7N	SUN AM	LY	WAVE HGT 1M		WET 13.3C	WEATHER: PARTLY CLOUDY
LON 124-45.9W	PN	LY	DIR 290		REL HUMIDITY 89%	VISIBILITY: 20-30KM
DEPTH 146M	TOTAL	LY	PER 5SEC		SURF TEMP 12.40C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - g/kg
D = Sigma-t

X = Oxygen - ml/l
R = Attenuation - 1/m
R = Irradiance - log microwatts/cm²

-----CRUISE W8009

STATION 006-----

DATE 26 SEP 80	SECCHI	M	WIND SPD	8KT	BAROMETER 1008.0MB	CLOUD TYPE: CIRROSTRATUS
TIME 0207(+07)	PHOTIC	M	DIR 120		AIR DRY 14.4C	AMOUNT: 70%
LAT 47-23.5N	SUN AM	LY	WAVE HGT 1M		WET 13.3C	WEATHER: PARTLY CLOUDY
LONG 124-47.0W	PM	LY	DIR 290		REL HUMIDITY 89%	VISIBILITY: 20-50KM
DEPTH 422M	TOTAL	LY	PER 5SEC		SURF TEMP 12.43C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION 007-----

DATE 26 SEP 80 SECCHI
TIME 0256(+07) PHOTIC
LAT 47-23.2N SUN AM
LON 124-48.3W PM
DEPTH 786M TOTAL

M WIND SPD 8KT
M DIR 120
LY WAVE HGT 1M
LY DIR 290
LY PER 5SEC

BAROMETER 1008.0MB CLOUD TYPE: CIRROSTRATUS
AIR DRY 14.2C AMOUNT: 70%
WET 13.3C WEATHER: PARTLY CLOUDY
REL HUMIDITY 91% VISIBILITY: 20-50KM
SURF TEMP 12.34C TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION: 008-----

DATE 26 SEP 80	SECCHI	M	WIND SPD	10KT	BAROMETER	1008.0MB	CLOUD TYPE: CIRROSTRATUS
TIME 0350(+07)	PHOTIC	M	DIR	120	AIR DRY	13.9C	AMOUNT: 75%
LAT 47-22.4N	SUN AM	LY	WAVE HGT	1M	WET	13.3C	WEATHER: PARTLY CLOUDY
LOX 124-49.5W	PM	LY	DIR	250	REL HUMIDITY	94%	VISIBILITY: 20-50KM
DEPTH 891M	TOTAL	LY	PER	5SEC	SURF TEMP	12.50C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION 009-----

DATE 26 SEP 80	SECCHI	M	WIND SPD	18KT	BAROMETER	1008.0MB	CLOUD TYPE:	CIRROSTRATUS
TIME 0445(+07)	PHOTIC	M	DIR	90	AIR DRY	14.1C	AMOUNT:	60%
LAT 47-22.0N	SUN AM	LY	WAVE HGT	1M	WET	13.1C	WEATHER:	PARTLY CLOUDY
LON 124-51.1W	PM	LY	DIR	290	REL HUMIDITY	89%	VISIBILITY:	20-50KM
DEPTH 1100M	TOTAL	LY	PER	SEC	SURF TEMP	12.74C	TIDE:	M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
R = Attenuation - 1/m
A = Irradiance - log_e(microwatts/cm²)

-----CRUISE W8009

STATION 010-----

DATE 26 SEP 80	SECCHI	M	WIND SPD 15KT	BAROMETER 1008.5MB	CLOUD TYPE: STRATOCUMULUS
TIME 0605(+07)	PHOTIC	M	DIR 145	AIR DRY 14.4C	AMOUNT: 60%
LAT 47-22.6N	SUN AM	LY	WAVE HGT 1M	WET 12.8C	WEATHER: PARTLY CLOUDY
LON 124-53.9W	PM	LY	DIR 250	REL HUMIDITY 83%	VISIBILITY: 20-50KM
DEPTH 1256M	TOTAL	LY	PER SEC	SURF TEMP 13.37C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/M
R = Irradiance - log(stokes/m²/sq m)

-----CRUISE W8009 STATION 011-----

DATE 26 SEP 80 SECCHI M WIND SPD 16KT BARMETER 1009.2MB CLOUD TYPE: STRATOCUMULUS
 TIME 0723(+07) PHOTIC 38.0M DIR 170 AIR DRY 14.4C AMOUNT: 100%
 LAT 47-22.1N SUN AM LY WAVE HGT 1M WET 12.8C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-59.5W PM LY DIR 290 REL HUMIDITY 83% VISIBILITY: 20-50KM
 DEPTH 1368M TOTAL LY PER 7SEC SURF TEMP 14.35C TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
 S = Salinity - 0/100
 D = Sigma-t

X = Oxygen - ml/l
 A = Attenuation - 1/M
 R = Irradiance - log(stanquett/eq cm)

-----CRUISE W8009

STATION 012-----

DATE 26 SEP 80	SECCHI	M	WIND SPD	20KT	BARDMETER	1009.5MB	CLOUD TYPE: ALTOSTRATUS
TIME 0855(+07)	PHOTIC	40.0M	DIR	170	AIR DRY	14.2C	AMOUNT: 100%
LAT 47-21.1N	SUN AM	LY	WAVE HGT	2M	WET	13.1C	WEATHER: UNBROKEN CLOUD LAYER
LON 125-05.1W	PM	LY	DIR	290	REL HUMIDITY	88%	VISIBILITY: 10-20KM
DEPTH 1551M	TOTAL	LY	PER	6SEC	SURF TEMP	15.10C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/M
R = Irradiance - log10(watts/cm²)

-----CRUISE W8009

STATION 013-----

DATE 26 SEP 80	SECCHI	M	WIND SPD	16KT	BARDOMETER	1012.0MB	CLOUD TYPE: STRATUS
TIME 1703(+07)	PHOTIC	25.0M	DIR	170	AIR DRY	13.3C	AMOUNT: 100%
LAT 47-10.3N	SUN AM	LY	WAVE HGT	1M	WET	12.8C	WEATHER: UNBROKEN CLOUD LAYER
LON 124-47.2W	PM	LY	DIR	290	REL HUMIDITY	95%	VISIBILITY: 4-10KM
DEPTH 158M	TOTAL	LY	PER	5SEC	SURF TEMP	12.25C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/m
R = Irradiance - log(stokes/mq cm)

-----CRUISE W8009

STATION 014-----

DATE 26 SEP 80 SECCHI M WIND SPD 10KT BARMETER 1012.4MB CLOUD TYPE: STRATOCUMULUS
 TIME 1832(+07) PHOTIC 15.0M DIR 160 AIR DRY 13.3C AMOUNT: 50%
 LAT 47-17.7N SUN AM LY WAVE HGT 2M WET 12.8C WEATHER: PARTLY CLOUDY
 LON 124-44.5W PM LY DIR 290 REL HUMIDITY 95% VISIBILITY: 4-10KM
 DEPTH 159M TOTAL LY PER 7SEC SURF TEMP 12.25C TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION 015-----

DATE 26 SEP 80	SECCHI	M	WIND SPD	9KT	BAROMETER	1013.0MB	CLOUD TYPE:	STRATOCUMULUS
TIME 1939(+07)	PHOTIC	M	DIR	170	AIR DRY	13.3C	AMOUNT:	100%
LAT 47-19.5N	SUN AM	LY	WAVE HGT	2M	WET	12.8C	WEATHER:	UNBROKEN CLOUD LAYER
LON 124-44.9W	PM	LY	DIR	290	REL HUMIDITY	95%	VISIBILITY:	4-10KM
DEPTH 164M	TOTAL	LY	PER	7SEC	SURF TEMP	12.50C	TIDE:	M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/M
R = Irradiance - log(einsteins/m²/sq cm)

-----CRUISE W8009

STATION 016-----

DATE 26 SEP 80	SECCHI	M	WIND SPD 10KT	BAROMETER 1012.7MB	CLOUD TYPE: STRATOCUMULUS
TIME 2026(+07)	PHOTIC	M	DIR 160	AIR DRY 13.3C	AMOUNT: 100%
LAT 47-21.9N	SUN AM	LY	WAVE HGT 2M	WET 12.8C	WEATHER: UNBROKEN CLOUD LAYER
LOX 124-45.6W	PM	LY	DIR 290	REL HUMIDITY 95%	VISIBILITY: 10-20KM
DEPTH 160M	TOTAL	LY	PER 6SEC	SURF TEMP 12.08C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
R = Attenuation - 1/M
A = Irradiance - log(stokes/m²/sq cm)

-----CRUISE W8009

STATION 017-----

DATE 26 SEP 80	SECCHI	M	WIND SPD	8KT	BAROMETER	1013.0MB	CLOUD TYPE: STRATOCUMULUS
TIME 2117(+07)	PHOTIC	M	DIR	160	AIR DRY	13.7C	AMOUNT: 100%
LAT 47-23.7N	SUN AM	LY	WAVE HGT	1M	WET	13.1C	WEATHER: UNBROKEN CLOUD LAYER
LOX 124-46.4W	PM	LY	DIR	290	REL HUMIDITY	94%	VISIBILITY: 10-20KM
DEPTH 159M	TOTAL	LY	PER	6SEC	SURF TEMP	12.34C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION 018-----

DATE 26 SEP 80	SECCHI	M	WIND SPD 10KT	BAROMETER 1013.0MB	CLOUD TYPE: STRATOCUMULUS
TIME 2204(+07)	PHOTIC	M	DIR 160	AIR DRY 13.9C	AMOUNT: 100%
LAT 47-25.4N	SUN AM	LY	WAVE HGT 1M	WET 13.3C	WEATHER: UNBROKEN CLOUD LAYER
LOX 124-47.3W	PM	LY	DIR 290	REL HUMIDITY 94%	VISIBILITY: 10-20KM
DEPTH 161M	TOTAL	LY	PER 5SEC	SURF TEMP 11.75C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION 019-----

DATE 26 SEP 80	SECCHI	M	WIND SPD 11KT	BAROMETER 1013.0MB	CLOUD TYPE: STRATUS
TIME 2250(+07)	PHOTIC	M	DIR 160	AIR DRY 13.9C	AMOUNT: 100%
LAT 47-27.4N	SUN AM	LY	WAVE HGT 1M	WET 13.3C	WEATHER: UNBROKEN CLOUD LAYER
LON 124-49.0W	PM	LY	DIR 290	REL HUMIDITY 94%	VISIBILITY: 4-10KM
DEPTH 160M	TOTAL	LY	PER 5SEC	SURF TEMP 12.93C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/M
R = Irradiance - log(starwatts/m² cm)

-----CRUISE W8G09

STATION 020-----

DATE 26 SEP 80	SECCHI	M	WIND SPD 10KT	BARDOMETER 1013.5MB	CLOUD TYPE: STRATUS
TIME 2336(+07)	PHOTIC	M	DIR 180	AIR DRY 13.9C	AMOUNT: 100%
LAT 47-28.9N	SUN AM	LY	WAVE HGT 1M	WET 13.3C	WEATHER: UNBROKEN CLOUD LAYER
LON 124-50.7W	PM	LY	DIR 290	REL HUMIDITY 94%	VISIBILITY: 4-10KM
DEPTH 166M	TOTAL	LY	PER 5SEC	SURF TEMP 12.91C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION 021-----

DATE 27 SEP 80	SECCHI	M	WIND SPD	5KT	BAROMETER 1013.5MB	CLOUD TYPE: STRATOCUMULUS
TIME 0034(+07)	PHOTIC	M	DIR 180		AIR DRY 13.9C	AMOUNT: 100%
LAT 47-30.4N	SUN AM	LY	WAVE HGT 1M		WET 13.3C	WEATHER: UNBROKEN CLOUD LAYER
LON 124-52.4W	PM	LY	DIR 290		REL HUMIDITY 94%	VISIBILITY: 10-20KM
DEPTH 160M	TOTAL	LY	PER 5SEC		SURF TEMP 13.25C	TIDE: M

NO STANDARD BUTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION 022-----

DATE 27 SEP 80	SECCHI	M	WIND SPD	5KT	BAROMETER 1013.5MB	CLOUD TYPE: STRATOCUMULUS
TIME 0120(+07)	PHOTIC	M	DIR 210		AIR DRY 13.9C	AMOUNT: 100%
LAT 47-32.6N	SUN AM	LY	WAVE HGT 1M		WET 13.3C	WEATHER: UNBROKEN CLOUD LAYER
LON 124-53.6W	PM	LY	DIR 290		REL HUMIDITY 94%	VISIBILITY: 10-20KM
DEPTH 157M	TOTAL	LY	PER 5SEC		SURF TEMP 13.66C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION 023-----

DATE 27 SEP 80	SECCHI	M	WIND SPD	5KT	BAROMETER 1013.5MB	CLOUD TYPE: STRATOCUMULUS
TIME 0208(+07)	PHOTIC	M	DIP 210		AIR DRY 13.9C	AMOUNT: 100%
LAT 47-33.9N	SUN AM	LY	WAVE HGT 1M		WET 13.3C	WEATHER: UNBROKEN CLOUD LAYER
LON 124-55.1W	PM	LY	DIR 290		REL HUMIDITY 94%	VISIBILITY: 10-20KM
DEPTH 159M	TOTAL	LY	PER 5Sec		SURF TEMP 13.36C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/m
R = Irradiance - log(strewnets/sq cm)

-----CRUISE W8009

STATION 024-----

DATE 27 SEP 80 SECCHI M WIND SPD 8KT BARMETER 1013.1MB CLOUD TYPE: STRATOCUMULUS
 TIME 0243(+07) PHOTIC M DIR 160 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-32.2N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-58.0W PM LY DIR 290 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 187M TOTAL LY PER 5SEC SURF TEMP 14.47C TIDE: M

NO STANDARD BUTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
 S = Salinity - 0/00
 D = Sigma-t

X = Oxygen - ml/l
 A = Attenuation - 1/M
 R = Irradiance - log(stokes/m²/sq cm)

-----CRUISE W8009

STATION 025-----

DATE 27 SEP 80	SECCHI	M	WIND	SPD	BKT	BAROMETER 1013.1MB	CLOUD TYPE: STRATOCUMULUS
TIME 0307(+07)	PHOTIC	18.0M	DIR	160		AIR DRY 13.9C	AMOUNT: 100%
LAT 47-31.7N	SUN AM	LY	WAVE	HGT 1M		WET 13.3C	WEATHER: UNBROKEN CLOUD LAYER
LON 124-58.6W	PM	LY	DIR	290		REL HUMIDITY 94%	VISIBILITY: 10-20KM
DEPTH 329M	TOTAL	LY	PER	5SEC		SURF TEMP 14.55C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
R = Attenuation - 1/M
I = Irradiance - log(strewna/m²/sq m)

-----CRUISE W8009

STATION 026-----

DATE 27 SEP 80 SECCHI M WIND SPD 6KT BARMETER 1013.5MB CLOUD TYPE: STRATUS
 TIME 0353(+07) PHOTIC 19.0M DIR 170 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-30.3N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-01.2W PM LY DIR 290 REL HUMIDITY 94% VISIBILITY: 4-10KM
 DEPTH 885M TOTAL LY PER 5SEC SURF TEMP 14.48C TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
 S = Salinity - 0/00
 D = Sigma-t

X = Oxygen - ml/l
 R = Attenuation - 1/m
 I = Irradiance - log(stokes/m² cm)

-----CRUISE W8009

STATION 027-----

DATE 27 SEP 80	SECCHI	M	WIND	SPD	OKT	BAROMETER 1013.0MB	CLOUD TYPE: STRATOCUMULUS
TIME 0453(+07)	PHOTIC	M		DIR		AIR DRY 13.6C	AMOUNT: 100%
LAT 47-29.5N	SUN AM	LY	WAVE	HGT 1M		WET 13.1C	WEATHER: UNBROKEN CLOUD LAYER
LON 125-02.1W	PM	LY		DIR 290		REL HUMIDITY 95%	VISIBILITY: 4-10KM
DEPTH 988M	TOTAL	LY		PER 7SEC		SURF TEMP 14.62C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
R = Attenuation - 1/M
I = Irradiance - log(stokes/m²/sq cm)

-----CRUISE W8009

STATION 028-----

DATE 27 SEP 80	SECCHI	M	WIND SPD	OKT	BAROMETER 1012.6MB	CLOUD TYPE: STRATOCUMULUS
TIME 0703(+07)	PHOTIC	36.0M	DIR		AIR DRY 13.6C	AMOUNT: 100%
LAT 47-20.7N	SUN AM	LY	WAVE HGT	2M	WET 13.1C	WEATHER: UNBROKEN CLOUD LAYER
LON 124-54.3W	PM	LY	DIR	290	REL HUMIDITY 95%	VISIBILITY: 10-20KM
DEPTH 1148M	TOTAL	LY	PER	7SEC	SURF TEMP 14.08C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/M
R = Irradiance - log(einsteins/m²/sq cm)

-----CRUISE W8009

STATION 029-----

DATE 27 SEP 80	SECCHI	M	WIND SPD	8KT	BAROMETER	1012.5MB	CLOUD TYPE:	STRATOCUMULUS
TIME 0811(+07)	PHOTIC	30.0M	SIP	160	AIR DRY	13.9C	AMOUNT:	100%
LAT 47-19.4N	SUN AM	LY	WAVE HGT	1M	WET	13.3C	WEATHER:	UNBROKEN CLOUD LAYER
LON 124-52.2W	PM	LY	DIR	290	REL HUMIDITY	94%	VISIBILITY:	10-20KM
DEPTH 854M	TOTAL	LY	PER	5SEC	SURF TEMP	13.39C	TIDE:	M

ND STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - g/kg
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/m
R = Irradiance - log microwatts/cm²

-----CRUISE W8009

STATION 030-----

DATE 27 SEP 80 SECCHI M WIND SPD 10KT BARMETER 1012.5MB CLOUD TYPE: STRATOCUMULUS
 TIME 0912(+07) PHOTIC 30.0M DIR 170 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-18.5N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-51.5W PM LY DIR 290 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 324M TOTAL LY PER 5SEC SURF TEMP 13.81C TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

-----CRUISE W8009

STATION 031-----

DATE 27 SEP 80	SECCHI 9.0M	WIND SPD 12KT	BAROMETER 1013.0MB	CLOUD TYPE: STRATOCUMULUS
TIME 0952(+07)	PHOTIC 24.0M	DIR 150	AIR DRY 13.9C	AMOUNT: 100%
LAT 47-18.3N	SUN AM	WAVE HGT 1M	WET 13.3C	WEATHER: UNBROKEN CLOUD LAYER
LON 124-50.5W	PM	DIR 290	REL HUMIDITY 94%	VISIBILITY: 10-20KM
DEPTH 249M	TOTAL	PER 5SEC	SURF TEMP 13.40C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/m
R = Irradiance - log microwatts/cm²/nm

-----CRUISE W8009

STATION 032-----

DATE 27 SEP 80 SECCHI M WIND SPD 10KT BAROMETER 1013.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 1019(+07) PHOTIC 26.0M DIR 170 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-17.7N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-49.3W PM LY DIR 290 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 183M TOTAL LY PER 5SEC SURF TEMP 13.05C TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
 S = Salinity - 0/00
 D = Sigma-t

X = Oxygen - ml/l
 R = Attenuation - 1/M
 R = Irradiance - log microwatts/cm²/nm

-----CRUISE W8009

STATION 033-----

DATE 27 SEP 80	SECCHI	M	WIND SPD	9KT	BAROMETER	1012.8MB	CLOUD TYPE:	STRATOCUMULUS
TIME 1053(+07)	PHOTIC	24.3M	DIR	160	AIR DRY	14.1C	AMOUNT:	100%
LAT 47-16.3N	SUN AM	LY	WAVE HGT	1M	WET	13.6C	WEATHER:	UNBROKEN CLOUD LAYER
LOX 124-47.2W	PM	LY	DIR	290	REL HUMIDITY	95%	VISIBILITY:	10-20KM
DEPTH 155M	TOTAL	LY	PER	5SEC	SURF TEMP	12.68C	TIDE:	M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
 S = Salinity - ‰
 D = Sigma-t

X = Oxygen - ml/l
 R = Attenuation - 1/m
 A = Irradiance - log(microwatts/cm²)

-----CRUISE W8009

STATION 034-----

DATE 27 SEP 80 SECCHI 5.0M WIND SPD 8KT BAROMETER 1012.4MB CLOUD TYPE: STRATUS
 TIME 1717(+07) PHOTIC 13.5M DIR 210 AIR DRY 12.8C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 1M WET 12.2C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-13.1W PM LY DIR 290 REL HUMIDITY 93% VISIBILITY: 4-10KM
 DEPTH 15M TOTAL LY PER 5SEC SURF TEMP 13.37C TIDE: 2.3M EBB

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FG/FA
					ML/L SAT AUU	---MICROGRAM-ATOMS/LITER---					---MG/M3---		
2.5	13.37	30.569	22.92	1.514	5.45	.94	28.85	5.42	.10	1.20			
10.0	13.36	30.546	22.94	1.444	5.57	.93	28.10	5.29	.11	1.39

-----CRUISE W8009 STATION 035-----

DATE 27 SEP 80 SECCHI 4.0M WIND SPD 15KT BAROMETER 1012.8MB CLOUD TYPE: STRATUS
 TIME 1753(+07) PHOTIC 10.5M DIR 190 AIR DRY 12.8C AMOUNT: 100%
 LAT 47-07.1N SUN AM LY WAVE HGT 2M WEI 12.2C WEATHER: FOG OR HAZE
 LON 124-15.0W PM LY DIR 290 REL HUMIDITY 93% VISIBILITY: 2-4KM
 DEPTH 27M TOTAL LY PER 7SEC SURF TEMP 13.43C TIDE: 1.8M Ebb

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
7.5	13.37	30.563	22.91	1.534	5.21								
18.5	12.53	31.176	23.55	1.153	4.68								
21.0	12.26	31.353	23.74	1.208	4.74

-----CRUISE W8009

STATION 036-----

DATE 27 SEP 80 SECCHI M WIND SPD 15KT BAROMETER 1012.5MB CLOUD TYPE: STRATUS
 TIME 1824(+07) PHOTIC 10.5M DIR 190 AIR DRY 12.9C AMOUNT: 100%
 LAT 47-07.1N SUN AM LY WAVE HGT 2M WET 12.5C WEATHER: FOG OR HAZE
 LON 124-17.9W PM LY DIR 290 REL HUMIDITY 96% VISIBILITY: 4-10KM
 DEPTH 38M TOTAL LY PER 7SEC SURF TEMP 13.73C TIDE: 1.4M EBB

DEPTH M	TEMP C	SAL O/GO	SIG-T	ATTEN /M	----OXYGEN---- ML/L SAT ADU	PHOS SIL NO3 NO2 NH3 ---MICROGRAM-ATOMS/LITER---	CHLA PHAEO PG/FA ---MG/M3---
8.0	13.12	30.790	23.14	1.314	4.91		
22.0	11.81	31.640	24.04	1.056	4.38		
32.0	9.35	32.957	25.49	1.434	3.01

-----CRUISE W8009

STATION 037-----

DATE 27 SEP 80 SECCHI M WIND SPD 15KT BAROMETER 1012.5MB CLOUD TYPE: STRATUS
 TIME 1904(+07) PHOTIC 13.5M DIR 190 AIR DRY 13.1C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 2M WET 12.8C WEATHER: FCG DR HAZE
 LON 124-22.5W PM LY DIK 290 REL HUMIDITY 97% VISIBILITY: 4-10KM
 DEPTH 51M TOTAL LY PER 7SEC SURF TEMP 13.82C TIDE: 1.1M EBR

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHUS -----MICROGRAM-ATOMS/LITER----	SIL	NO3	NO2	NH3	CHLA	PHAEO	FL/FA
6.5	13.83	30.960	23.13	1.362	5.63	.60	20.90	1.53	.02	1.02			
10.5	13.67	31.100	23.27	1.372	5.42	.61	20.80	1.59	.00	.93			
22.0	9.71	32.751	25.27	1.122	2.89	2.11	42.10	19.49	.08	1.83			
34.0	8.14	33.440	26.05	1.812	1.58	2.74	57.60	28.64	.06	2.38			
41.0	8.10	33.453	26.07	1.625	1.73	2.74	57.50	28.89	.06	2.07			
49.0	7.96	33.511	26.13	1.219	1.96	2.70	57.70	29.85	.04	1.50

-----CRUISE W8009 STATION 038-----

DATE 27 SEP 80 SECCHI M WIND SPD 16KT BAROMETER 1012.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 1950(+07) PHOTIC 12.0M DIR 190 AIR DRY 13.2C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 2M WET 13.1C WEATHER: RAIN
 LON 124-26.7W PM LY DIR 290 REL HUMIDITY 99% VISIBILITY: 4-10KM
 DEPTH 57M TOTAL LY PER 6SEC SURF TEMP 13.85C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---	SIL ---	NO3 ---	NO2 ---	NH3 ---	CHLA ---	PHAED ---	FD/FA ---
8.5	13.85	31.695	23.69	1.391	5.54								
31.0	7.93	33.393	26.04	.514	2.57								
41.0	7.82	33.610	26.23	.833	1.75								
51.0	7.82	33.613	26.23	.825	1.80

-----CRUISE W8009 STATION 039-----

DATE 27 SEP 80 SECCHI M WIND SPD 20KT BAROMETER 1012.0MB CLOUD TYPE: NIMBOSTRATUS
 TIME 2050(+07) PHOTIC 16.0M DIR 170 AIR DRY 13.3C AMOUNT: 100%
 LAT 47-06.9N SUN AM LY WAVE HGT 2M WET 13.3C WEATHER: RAIN
 LON 124-32.9W PM LY DIR 290 REL HUMIDITY 100% VISIBILITY: 4-10KM
 DEPTH 72M TOTAL LY PER 6SEC SURF TEMP 13.95C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS -----MICROGRAM-ATOMS/LITER----	SIL NO3 NO2 NH3 ---MG/M3---	CHLA PHAEO PG/FA
8.0	13.95	31.465	23.49	1.536	5.35			
33.0	5.02	33.300	25.96	.486	3.07			
53.0	7.82	33.705	26.31	.881	2.22			
68.0	7.82	33.735	26.33	.934	2.44

-----CRUISE W8009

STATION 040-----

DATE 27 SEP 80 SECCHI M WIND SPD 22KT BAROMETER 1011.2MB CLOUD TYPE: NIMBOSTRATUS
 TIME 2145(+07) PHOTIC 18.0M DIR 160 AIR DRY 13.3C AMOUNT: 100%
 LAT 47-07.1N SUN AM LY WAVE HGT 2M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-40.0W PM LY DIR 290 REL HUMIDITY 100% VISIBILITY: 4-10KM
 DEPTH 101M TOTAL LY PER 6SEC SURF TEMP 13.88C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
9.0	13.85	31.710	23.70	1.037	5.31	.08	12.55	.71		.64			
52.0	7.81	33.280	26.21	.499	2.74	2.71	39.66	26.34		.37			
74.0	7.56	33.844	26.45	.674	1.77	2.66	63.43	29.43		.37			
96.0	7.54	33.852	26.46	.916	1.65	2.76	63.24	30.19		.64			

NO2 NOT MEASURED, SO NO3 = NO3+NO2

-----CRUISE W8009

STATION 041-----

DATE 27 SEP 80 SECCHI M WIND SPD 24KT BARMETER 1011.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 2240(+07) PHOTIC 21.0M DIR 160 AIR DRY 13.1C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 2M WET 13.1C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-47.3W PM LY DIR 290 REL HUMIDITY 100% VISIBILITY: 4-10KM
 DEPTH 132M TOTAL LY PER 6SEC SURF TEMP 12.80C TIDE: M

DEPTH M	TEMP C	SAL O/DO	SIG-T	ATTEN /M	----OXYGEN---- ML/L SAT AQU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA	PHAED	FD/FA
9.0	12.79	32.238	24.32	1.475	5.94	.65	7.63	1.76		.82			
53.0	7.84	33.545	26.18	.460	3.06	2.03	33.65	23.35		.68			
102.0	7.55	33.840	26.45	.603	1.49	2.72	60.54	29.97		.62			
126.0	7.50	33.856	26.47	1.042	1.59	2.80	63.65	30.26		.66			

NO2 NOT MEASURED, SO NO3 = NO3+NO2

-----CRUISE W8009

STATION 042-----

DATE 27 SEP 80	SECCHI	M	WIND SPD	20KT	BAROMETER	1011.0MB	CLOUD TYPE:	STRATUS
TIME 2340(+07)	PHOTIC	25.0M	DIR	160	AIR DRY	12.8C	AMOUNT:	100%
LAT 47-07.0N	SUN AM	LY	WAVE HGT	2M	WET	12.8C	WEATHER:	DRIZZLE
LOGN 124-54.5W	PM	LY	DIR	290	REL HUMIDITY	100%	VISIBILITY:	4-10KM
DEPTH 156M	TOTAL	LY	PER	6SEC	SURF TEMP	13.37C	TIDE:	M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/m
R = Irradiance - log10(candela/m²)

THIS PAGE
WAS INTENTIONALLY
LEFT BLANK

-----CRUISE W8009

STATION 043-----

DATE 28 SEP 80 SECCHI M WIND SPD 16KT BAROMETER 1011.4MB CLOUD TYPE: STRATUS
 TIME 0024(+07) PHOTIC 27.0M DIR 170 AIR DRY 12.8C AMOUNT: 100%
 LAT 47-06.9N SUN AM LY WAVE HGT 2M WET 12.8C WEATHER: DRIZZLE
 LON 124-58.4W PM LY DIR 290 REL HUMIDITY 100% VISIBILITY: 4-10KM
 DEPTH 303M TOTAL 145LY PER 6SEC SURF TEMP 14.11C TIDE: M

DEPTH M	TEMP C	SAL O/100	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHUS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
12.5	15.51	32.332	24.25	.643	5.91	.58	7.63	1.08		1.26			
62.0	7.94	33.266	25.94	.427	4.26								
122.0	7.46	33.865	26.48	.668	1.59	2.67	57.25	30.00		.91			
175.0	7.21	33.925	26.56	.746	1.45	2.77	61.45	31.08		.70			
254.0	6.99	33.960	26.62	.646	1.65	2.72	61.45	31.62		.77			
293.0	6.62	34.003	26.71	.547	1.85	2.69	62.21	31.74		.84			

NO2 NOT MEASURED, SO NO3 = NO3+NO2

-----CRUISE W8009

STATION 044-----

DATE 28 SEP 80 SECCHI M WIND SPD 17KT BAROMETER 1011.1MB CLOUD TYPE: NIMBOSTRATUS
 TIME 0121(+07) PHOTIC 27.0M DIR 170 AIR DRY 13.2C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 3M WET 13.2C WEATHER: RAIN
 LON 125-01.5W PM LY DIR 290 REL HUMIDITY 100% VISIBILITY: 4-10KM
 DEPTH 798M TOTAL 145LY PER 6SEC SURF TEMP 14.22C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T /M	ATTEN /M	----OXYGEN---- ML/L SAT ADU	PHUS ---	SIL ---	NO3 ---	NO2 ---	NH3 ---	CHLA ---	PHAEO ---	FG/FA ---
8.5	13.52	32.274	24.20	.679	5.97								
142.0	7.46	33.867	26.46	.608	1.97								
181.0	7.26	33.944	26.57	.449	2.42								
220.0	7.03	33.967	26.62	.548	1.89								
497.0	2.08	34.115	26.99	.440	.85								
794.0	4.28	34.265	27.19	.492	.41								

W8009 D45

-----CRUISE W8009

STATION 045-----

DATE 28 SEP 80 SECCHI M WIND SPD 17KT BARMETER 1011.5MB CLOUD TYPE: STRATUS
 TIME 0303(+07) PHOTIC 27.0M DIR 180 AIR DRY 13.6C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 3M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-09.1W PM LY DIR 290 REL HUMIDITY 97% VISIBILITY: 4-10KM
 DEPTH 1488M TOTAL 145LY PER 6SEC SURF TEMP 14.05C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T /M	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---	SIL ---	NO3 ---	NO2 ---	NH3 ---	CHLA ---	PHAEO ---	FD/FA ---
10.0	13.99				.696								
203.0	7.18				.615								
993.0	3.51				.430								
1480.0	2.59				.562								

CTD CONDUCTIVITY SENSOR PLUGGED WITH MUD DURING THIS CAST.

W8009 046

-----CRUISE W8009 STATION 046-----

DATE 28 SEP 80 SECCHI M WIND SPD 16KT BARMETER 1011.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 0446(+07) PHOTIC 27.0M DIR 175 AIR DRY 14.1C AMOUNT: 100%
 LAT 47-06.8N SUN AM LY WAVE HGT 3M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-16.3W PM LY DIR 290 REL HUMIDITY 92% VISIBILITY: 10-20KM
 DEPTH 1640M TOTAL 145LY PER 6SEC SURF TEMP 13.98C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T /M	ATTEN /M	----OXYGEN----	PHOS ML/L SAT	SIL ADU	NO3 ---	NO2 ---	NH3 ---	CHLA ---	PHAEO ---	FC/FA ---
9.5	13.93												
183.0	7.21												
994.0	3.48												
1632.0	2.28												

CTD CONDUCTIVITY SENSOR PLUGGED WITH MUD DURING THIS CAST.

-----CRUISE W8009

STATION 047-----

DATE 26 SEP 80 SECCHI M WIND SPD 14KT BAROMETER 1012.5MB CLOUD TYPE: STRATUS
 TIME 0640(+07) PHOTIC 30.0M DIR 180 AIR DRY 14.9C AMOUNT: 100%
 LAT 47-06.8N SUN AM LY WAVE HGT 2M WET 13.9C WEATHER: UNBROKEN CLOUD LAYER
 LON 123-23.5W PM LY DIR 290 REL HUMIDITY 90% VISIBILITY: 4-10KM
 DEPTH 1677M TOTAL 145LY PER 7SEC SURF TEMP 13.86C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL ---	NO3 ---	NO2 ---	NH3 ---	CHLA ---MG/M3---	PHAEO ---	FO/FA ---
14.0	13.06	32.322	24.33	.712	6.46 107 -.040								
44.0	8.74	32.629	25.33	.459	6.57 100 .002								
226.0	6.86	33.980	26.66	.543	1.78 26 .451								
350.0	6.04	34.029	26.80	.462	1.64 24 .475								
480.0	5.07	34.080	26.96	.411	.99 14 .548								
845.0	3.92	34.332	27.29	.408	.38 5 .619								
1670.0	2.22	34.568	27.63	.442	1.25

-----CRUISE W8009

STATION 048-----

DATE 28 SEP 80 SECCHI 17.0M WIND SPD 11KT BARMETER 1012.2MB CLOUD TYPE: STRATUS
 TIME 0849(+07) PHOTIC 30.0M DIR 190 AIR DRY 15.3C AMOUNT: 100%
 LAT 47-07.2N SUN AM LY WAVE HGT 2M WET 14.8C WEATHER: FOG OR HAZE
 LON 125-34.0W PM LY DIR 290 REL HUMIDITY 95% VISIBILITY: 4-10KM
 DEPTH 1661M TOTAL 145LY PER 6SEC SURF TEMP 14.37C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
					ML/L SAT	ADU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---		
279.0	6.38	34.002	26.74	.443	2.04								
378.0	5.85	34.044	26.84	.441	1.42								
892.0	3.70	34.331	27.31	.407	.32								
1344.0	2.87	34.489	27.51	.427	.67								
1650.0	2.16	34.576	27.64	.441	1.30

-----CRUISE W8009

STATION 049-----

DATE 28 SEP 80 SECCHI 14.0M WIND SPD 12KT BAROMETER 1013.2MB CLOUD TYPE: STRATOCUMULUS
 TIME 1046(+07) PHOTIC 27.0M DIR 190 AIR DRY 14.3C AMOUNT: 100%
 LAT 47-07.1N SUN AM LY WAVE HGT 2M WET 14.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-45.0W PM LY DIR 190 REL HUMIDITY 100% VISIBILITY: 10-20KM
 DEPTH 1713M TOTAL 145LY PER 6SEC SURF TEMP 13.87C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN---- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA	PHAEO	FG/FA
10.0	13.80	32.275	24.15	.840	6.42								
177.0	5.94	33.961	26.63	.444	2.46								
249.0	6.40	34.008	26.74	.467	1.85								
976.0	3.58	34.385	27.36	.407	.36								
1703.0	2.23	34.568	27.63	.435	1.22

-----CRUISE W8009

STATION 049-----

DATE 28 SEP 80 SECCHI 14.0M WIND SPD 10KT SARMETER 1014.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 1230(+07) PHOTIC 30.0M DIR 190 AIR DRY 14.2C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 2M WET 14.0C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-44.8W PM LY DIR 190 REL HUMIDITY 98% VISIBILITY: 10-20KM
 DEPTH 1713M TOTAL 145LY PER 6SEC SURF TEMP 13.69C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FC/FA
					ML/L	SAT	AUJ	---	MICROGRAM	---	ATOMS/LITER	---	MG/M3	---
1.0	13.91	32.266	24.12	.948	6.38	108	-.042	.55	10.11	.37	.13	.64	1.03	.50 1.67
7.0	13.89	32.266	24.12	.877	6.41	108	-.045	.56	9.58	.36	.13	1.12	.94	.41 1.70
12.0	13.88	32.267	24.12	.869	6.57	111	-.059	.56	9.42	.36	.13	.86	1.03	.34 1.75
17.0	13.85	32.269	24.13	.833	6.33	107	-.036	.56	9.26	.35	.13	.90	.84	.34 1.71
27.0	11.54	32.482	24.74	.651	6.64	107	-.039	.75	9.66	2.17	.23	1.19	.78	.50 1.61
37.0	9.74	32.601	25.15	.529	6.78	105	-.030	.86	11.00	3.59	.27	1.06	.41	.30 1.57
48.0	8.85	32.616	25.30	.473	6.52	99	.006	1.02	13.00	6.24	.49	1.01	.23	.25 1.48
58.0	8.56	32.649	25.37	.452	6.24	98	.014	1.14	14.90	8.99	.22	.58	.17	.19 1.46
72.0	8.26	32.937	25.64	.430	5.32	80	.119	1.47	20.80	15.10	.11	.60	.09	.11 1.43
97.0	7.92	33.493	26.12	.420	4.02	60	.238	1.91	31.40	23.38	.12	.57	.03	.07 1.30
151.0	7.35	33.912	26.54	.431	2.83	42	.351	2.32	45.20	29.56	.12	.95	.04	.09 1.31
(C- 30.0M)													26.42	12.42MG/M2

C-14				-----SIMULATED IN SITU-----				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAEO	FC/FA	LIGHT DEPTH %	-CARBON LIGHT MG/M3/(INCUB*)	ASSIM- DARK MG/MG/(HR OF LIGHT)	ASSIM/CHLA	
.5	1.03	.50	1.67	93.0	90.05	1.35	7.37	1.0
4.5	.94	.40	1.70	50.0	26.23	1.22	2.35	7.0
7.0	.94	.40	1.70	34.0	16.14	1.42	1.45	7.0
12.0	1.03	.34	1.75	15.0	7.01	1.15	.57	12.0
17.0	.84	.34	1.71	7.0	4.74	1.68	.48	17.0
30.0	.41	.50	1.61	1.0	.24	1.08	.05	37.0
(0- 30.0M)	26.42	12.42MG/M2			450.17MGC/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 11M
 C-14 SAMPLES INCUBATED FROM 1340, 28 SEPTEMBER TO 1342, 29 SEPTEMBER
 FOR A TOTAL OF 11.87 DAYLIGHT HOURS. INSULATION TOTALED 112 LANGLEYS
 DURING THIS EXPERIMENT.

T = Temperature - C
 S = Salinity - g/kg
 D = Sigma-t

X = Oxygen - ml/l
 A = Attenuation - 1/m
 R = Irradiance - log(stokes/cm² sec)

-----CRUISE W6009

STATION 050-----

DATE 28 SEP 80 SECCHI 15.0M WIND SPD 13KT BAROMETER 1014.2MB CLOUD TYPE: STRATOCUMULUS
 TIME 1405(+07) PHOTIC 36.0M DIR 190 AIR DRY 15.0C AMOUNT: 90%
 LAT 47-07.1N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: PARTLY CLOUDY
 LON 125-34.1W PM LY DIR 190 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 1673M TOTAL 145LY PER 6SEC SURF TEMP 14.36C TIDE: M

DEPTH M	TEMP C	SAL O/100	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO	FO/FA
2.5	14.34	32.206	23.98	.650	6.24 106 -.033	.56	6.30	.16	.15	.82	.56	.22	1.72
12.0	13.69	32.289	24.18	.819	6.75 114 -.073	.62	8.07	.85	.15	.69	1.09	.50	1.69
23.0	11.65	32.442	24.69	.734	6.67 108 -.043	.82	9.64	3.04	.28	.85	1.03	.50	1.67
33.0	9.42	32.602	25.20	.528	6.76 104 -.024	.99	11.20	5.23	.32	1.09	.39	.27	1.59
43.0	8.78	32.644	25.33	.471	6.21 94 .033	1.17	14.36	9.00	.36	.87	.21	.19	1.52
53.0	8.46	32.677	25.41	.445	6.21 94 .037	1.21	14.65	9.88	.29	.52	.04	.15	1.20
63.0	8.14	32.740	25.50	.431	6.50 97 .016	1.26	15.64	11.12	.25	.38	.06	.09	1.40
78.0	8.05	32.968	25.69	.425	5.48 82 .106	1.46	19.28	19.27	.14	.40	.06	.10	1.36
103.0	7.88	33.399	26.06	.422	4.60 69 .187	1.80	26.76	21.58	.13	.55	.05	.05	1.49
152.0	7.56	33.812	26.43	.423	3.48 52 .289	2.13	37.68	27.17	.12	.60	.04	.04	1.47
(0- 36.0M)											29.09	14.09MG/M2

-----CRUISE W8009

STATION 051-----

DATE 28 SEP 80 SECCHI 12.0M WIND SPD 10KT BARMETER 1015.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 1617(+07) PHOTIC 32.0M DIR 190 AIR DRY 15.0C AMOUNT: 90%
 LAT 47-07.1N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: PARTLY CLOUDY
 LON 125-23.7W PM LY DIR 190 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 1691M TOTAL 145LY PER 6SEC SURF TEMP 13.96C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FC/FA
					ML/L SAT ADU	---	---	---	---	---	---	---	---
3.0	13.95	32.298	24.13	.801	6.25 106 -.031	.58	7.61	.57	.15	.69	.70	.20	1.78
12.0	13.93	32.299	24.14	.792	6.26 106 -.031	.58	7.18	.57	.14	.51	.66	.20	1.77
21.0	13.44	32.311	24.25	.735	6.29 105 -.028	.63	7.28	.64	.14	.59	.66	.25	1.72
27.0	13.06	32.346	24.35	.713	6.32 105 -.027	.69	8.45	1.50	.16	1.05	.69	.31	1.69
33.0	11.16	32.511	24.83	.640	6.80 109 -.048	.75	7.49	1.43	.18	.83	.67	.32	1.68
44.0	9.46	32.618	25.20	.532	6.60 102 -.009	.94	9.74	4.48	.41	.73	.48	.32	1.60
54.0	8.84	32.626	25.31	.473	6.55 99 .004	1.04	11.30	6.01	.41	.98	.27	.26	1.51
64.0	8.43	32.679	25.41	.433	6.32 95 .029	1.15	12.90	9.05	.27	.30	.12	.12	1.51
79.0	8.17	32.972	25.68	.425	5.52 83 .102	1.43	18.20	14.33	.12	.22	.06	.08	1.43
104.0	7.93	33.432	26.07	.447	3.81 57 .256	2.01	32.20	23.64	.16	.56	.04	.10	1.28
152.0	7.34	33.890	26.52	.535	2.12 31 .414	2.57	54.00	31.95	.08		.02	.12	1.14
(0- 32.0M)											21.62	7.68MG/M2	

129

C-14				SIMULATED IN SITU				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAED	FC/FA	DEPTH %	-CARBON ASSIM- LIGHT DARK MG/M3/(INCUB*)	ASSIM/CHLA MG/MG/(HR OF LIGHT)		
3.5	.70	.20	1.78	96.0	88.21	1.65	10.57	3.0
4.5	.66	.20	1.72	51.0	12.15	1.13	1.54	12.0
8.5	.66	.20	1.72	30.0	9.28	1.18	1.18	12.0
14.0	.66	.25	1.72	14.0	6.85	1.08	.67	21.0
19.5	.69	.31	1.69	6.0	2.34	.64	.28	27.0
32.0	.48	.32	1.60	1.0	.18	.99	.03	44.0
(0- 32.0M)	21.62	7.68MG/M2			372.97MGC/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 12M.
 C-14 SAMPLES INCUBATED FROM 1720, 28 SEPTEMBER TO 1723, 29 SEPTEMBER
 FOR A TOTAL OF 11.92 DAYLIGHT HOURS. INSOLATION TOTALED 79 LANGLEYS
 DURING THIS EXPERIMENT.

-----CRUISE W8009

STATION 052-----

DATE 28 SEP 80 SECCHI 10.0M WIND SPD 17KT BAROMETER 1015.1MB CLOUD TYPE: STRATOCUMULUS
 TIME 1737(+07) PHOTIC 32.0M DIR 180 AIR DRY 15.0C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 2M WET 14.0C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-16.2W PM LY DIR 190 REL HUMIDITY 90% VISIBILITY: 10-20KM
 DEPTH 1607M TOTAL 145LY PER 6SEC SURF TEMP 13.72C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----			PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	PO/FA
					ML/L	SAT	AQU	---	---MICROGRAM---	---ATOMS/LITER---	---	---	---MG/M3---	---	---
2.0	13.71	32.275	24.16	.888	6.59	111	-.058	.60	5.53	.97	.11	.77	1.03	.44	1.70
11.0	13.68	32.273	24.17	.884	6.40	108	-.041	.62	5.35	.96	.12	.52	1.00	.47	1.68
23.0	13.28	32.279	24.25	.827	6.46	108	-.042	.63	5.54	1.38	.12	.64	1.09	.34	1.76
33.0	10.85	32.492	24.87	.625	6.60	105	-.026	.82	6.83	3.03	.34	1.85	.68	.24	1.74
43.0	9.21	32.605	25.23	.505	6.62	102	-.009	1.01	9.97	5.39	.41	1.02	.31	.22	1.59
53.0	8.58	32.641	25.36	.462	6.35	96	.024	1.11	12.00	8.07	.27	.34	.23	.15	1.60
64.0	8.27	32.863	25.58	.433	5.56	84	.097	1.39	17.40	13.41	.09	.26	.08	.06	1.55
78.0	8.09	33.170	25.85	.423	4.84	73	.164	1.66	22.90	18.62	.08	.40	.05	.04	1.53
103.0	7.92	33.539	26.16	.456	3.39	51	.294	2.13	33.70	25.92	.08	.53	.04	.10	1.29
152.0	7.34	33.894	26.52	.545	2.17	32	.409	2.53	52.00	30.91	.09	.33	.05	.09	1.33
(0- 32.0M)													31.88	12.49MG/M2

T = Temperature - C
 S = Salinity - g/kg
 D = Sigma-t

X = Oxygen - ml/l
 A = Attenuation - 1/m
 R = Irradiance - log microwatts/cm²

-----CRUISE W6009

STATION 053-----

DATE 28 SEP 80 SECCHI M WIND SPD 20KT BARMETER 1015.5MB CLOUD TYPE: STRATOCUMULUS
 TIME 1913(+07) PHOTIC 32.0M DIR 180 AIR DRY 15.0C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 2M WET 13.9C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-09.0W PM LY DIR 190 REL HUMIDITY 89% VISIBILITY: 10-20KM
 DEPTH 1470M TOTAL 145LY PER 6SEC SURF TEMP 13.43C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----			PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FD/FA
					ML/L	SAT	AOU	---	---MICROGRAM---	---ATOMS/LITER---			---MG/M3---		
2.0	13.43	32.254	24.20	.927	6.43	108	-.041	.68	9.63	1.76	.18	.90	.94	.34	1.73
10.0	13.26	32.254	24.24	.900	6.71	112	-.064	.70	9.39	2.07	.17	.83	.94	.47	1.67
20.0	12.24	32.313	24.48	.834	6.57	107	-.040	.87	10.90	4.31	.26	.92	1.00	.53	1.65
30.0	9.51	32.579	25.17	.527	6.35	98	.012	1.11		7.60	.46	.75	.32	.27	1.54
41.0	9.06	32.611	25.26	.497	6.54	100	.001	1.06		6.68	.43		.27	.28	1.49
50.0	8.56	32.666	25.38	.458	6.21	94	.037	1.15	13.70	9.05	.26	.28	.16	.16	1.50
73.0	8.09	33.159	25.64	.424	4.95	74	.154	1.61	21.80	17.75	.15	.34	.04	.04	1.53
99.0	7.97	33.484	26.11	.442	3.81	57	.256	2.01	31.80	24.50	.10	.33	.05	.06	1.46
149.0	7.74	33.828	26.41	.441	2.82	42	.346	2.27	39.50	29.00	.10	.40	.21	.06	1.78
(0-32.0M)													26.33	13.46MG/M2

-----CRUISE W8009 STATION 054-----

DATE 28 SEP 30 SECCHI M WIND SPD 21KT BARMETER 1015.3MB CLOUD TYPE: STRATOCUMULUS
 TIME 2020(+07) PHOTIC 32.0M DIR 180 AIR DRY 14.8C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 2M WET 13.9C WEATHER: UNBROKEN CLOUD LAYER
 LGN 125-01.7W PM LY DIR 190 REL HUMIDITY 91% VISIBILITY: 10-20KM
 DEPTH 780M TOTAL 145LY PER 6SEC SURF TEMP 13.73C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---			PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
					ML/L	SAT	ADU	---MICROGRAM---	---ATOMS/LITER---				---MG/M3---		
2.0	13.73	32.284	24.17	.802	6.33	107	-.035	.61	8.57	.97	.20	.91	.76	.20	1.79
11.5	13.68	32.283	24.18	.797	6.40	108	-.041	.64	7.73	1.33	.16	.73	.76	.24	1.76
19.0	10.54	32.465	24.91	.612	5.94	94	.036	1.18	13.30	8.75	.41	1.35	.59	.30	1.66
30.0	9.39	32.587	25.19	.520	6.15	95	.032	1.13	12.90	8.38	.44	.73	.31	.27	1.53
40.0	8.71	32.664	25.36	.483	5.87	89	.065	1.30	14.80	11.34	.36	.51	.20	.21	1.49
50.0	8.43	32.751	25.47	.456	5.81	87	.075	1.27	15.30	11.40	.20	.45	.15	.14	1.52
60.0	8.32	32.922	25.62	.453	5.42	82	.109	1.43	17.90	14.03	.17	.44	.14	.14	1.49
74.0	7.98	33.271	25.94	.430	4.74	84	.080	1.72	24.10	20.06	.14	.36	.04	.06	1.41
100.0	7.77	33.763	26.36	.463	2.70	40	.357	2.34	39.90	29.38	.12	.61	.21	.07	1.75
147.0	7.45	33.893	26.51	.488	2.81	42	.351	2.42	45.40	30.51	.09	.44	.07	.07	1.52
(0-32.0M)													19.35	8.18MG/M2	

C-14				SIMULATED IN SITU				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAED	FO/FA	LIGHT DEPTH %	-CARBON LIGHT MG/M3/(INCUB*)	ASSIM- DARK MG/MG/(HR OF LIGHT)	ASSIM/CHLA	
.5	.76	.20	1.79	96.0	37.46	.78	4.17	2.0
5.0	.76	.20	1.79	49.0	18.18	2.69	2.02	2.0
8.5	.76	.24	1.76	30.0	**	6.24	.00	11.5
14.0	.59	.30	1.66	14.0	**	7.90	.00	19.0
19.5	.31	.27	1.53	6.0	2.12	.42	.58	30.0
32.0	.20	.21	1.49	1.0	**	4.99	.00	40.0

(0-32.0M) 19.35 8.18MG/M2

MG/M2/(INCUB*)

1% LIGHT DEPTH ESTIMATED FROM ADJACENT STATION IRRADIANCE PROFILE.
 CALCULATED PRODUCTIVITY DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 12M
 C-14 SAMPLES INCUBATED FROM 2120, 28 SEPTEMBER TO 2120, 29 SEPTEMBER
 FOR A TOTAL OF 11.82 DAYLIGHT HOURS. INSULATION TOTALED 81 LANGLEYS
 DURING THIS EXPERIMENT.
 ** INDICATES DARK BOTTLE UPTAKE GREATER THAN LIGHT BOTTLE UPTAKE.

-----CRUISE W8009

STATION 055-----

DATE 28 SEP 80 SECCHI M WIND SPD 22KT BAROMETER 1016.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 2130(+07) PHOTIC 30.0M AIR DRY 14.6C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 2M WET 13.9C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-58.3W PM LY DIR 190 REL HUMIDITY 93% VISIBILITY: 10-20KM
 DEPTH 250M TOTAL 145LY PER 6SEC SURF TEMP 13.44C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA	
					ML/L	SAT	AJU	---MICROGPAM---	ATOMS/LITER---			---MG/M3---			
2.0	13.44	32.272	24.22	.820	6.34	107	-.035	.66	8.99	1.76	.17	1.15	.81	.31	1.72
9.5	13.00	32.303	24.33	.784	6.39	106	-.033	.71	8.83	1.88	.18	1.14	.72	.31	1.70
19.0	11.31	32.407	24.73	.725	6.26	100	-.002	.98	12.00	6.35	.31	1.13	.94	.59	1.61
30.0	9.66	32.546	25.08	.562	5.76	89	.061	1.27	15.80	10.92	.42	.76	.45	.32	1.59
39.0	8.77	32.651	25.34	.483	5.86	89	.065	1.22	15.30	10.71	.33	.35	.20	.19	1.51
49.0	8.46	32.785	25.49	.469	5.40	82	.109	1.46	17.60	14.18	.22	.35	.10	.17	1.38
59.0	8.27	32.974	25.67	.423	5.02	75	.146	1.87	25.90	19.13	.16	.38	.10	.13	1.43
74.0	7.97	33.317	25.98	.433	4.39	66	.205	1.74	26.60	20.68	.16	.52	.03	.05	1.38
98.0	7.42	33.753	26.40	.484	2.84	42	.350	2.29	42.50	29.35	.13	.44	.13	.07	1.66
148.0	7.33	33.916	26.54	.577	2.28	34	.399	2.51	51.80	31.88	.13	.72	.04	.07	1.37
(0-30.0M)													22.89	12.23MG/M2	

1% LIGHT DEPTH ESTIMATED.

-----CRUISE W8009 STATION 056-----

DATE 28 SEP 80 SECCHI M WIND SPD 21KT BARMETER 1016.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 2308(+07) PHOTIC 28.0M DIR 175 AIR DRY 14.4C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 3M WET 13.9C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-54.4W PM LY DIR 190 REL HUMIDITY 95% VISIBILITY: 10-20KM
 DEPTH 154M TOTAL 145LY PER 6SEC SURF TEMP 13.31C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
					ML/L SAT ADU	---	---MICROGRAM-ATOMS/LITER---				---	---	
2.0	13.31	32.273	24.24	.982	6.38 107 -.035	.64	11.60	1.91	.25	.84	.81	.44	1.65
7.5	13.31	32.275	24.24	.779	6.62 110 -.055	.65	12.70	2.02	.18	.82	.87	.37	1.70
17.5	13.16	32.289	24.29	.782	6.38 106 -.033	.69	14.10	2.45	.19	1.00	.87	.37	1.70
28.0	9.93	32.563	25.08	.602	5.64 88 .070	1.35	22.30	11.54	.19	1.46	.59	.32	1.65
38.0	8.81	32.659	25.34	.500	5.73 87 .078	1.32	23.50	12.13	.21	.60	.36	.04	1.90
48.0	8.26	32.959	25.66	.459	4.95 74 .154	1.60	31.40	17.21	.19	.39	.09	.15	1.38
58.0	8.01	33.162	25.87	.444	4.65 70 .182	1.72	35.60	19.56	.14	.44	.07	.14	1.34
74.0	7.93	33.467	26.10	.453	3.65 55 .271	2.06	44.20	23.29	.11	.52	.05	.11	1.32
98.0	7.61	33.796	26.41	.549	2.32 35 .393	2.51	59.60	31.14	.16	.56	.11	.16	1.41
148.0	7.26	33.911	26.55	.818	1.75 26 .447	2.75	72.90	33.40	.00	.70	.04	.13	1.24
(0-26.0M)											18.76	10.43MG/M2	

1% LIGHT DEPTH ESTIMATED.

-----CRUISE W6009

STATION 057-----

DATE 29 SEP 80 SECCHI M WIND SPD 17KT BAROMETER 1016.5MB CLOUD TYPE: STRATOCUMULUS
 TIME 0017(+07) PHOTIC 28.3M UIR 180 AIR DRY 14.4C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 3M WET 13.9C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-47.3W PM LY DIR 190 REL HUMIDITY 95% VISIBILITY: 10-20KM
 DEPTH 131M TOTAL 81LY PER 6SEC SURF TEMP 12.78C TIDE: M

DEPTH M	TEMP C	SAL 0700	SIG-T	ATTEN /M	-----OXYGEN-----		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA	
					ML/L	SAT	ADU	---MICROGRAM---	---ATOMS/LITER---			---MG/M3---			
2.0	12.80	32.282	24.35	1.122	6.44	106	-.033	.79	10.10	3.43	.29	1.06	1.15	.53	1.69
8.0	12.61	32.323	24.42	.909	6.40	105	-.029	.81	11.00	3.69	.24	1.00	1.22	.59	1.67
18.5	11.80	32.461	24.68	.790	5.78	94	.035	1.15	16.30	7.66	.34	2.16	1.12	.78	1.59
29.0	9.43	32.926	25.45	.544	3.97	61	.225		31.20	18.95	.55	2.89	.10	.43	1.19
39.0	8.29	33.054	25.73	.471	4.42	67	.198	1.76	27.40	19.92	.28	.55	.08	.23	1.25
49.0	7.94	33.205	25.90	.452	4.42	66	.203	1.77	27.90	20.82	.18	.48	.12	.07	1.65
58.0	7.93	33.406	26.05	.471	3.36	50	.297	2.11	34.90	26.35	.15	.47	.11	.09	1.55
73.0	7.76	33.667	26.28	.500	2.49	37	.378	2.39	44.40	29.87	.13	.40	.07	.27	1.20
98.0	7.44	33.871	26.49	.586	1.83	27	.442	2.59	55.60	32.77	.13	.39	.04	.15	1.23
121.0	7.36	33.894	26.52	.961	1.51	22	.468	2.71	62.60	33.42	.18	.43	.03	.17	1.16
(10-26.0M)													27.95	17.52MG/M2	

1% LIGHT DEPTH ESTIMATED.

-----CRUISE W8009

STATION 058-----

DATE 29 SEP 80 SECCHI M WIND SPD 17KT BARMETER 1016.6MB CLOUD TYPE: STRATOCUMULUS
 TIME 0208(+07) PHOTIC 27.0M DIR 180 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-07.2N SUN AM LY WAVE HGT 3M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-40.1W PM LY DIR 190 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 104M TOTAL 81LY PER 6SEC SURF TEMP 12.66C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN---	PHUS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FD/FA
					ML/L SAT AUU	---MICROGRAM---	ATOMS/LITER---				MG/M3---		
2.0	12.64	32.288	24.39	1.102	6.39 105 -.029	.79	8.71	3.70	.22	1.23	2.03	.81	1.71
7.5	12.63	32.290	24.39	1.061	6.35 105 -.025	.80	8.77	3.69	.24	1.21	1.93	.84	1.70
13.0	12.61	32.295	24.40	1.057	6.35 105 -.025	.80	10.20	3.74	.24	1.23	1.96	.87	1.69
18.5	11.93	32.358	24.57	.946	6.01 98 .013	.99	13.60	5.69	.27	1.85	1.46	.78	1.65
29.0	8.82	32.972	25.58	.510	3.76 57 .251	2.02	32.90	22.07	.33	2.24	.14	.37	1.28
40.0	8.13	33.245	25.90	.494	3.87 58 .250	2.23	40.30	27.16	.24	.70	.08	.27	1.22
50.0	7.87	33.538	26.17	.507	2.54 38 .370	2.36	45.10	29.36	.14	.62	.09	.26	1.26
60.0	7.76	33.694	26.31	.517	2.50 37 .376	2.42	47.60	30.03	.17	.57	.13	.27	1.32
75.0	7.56	33.830	26.44	.506	2.27 33 .400	2.47	52.50	31.46	.14	.57	.06	.19	1.24
85.0	7.42	33.874	26.50	.782	1.70 25 .450	2.69	62.00	32.92	.18	.59	.02	.21	1.10
95.0	7.42	33.875	26.50	.854	1.69 25 .451	2.71	63.40	32.77	.23	.78	.04	.23	1.16
(0- 27.0M)											42.92	20.62MG/M2	143

C-14				SIMULATED IN SITU-----				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAEO	FD/FA	LIGHT DEPTH %	-CARBON ASSIM- LIGHT DARK MG/M3/(INCUB*)	ASSIM/CHLA MG/MG/(HR OF LIGHT)		
0.0	2.03	.81	1.71	96.0	236.60	1.76	9.94	2.0
4.0	1.93	.84	1.70	49.0	50.40	1.03	2.21	7.5
7.0	1.93	.84	1.70	31.0	43.50	1.10	1.91	7.5
11.0	1.96	.87	1.69	15.0	20.04	.68	.87	13.0
16.5	1.40	.78	1.65	6.0	5.64	.55	.33	18.5
29.0	.14	.37	1.28	1.5	.12	.56	.07	29.0
(0- 27.0M)	42.92	20.62MG/M2			941.15MGC/M2/(INCUB*)			

1% LIGHT DEPTH ESTIMATED. CALCULATED PRODUCTIVITY DEPTHS
 BASED ON ESTIMATED SECCHI DISK OF 10M.
 C-14 SAMPLES INCUBATED FROM 0320, 29 SEPTEMBER TO 0320, 30 SEPTEMBER
 FOR A TOTAL OF 11.82 DAYLIGHT HOURS. INSOLATION TOTALED 61 LANGLEYS
 DURING THIS EXPERIMENT.

T = Temperature - C
S = Salinity - 0/00
D = Sigma-t

X = Oxygen - ml/l
A = Attenuation - 1/m
R = Irradiance - log microwatts/cm²

-----CRUISE W8009 STATION 059-----

DATE 29 SEP 80 SECCHI M WIND SPD 18KT BAROMETER 1016.6MB CLOUD TYPE: STRATOCUMULUS
 TIME 0355(+07) PHOTIC 25.0M DIR 160 AIR DRY 13.3C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 3M WET 12.8C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-32.9W PM LY DIR 190 REL HUMIDITY 95% VISIBILITY: 10-20KM
 DEPTH 76M TOTAL 81LY PER 6SEC SURF TEMP 12.59C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---			PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FC/FA
					ML/L	SAT	ADU	---	---	---	---	---	---	---	---
3.0	12.59	32.273	24.38	1.115	6.40	105	-.028	.85	10.50	4.09	.23	1.42	2.06	1.06	1.66
7.5	12.47	32.289	24.42	1.100	6.28	103	-.017	.90	11.20	4.65	.24	1.44	2.06	1.15	1.64
13.5	12.33	32.287	24.41	1.100	6.33	104	-.022	.87	11.90	4.04	.25	1.25	2.12	1.00	1.68
18.5	10.64	32.644	25.03	.555	4.71	75	.144	1.68	21.80	13.35	.45	3.46	.36	.51	1.41
24.0	9.24	32.960	25.51	.521	3.80	56	.242	2.18	26.70	21.22	.38	2.71	.16	.30	1.35
29.0	8.24	33.293	25.92	.507	2.87	43	.337	2.52	37.40	28.43	.27	.46	.07	.30	1.18
35.0	7.98	33.411	26.05	.500	2.95	44	.333	2.59	39.70	29.15	.15	.49	.09	.29	1.23
40.0	7.86	33.543	26.17	.508	2.39	36	.393	2.76	42.70	30.75	.15	.44	.13	.23	1.35
50.0	7.89	33.665	26.26	.463	3.18	47	.316	2.50	37.70	28.45	.15	.45	.06	.22	1.21
65.0	7.69	33.785	26.39	.820	1.80	27	.439	3.04	57.50	31.45	.15	.90	.45	.33	1.58
(0- 25.0M)													35.77	20.91MG/M2	

1% LIGHT DEPTH ESTIMATED.

-----CRUISE W8009

STATION 060-----

DATE 29 SEP 60 SECCHI M WIND SPD 19KT BARMETER 1016.2MB CLOUD TYPE: STRATOCUMULUS
 TIME 0514(+07) PHOTIC 21.0M DIR 160 AIR DRY 13.7C AMOUNT: 100%
 LAT 47-07.1N SUN AM LY WAVE HGT 3M WET 12.8C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-26.6W PM LY DIR 190 REL HUMIDITY 90% VISIBILITY: 10-20KM
 DEPTH 57M TOTAL 81LY PER 6SEC SURF TEMP 13.00C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FD/FA
					ML/L	SAT	ADU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---		
1.5	13.00	32.493	24.24	1.717	6.37	106	-.030	.77	9.14	3.06	.22	.96	1.46	.94 1.61
2.5	13.01	32.193	24.24	1.021	6.30	104	-.024	.76	10.10	3.01	.22	.80	1.22	.65 1.65
8.0	13.00	32.192	24.24	1.019	6.28	104	-.023	.75	10.10	3.03	.22	.95	1.31	.69 1.66
13.5	12.74	32.241	24.33	.988	6.26	103	-.018	.75	10.50	3.11	.22	.83	1.50	.59 1.72
19.0	10.27	32.722	25.15	.640	4.31	88	.184	1.62	25.90	14.93	.37	2.85	.36	.61 1.37
25.0	9.63	32.873	25.38	.583	3.99	62	.220	1.88	26.30	19.21	.39	2.67	.20	.42 1.32
30.0	8.32	33.138	25.79	.519	3.47	52	.283	2.15	33.30	25.53	.37	1.20	.12	.30 1.28
36.0	8.01	33.355	26.00	.509	2.95	44	.332	2.22	37.50	28.46	.14	.39	.06	.32 1.15
41.0	7.88	33.470	26.11	.519	2.79	42	.348	2.25	39.20	29.29	.11	.48	.08	.29 1.20
46.0	7.90	33.639	26.24	.743	2.41	36	.381	2.51	45.80	29.85	.15	.62	.12	.41 1.22
(0- 21.0M)													24.00	13.87MG/M2

1% LIGHT DEPTH ESTIMATED.

-----CRUISE W8009

STATION 061-----

DATE 29 SEP 80 SECCHI M WIND SPD 22KT BAROMETER 1016.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 0635(+07) PHOTIC 18.0M DIR 150 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 2M WET 12.8C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-22.5W PM LY DIR 190 REL HUMIDITY 88% VISIBILITY: 10-20KM
 DEPTH 52M TOTAL RILY PER 6SEC SURF TEMP 13.12C TIDE: 2.1M EBB

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----			PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FC/FA
					ML/L	SAT	AQU	---	---MICROGRAM---	---ATOMS/LITER---			---MG/M3---		
3.5	13.12	32.092	24.14	1.021	6.20	103	-.017	.72	13.82	3.48	.23	1.41	1.06	.72	1.60
5.5	13.17	32.047	24.10	1.024	6.11	102	-.009	.71	13.40	3.20	.18	1.06	1.78	1.06	1.63
10.0	13.15	32.062	24.11	1.027	6.12	102	-.010	.70	13.80	3.13	.17	1.06	1.50	1.06	1.59
15.0	13.13	32.084	24.13	1.025	6.14	102	-.012	.74	13.60	3.21	.19	.96	1.71	1.06	1.62
21.0	12.92	32.118	24.20	.999	6.14	102	-.009	.73	14.60	3.83	.20	1.02	1.81	1.02	1.64
26.0	11.71	32.324	24.59	.863	5.29	85	.081	1.20	20.00	9.51	.28	1.58	.80	.64	1.56
37.0	8.23	33.180	25.63	.556	3.20	48	.308	2.21	35.50	25.96	.24	1.04	.08	.34	1.20
46.0	7.96	33.541	26.16	1.233	1.96	29	.421	2.63	55.90	29.48	.22	1.00	.19	1.02	1.15
(0-18.0M)													27.16	17.52MG/M2	

1% LIGHT DEPTH ESTIMATED.

-----CRUISE W8009

STATION 062-----

DATE 29 SEP 80 SECCHI 5.0M WIND SPD 21KT BAROMETER 1016.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 0808(+07) PHOTIC 15.0M DIR 160 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-07.0N SUN AM LY WAVE HGT 3M WET 12.8C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-17.9W PM LY DIR 190 REL HUMIDITY 88% VISIBILITY: 10-20KM
 DEPTH 37M TOTAL 81LY PER 7SEC SURF TEMP 13.40C TIDE: 1.5M EBB

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL	NO3 ---ATOMS/LITER---	NO2	NH3	CHLA ---MG/M3---	PHAEO	FC/FA
3.0	13.40	30.421	22.80	1.182	6.04 100 .001	.76	23.20	4.11	.19	1.17	2.24	1.31	1.63
6.0	13.40	30.444	22.82	1.161	6.06 100 -.001	.76	24.30	4.16	.18	1.20	2.09	1.25	1.63
9.0	13.38	30.480	22.85	1.154	6.08 100 -.002	.76	24.60	4.13	.16	1.92	2.16	1.28	1.63
14.0	13.36	30.482	22.85	1.176	6.01 99 .003	.79	24.40	4.26	.16	1.05	1.99	1.15	1.63
18.0	13.35	30.550	22.91	1.216	6.03 100 .001	.78	24.50	4.26	.15	1.62	1.87	.96	1.66
32.0	11.28	32.130	24.52	1.966	4.89 78 .122	1.30	29.90	10.46	.19	1.88	1.03	1.42	1.42
(0- 15.0M)											31.94	18.77MG/M2	

C-14				-----SIMULATED IN SITU-----				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAEO	FC/FA	LIGHT DEPTH %	-CARBON ASSIM- MG/M3/(INCUB*)	ASSIM/CHLA MG/MG/(HR OF LIGHT)		
0.0	2.24	1.31	1.63	98.0	68.16	.74	2.56	3.0
2.0	2.24	1.31	1.63	50.0	74.36	1.31	2.82	3.0
3.0	2.09	1.25	1.63	32.0	57.26	.55	2.33	6.0
6.0	2.09	1.25	1.63	15.0	39.36	.94	1.60	6.0
9.0	2.16	1.28	1.63	6.0	11.72	1.30	.46	9.0
13.5	1.99	1.15	1.63	1.5	.54	2.27	.02	14.0
(0- 15.0M)	31.94	18.77MG/M2			466.68MGC/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 5.5M.
 C-14 SAMPLES INCUBATED FROM 0900, 29 SEPTEMBER TO 0900, 30 SEPTEMBER
 FOR A TOTAL OF 11.78 DAYLIGHT HOURS. INSOLATION TOTALED 81 LANGLEYS
 DURING THIS EXPERIMENT.

W8009 D63

-----CRUISE W8009

STATION 063-----

DATE 29 SEP 80 SECCHI 5.0M WIND SPD 25KT BAROMETER 1015.8MB CLOUD TYPE: STRATOCUMULUS
 TIME 0940(+07) PHOTIC 13.5M DIR 170 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-13.5N SUN AM LY WAVE HGT 4M WET 13.2C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-18.4W PM LY DIR 245 REL HUMIDITY 93% VISIBILITY: 4-10KM
 DEPTH 32M TOTAL 81LY PER 8SEC SURF TEMP 13.29C TIDE: .8M EBB

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA	
					ML/L	SAT	ADU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---			
2.5	13.29	30.642	22.99	1.310	6.05	100	-.002	.88	24.80	4.47	.25	1.28	2.07	1.04	1.67
6.5	13.29	30.671	23.01	1.136	6.08	100	-.002	.87	23.90	4.43	.21	1.61	2.07	.95	1.69
9.5	13.30	30.695	23.03	1.123	6.12	101	-.007	.86	24.20	4.41	.23	1.57	2.33	1.12	1.68
19.0	13.25	30.966	23.25	1.051	6.01	100	.003	.95	22.70	4.13	.30	1.55	1.59	1.06	1.60
29.0	12.99	31.299	23.56	1.139	5.85	96	.019	.92	22.60	4.83	.31	1.84	1.59	1.15	1.58
(0- 13.5M)													27.90	14.11MG/M2	

C-14				-----SIMULATED IN SITU-----				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAEO	FO/FA	LIGHT DEPTH %	-CARBON ASSIM- MG/M3/(INCUB*)	ASSIM/CHLA MG/MG/(HR OF LIGHT)		
2.0	2.07	1.04	1.67	50.0	168.18	3.82	6.90	2.5
5.5	2.07	.95	1.69	15.0	62.02	4.72	2.54	6.5
8.0	2.33	1.12	1.68	7.0	18.25	5.06	.66	9.5
(0- 13.5M)	27.90	14.11MG/M2			889.74MGC/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 5M.
 C-14 SAMPLES INCUBATED FROM 1005, 29 SEPTEMBER TO 1005, 30 SEPTEMBER
 FOR A TOTAL OF 11.78 DAYLIGHT HOURS. INSOLATION TOTALED 88 LANGLEYS
 DURING THIS EXPERIMENT.

W8009 D64

-----CRUISE W8009

STATION 064-----

DATE 29 SEP 80 SECCHI 8.0M WIND SPD 22KT BAROMETER 1015.8MB CLOUD TYPE: STRATUS
 TIME 1044(+07) PHOTIC 16.0M DIR 180 AIR DRY 13.5C AMOUNT: 100%
 LAT 47-13.6N SUN AM LY WAVE HGT 3M WET 13.2C WEATHER: FOG OR HAZE
 LGN 124-23.5W PM LY DIK 245 REL HUMIDITY 97% VISIBILITY: 4-10KM
 DEPTH 42M TOTAL 81LY PER 8SEC SURF TEMP 13.24C TIDE: .7M LOW SLACK

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FG/FA
					ML/L SAT AUU	---	---MICROGRAM---	---ATOMS/LITER---			---MG/M3---		
3.0	13.24	31.897	23.97	1.026	5.99 100 .003	.75	18.50	2.99	.24	.98	1.78	1.25	1.59
7.0	13.24	31.896	23.97	1.027	5.96 99 .005	.75	19.00	3.03	.21	.97	1.75	.97	1.64
10.0	13.23	31.896	23.97	1.029	6.02 100 -.001	.75	18.90	3.25	.21	.91	1.75	1.06	1.62
14.5	13.25	31.899	23.97	1.028	8.15 136 -.192	.74	19.20	3.00	.21	.79	1.71	.94	1.65
24.0	12.02	32.001	24.28	1.032	5.66 92 .045	.93	20.50	5.87	.22	1.06	1.28	.79	1.62
34.0	9.12	33.008	25.56	.781	2.56 39 .353	2.08	34.20	23.34	.26	1.08	.30	.67	1.31
(C- 16.0M)											27.95	17.13MG/M2

-----CRUISE W8009

STATION 065-----

DATE 29 SEP 80 SECCHI 6.5M WIND SPD 18KT BARMETER 1016.0MB CLOUD TYPE: STRATUS
 TIME 1200(+07) PHOTIC 18.5M DIR 180 AIR DRY 12.8C AMOUNT: 100%
 LAT 47-13.5N SUN AM LY WAVE HGT 3M WET 12.8C WEATHER: FOG OR HAZE
 LON 124-30.5W PM LY DIR 245 REL HUMIDITY 100% VISIBILITY: 4-10KM
 DEPTH 56M TOTAL 8ILY PER 6SEC SURF TEMP 12.70C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---			PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FD/FA
					ML/L	SAT	AOU	---	---	---	---	---	---	---	---
2.0	12.70	32.278	24.37	1.356	6.14	101	-.007	.91	17.80	4.37	.28	1.36	2.18	2.00	1.70
6.5	12.70	32.280	24.37	1.127	6.12	101	-.005	.90	18.50	4.38	.27	1.25	2.24	.94	1.71
12.0	12.70	32.282	24.37	1.116	6.11	101	-.004	.88	19.00	4.35	.26	1.30	2.28	.97	1.70
18.5	12.67	32.291	24.38	1.098	6.08	100	-.001	.87	21.40	4.27	.26	1.38	2.28	.97	1.70
23.0	9.11	33.084	25.62	.617	3.49	54	.270	2.07	39.60	21.15	.35	2.75	.17	.53	1.24
29.0	8.62	33.217	25.60	.571	3.03	46	.318	2.26	44.60	24.43	.37	2.61	.09	.48	1.16
39.0	8.03	33.406	26.04	.629	2.61	39	.363	2.44	57.10	28.63	.17	.67	.09	2.00	1.15
50.0	7.83	33.590	26.21	.885	1.61	24	.424	2.74	74.80	30.34	.16	.59	.13	1.10	1.10
54.0	7.82	33.607	26.23	.906	1.75	26	.442	2.22	74.70	30.24	.16	.51	.13	1.03	1.11
(0-18.5M)													41.56	17.67MG/M2

-----CPUISE W8009

STATION 066-----

DATE 29 SEP 80 SECCHI 6.0M WIND SPD 14KT BAROMETER 1015.6MB CLOUD TYPE: STRATUS
 TIME 1400(+07) PHOTIC 17.5M DIR 230 AIR DRY 13.7C AMOUNT: 100%
 LAT 47-13.3N SUN AM LY WAVE HGT 3M WET 13.7C WEATHER: FCG CR HAZE
 LON 124-39.8W PM LY DIR 245 REL HUMIDITY 100% VISIBILITY: 4-10KM
 DEPTH 105M TOTAL 81LY PER 6SEC SURF TEMP 12.78C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN---	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FD/FA
					ML/L SAT ADU	---MICROGRAM---	---ATOMS/LITER---				---MG/M3---		
2.0	12.76	32.258	24.34	1.126	6.60 109 -.048	.88	13.70	3.85	.21	1.79	1.90	.81	1.70
2.5	12.76	32.257	24.34	1.137	6.35 105 -.026	.91	13.40	3.84	.22	1.69	1.96	.81	1.71
7.0	12.72	32.262	24.35	1.241	6.38 105 -.028	.92	13.10	3.92	.22	1.70	1.96	.78	1.72
12.5	12.48	32.312	24.44	.739	6.28 103 -.017	1.02	16.60	4.68	.29	1.95	2.49	1.00	1.71
18.0	10.51	32.662	25.06	.580	5.54 87 -.071	1.32	22.60	8.13	.29	2.50	1.56	.90	1.63
23.0	10.28	32.671	25.11	.640	4.23 66 .191	1.91	30.20	16.24	.36	3.12	.29	.51	1.36
28.0	9.12	33.070	25.64	.552	3.77 58 .246	2.20	33.40	20.79	.41	2.80	.12	.35	1.26
38.0	7.96	33.449	26.08	.537	2.63 39 .361	2.61	45.50	29.11	.19	.57	.08	.25	1.25
57.0	7.68	33.761	26.37	.559	2.26 34 .397	2.68	49.80	30.73	.17	.46	.15	.22	1.41
76.0	7.49	33.858	26.47	1.341	1.71 25 .448	2.92	61.80	32.40	.20	.59	.12	.44	1.21
97.0	7.47	33.860	26.48	1.420	1.68 25 .451	2.94	61.20	32.51	.19	.58	.08	.44	1.15
(0- 17.5M)											36.96	15.62MG/M2	159

C-14 DEPTH M	CHLA ---MG/M3---	PHAED	FD/FA	LIGHT DEPTH %	CARBON LIGHT MG/M3/(INCUB*)	ASSIM- DARK MG/M3/(INCUB*)	ASSYM/CHLA MG/MG/(HR OF LIGHT)	SAMPLED DEPTH M
.5	1.90	.81	1.70	93.0	231.57	2.94	10.35	2.0
2.5	1.90	.81	1.70	50.0	255.56	4.33	11.42	2.0
4.0	1.96	.81	1.71	34.0	103.98	2.97	4.50	2.5
7.0	1.96	.78	1.72	15.0	99.06	3.14	4.29	7.0
10.0	2.49	1.00	1.71	7.0	55.38	2.36	1.89	12.5
17.5	1.56	.90	1.63	1.0	.82	2.00	.04	18.0
(0- 17.5M)	36.96	15.62MG/M2			1619.60MGC/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 6.5M
 C-14 SAMPLES INCUBATED FROM 1550, 29 SEPTEMBER TO 1550, 30 SEPTEMBER
 FOR A TOTAL OF 11.78 DAYLIGHT HOURS. INSOLATION TOTALLED 234 LANGLEYS
 DURING THIS EXPERIMENT.

-----CRUISE W8009 STATION 067-----

DATE 29 SEP 80 SECCHI 12.0M WIND SPD KT BARMETER 1016.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 1639(+07) PHOTOIC 32.0M DIR AIR DRY 14.0C AMOUNT: 100%
 LAT 47-12.9N SUN AM LY WAVE HGT 3M WET 14.0C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-49.2W PM LY DIR 270 REL HUMIDITY 100% VISIBILITY: 4-10KM
 DEPTH 151M TOTAL 81LY PER 75EC SURF TEMP 14.40C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---		PHUS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA	
					ML/L	SAT	AUU	---MICROGRAM-ATOMS/LITER---							---MG/M3---
1.5	14.40	32.264	24.01	.721	6.18	106	-.029	.59	2.83	.77	.07	1.04	.41	.12	1.77
3.0	14.37	32.267	24.02	.704	6.09	104	-.020	.59	3.06	.75	.08	.57	.40	.16	1.71
18.0	14.24	32.284	24.06	.711	6.15	105	-.025	.59	1.22	.43	.09	.64	.50	.14	1.78
28.0	9.76	32.585	25.13	.583	5.81	90	.057	1.33	11.60	10.90	.30	1.43	.53	.16	1.77
39.0	8.63	32.731	25.42	.493	5.49	83	.100	1.43	15.00	13.28	.22	.37	.26	.29	1.47
49.0	8.33	32.887	25.59	.486	5.23	79	.126	1.52	17.50	15.24	.16	.21	.12	.13	1.48
73.0	7.85	33.373	26.04	.476	4.34	65	.211	1.84	25.40	21.54	.14	.33	.08	.11	1.43
96.0	7.76	33.716	26.32	.548	2.41	36	.383	2.51	41.90	30.17	.13	.53	.04	.09	1.29
147.0	7.27	33.907	26.54	1.033	1.47										
(0- 32.0M)															
												14.82	4.82MG/M2		

SOME CONFUSION OVR SAMPLE ORDER EXISTS AT THIS STATION.
 147M OXYGEN VALUE BASED ON CTD SENSOR.

-----CRUISE W8009 STATION 068-----

DATE 29 SEP 80 SECCHI M WIND SPD 10KT BARMETER 1016.0MB CLOUD TYPE: STRATUS
 TIME 1648(+07) PHOTIC 30.0M DIR 210 AIR DRY 14.3C AMOUNT: 100%
 LAT 47-13.7N SUN AM LY WAVE HGT 4M WET 14.1C WEATHER: FOG OR HAZE
 LON 124-57.6W PM LY DIR 270 REL HUMIDITY 98% VISIBILITY: 200-500M
 DEPTH 445M TOTAL 81LY PER 7SEC SURF TEMP 14.69C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL	NO3 -ATOMS/LITER-	NO2	NH3	CHLA ---MG/M3---	PHAED	FO/FA
3.0	14.68	32.252	23.95	.699	6.22 107 -.035	.52	.71		.10	.17	.43	.16	1.73
10.0	14.61	32.277	23.98	.700	6.28 108 -.041	.51	.67		.12	.66	.48	.16	1.75
21.0	11.55	32.462	24.74	.714	6.50 105 -.025	.77	3.93	2.36	.31	.49	.79	.30	1.72
30.0	10.14	32.558	25.05	.618	6.06 104 -.024	.92	6.02	4.20	.37	.99	.59	.29	1.67
40.0	9.61	32.590	25.16	.559	5.65 103 -.015	.96	8.11	4.70	.38	.91	.37	.28	1.57
48.0	9.06	32.617	25.27	.525	6.78 104 -.021	1.00	9.22	5.41	.31	1.35	.26	.22	1.55
63.0	8.38	32.663	25.41	.473	6.32 95 .029	1.17	12.30	9.08	.30	.63	.09	.10	1.48
78.0	8.21	32.945	25.65	.471	5.21 78 .130	1.52	17.80		.14	.39	.07	.10	1.42
101.0	7.83	33.598	26.22	.526	3.29 49 .305	2.21	34.30	26.66	.14		.06	.16	1.27
150.0	7.33	33.918	26.54	.550	2.37 35 .392	2.52	47.50	31.36	.14	.42	.04	.09	1.27
(0- 30.0M)											17.67	6.79MG/M2	

C-14				SIMULATED IN SITU				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAED	FO/FA	DEPTH %	-CARBON LIGHT MG/M3/(INCUB*)	ASSIM- DARK	ASSIM/CHLA MG/MG/(HR OF LIGHT)	
.5	.43	.16	1.73	96.0	21.46	2.54	4.25	3.0
4.5	.43	.16	1.73	51.0	18.96	3.85	3.76	3.0
7.5	.48	.16	1.75	30.0	4.46	1.78	.79	10.0
12.5	.48	.16	1.75	14.0	2.40	4.52	.43	10.0
18.0	.79	.30	1.72	6.0	8.58	1.36	.92	21.0
30.0	.59	.29	1.67	1.0	1.41	.45	.20	30.0
(0- 30.0M)	17.67	6.79MG/M2			234.06MG/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 11M.
 C-14 SAMPLES INCUBATED FROM 1940, 29 SEPTEMBER TO 2140, 30 SEPTEMBER
 FOR A TOTAL OF 11.72 DAYLIGHT HOURS. INSOLATION TOTALED 245 LANGLEYS
 DURING THIS EXPERIMENT.

-----CRUISE W8009 STATION 069-----

DATE 29 SEP 80 SECCHI M WIND SPD 10KT BARDMETER 1018.0MB CLOUD TYPE: STRATUS
 TIME 2310(+07) PHCTIC 16.0M DIR 230 AIR DRY 14.4C AMOUNT: 50%
 LAT 47-20.1N SUN AM LY WAVE HGT 3M WET 14.4C WEATHER: FOG OR HAZE
 LON 124-25.9W PM LY DIR 270 REL HUMIDITY 100% VISIBILITY: 4-10KM
 DEPTH 34M TOTAL 81LY PER 8SEC SURF TEMP 13.33C TIDE: OM EBB

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN---- ML/L SAT AOU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO	FO/FA
4.5	13.31	30.708	23.04	1.171	5.84	.87	26.10	4.45	.27	1.23			
19.0	13.20	31.435	23.62	1.022	5.80	.86	20.00	4.11	.25	1.14			
29.0	13.00	31.752	23.90	1.124	5.72	.91	20.00	4.55	.23	1.23

-----CRUISE W8009 STATION 070-----

DATE 30 SEP-80 SECCHI M WIND SPD 8KT BAROMETER 1019.1MB CLOUD TYPE: STRATOCUMULUS
 TIME 0101(+07) PHOTIC 13.5M DIR 230 AIR DRY 14.2C AMOUNT: 90%
 LAT 47-19.4N SUN AM LY WAVE HGT 3M WET 14.2C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-32.5W PM LY DIR 270 REL HUMIDITY 100% VISIBILITY: 10-20KM
 DEPTH 65M TOTAL 245LY PER 6SEC SURF TEMP 13.12C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN---- ML/L SAT ADU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA	PHAED	FC/FA
7.5	12.98	32.022	24.11	.942	5.79	.86	20.50	4.24	.21	.95			
36.0	7.93	33.361	26.04	.497	3.06	2.28	38.80	27.37	.13	.47			
47.0	7.79	33.597	26.22	.927	2.68	2.73	59.80	29.57	.13	.63			
59.0	7.79	33.597	26.22	1.330	1.76	2.83	62.90	30.07	.13	.65

-----CRUISE: W8009

STATION 071-----

DATE 30 SEP 80 SECCHI M WIND SPD 5KT BAROMETER 1020.4MB CLOUD TYPE: STRATUS
 TIME 0233(+07) PHOTIC 10.5M DIR 270 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-18.7N SUN AM LY WAVE HGT 3M WET 13.9C WEATHER: FOG OR HAZE
 LON 124-38.3W PM LY DIR 270 REL HUMIDITY 100% VISIBILITY: 4-10KM
 DEPTH 99M TOTAL 245LY PER 6SEC SURF TEMP 13.10C TIDE: M

DEPTH M	TEMP C	SAL O/CO	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT AUU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA PHAEO PO/FA ---MG/M3---
9.0	13.05	31.998	24.08	1.018	5.75	.86	17.80	4.39	.20	1.18	
30.0	8.32	33.133	25.78	.505	3.30	2.31	35.60	26.04	.16	.52	
60.0	7.81	33.726	26.32	.473	2.62	2.37	39.20	27.86	.14	.63	
75.0	7.60	33.832	26.44	1.013	1.63	2.86	56.30	32.10	.20	.85	
93.0	7.60	33.831	26.44	1.124	1.70	2.82	59.70	32.11	.19	.84

-----CRUISE W8009

STATION 072-----

DATE 30 SEP 80 SECCHI M WIND SPD 7KT BAROMETER 1020.0MB CLOUD TYPE: STRATUS
 TIME 0508(+07) PHOTIC 24.0M DIR 260 AIR DRY 14.4C AMOUNT: 100%
 LAT 47-18.0N SUN AM LY WAVE HGT 2M WET 14.2C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-42.4W PM LY DIR 270 REL HUMIDITY 98% VISIBILITY: 4-10KM
 DEPTH 271M TOTAL 245LY PER 6SEC SURF TEMP 14.41C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED	FO/FA
13.5	14.17	32.261	24.06	.615	5.86	.62	12.25	.77	.10	.80			
42.0	8.34	32.894	25.59	.460	5.09	1.63	36.95	16.25	.15	.53			
73.0	7.86	33.467	26.11	.451	3.64	2.06	40.40	24.00	.10	.61			
102.0	7.77	33.716	26.32	.588	2.35	2.61	51.00	29.88	.12	.53			
122.0	7.58	33.830	26.44	.514	2.20	2.66	51.50	31.08	.12	.76			
195.0	7.30	33.905	26.54	.872	1.44	2.98	55.75	33.63	.17	.76			
264.0	7.29	33.909	26.54	.918	1.37	2.99	55.75	33.61	.19	.84			

-----CRUISE W8009

STATION 073-----

DATE 30 SEP 80 SECCHI M WIND SPD OKT BAROMETER 1023.0MB CLOUD TYPE: STRATUS
 TIME 0648(+07) PHOTIC 27.0M DIR DRY 15.0C AMOUNT: 80%
 LAT 47-20.7N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: FCG OR HAZE
 LON 124-47.2W PM LY DIR 270 REL HUMIDITY 94% VISIBILITY: 2-4KM
 DEPTH 762M TOTAL 245LY PER 7SEC SURF TEMP 14.48C TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
 S = Salinity - 0/00
 D = Sigma-t

X = Oxygen - ml/l
 A = Attenuation - 1/m
 R = Irradiance - log microwatts/cm²

THIS PAGE
WAS INTENTIONALLY
LEFT BLANK

-----CRUISE W8009

STATION 074-----

DATE 30 SEP 80 SECCHI 10.0M WIND SPD 4KT BAROMETER 1023.5MB CLOUD TYPE: STRATUS
 TIME 0755(+07) PHOTIC 30.0M DIR 180 AIR DRY 15.0C AMOUNT: 90%
 LAT 47-21.2N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: FCG OR HAZE
 LON 124-49.3W PM LY DIR 270 REL HUMIDITY 94% VISIBILITY: 4-10KM
 DEPTH 1089M TOTAL 245LY PER 7SEC SURF TEMP 14.73C TIDE: M

DEPTH M	TEMP C	SAL O/DO	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
10.0	14.64	32.200	23.96	.635	6.13	.56	5.41	.19	.13	.74			
90.0	7.80	33.684	26.29	.564	2.63	1.18	33.90	22.75	.15	.41			
160.0	7.24	33.925	26.56	.633	1.63	2.71	58.10	33.87	.15	.49			
302.0	6.75	33.984	26.67	.438	2.32	2.70	54.30	33.49	.11	.68			
764.0	4.31	34.220	27.18	.521	.42	3.41	107.50	42.45	.15	.33			
867.0	3.95	34.319	27.27	.488	.35	3.49	123.50	43.55	.15	.56			
1083.0	3.37	34.413	27.40	.546	.40	3.51	140.00	43.38	.22	.70			

-----CRUISE W8009

STATION 075-----

DATE 30 SEP 80 SECCHA 20.0M WIND SPD 6KT BARMETER 1025.5MB CLOUD TYPE: CUMULUS
 TIME 1031(+07) PHOTIC 35.0M WIP 170 AIR DRY 15.0C AMOUNT: 90%
 LAT 47-21.9N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-51.9W PM LY WIP 250 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 1214M TOTAL 245LY PER 7SEC SURF TEMP 14.67C TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

W8009 075

T = Temperature - C
 S = Salinity - 0/00
 D = Sigma-t

X = Oxygen - ml/l
 A = Attenuation - 1/m
 R = Irradiance - log(stokes/cm²)

THIS PAGE
WAS INTENTIONALLY
LEFT BLANK

-----CRUISE W8009 STATION 076-----

DATE 30 SEP 80 SECCHI 17.0M WIND SPD 6KT BARDMETER 1025.8MB CLOUD TYPE: CUMULUS
 TIME 1139(+07) PHOTIC 40.0M DIR 170 AIR DRY 15.0C AMOUNT: 90%
 LAT 47-22.5N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-54.2W PM LY DIR 250 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 1280M TOTAL 245LY PER 6SEC SURF TEMP 14.92C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
					ML/L SAT ADU	---MICROGRAM---	ATOMS/LITER---				---MG/M3---		
13.0	14.60	32.284	23.99	.632		.62	6.50	.25	.15	.51			
97.0	7.96	33.567	26.18	.431		1.73	26.30	18.57	.13	.36			
203.0	7.18			.576		2.87	58.20	33.88	.12	.48			
351.0	6.19			.438		2.93	63.70	35.57	.13	.44			
599.0	4.86			.458		3.41	62.80	42.07	.13	.50			
993.0	3.54			.447		3.55	95.00	44.48	.12	.40			
1269.0	2.90					3.61	159.00	43.82	.18	.53			

CTD CONDUCTIVITY SENSOR PLUGGED WITH MUD DURING MOST OF THIS CAST

W8009 077

-----CRUISE W8009

STATION 077-----

DATE 30 SEP 80 SECCHI 21.0M WIND SPD 5KT BARMETER 1026.5MB CLOUD TYPE: CUMULUS
 TIME 1414(+07) PHOTIC 43.0M DIR 210 AIR DRY 15.6C AMOUNT: 70%
 LAT 47-22.6N SUN AM LY WAVE HGT 2M WET 15.0C WEATHER: PARTLY CLOUDY
 LON 125-00.8W PM LY DIR 250 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 1336M TOTAL 245LY PER 6SEC SURF TEMP 15.15C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEG	FD/FA
					ME/L SAT AUU	---MICROGRAM-ATOMS/LITER---					---MG/M3---		
10.0	14.92	32.267	23.91	.617	5.75	.58	5.27	.21	.11	.40			
200.0	7.19	33.933	26.57	.436	2.72	2.37	51.20	30.27	.13	.53			
361.0	5.98	34.015	26.80	.432	1.61	2.87	69.00	36.38	.12	.51			
696.0	4.48	34.196	27.12	.418	.46	3.43	110.00	43.89	.11	.57			
744.0	4.36	34.227	27.16	.424	.42	3.41	111.00	42.97	.13	.73			
982.0	3.64	34.363	27.34	.427	.36	3.52	145.00	44.95	.15	.70			
1326.0	2.75	34.495	27.53	.528	.72	3.48	170.00	44.56	.14	.87			

-----CRUISE W8009

STATION 078-----

DATE 30 SEP 80 SECCHI M WIND SPD 7KT BARMETER 1030.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 2350(+07) PHOTIC 40.0M DIR 0 AIR DRY 14.4C AMOUNT: 100%
 LAT 47-21.5N SUN AM LY WAVE HGT 1M WET 13.9C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-07.3W PM LY DIR 260 REL HUMIDITY 95% VISIBILITY: 10-20KM
 DEPTH 1573M TOTAL 245LY PER 6SEC SURF TEMP 15.11C TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

THIS PAGE
WAS INTENTIONALLY
LEFT BLANK

-----CRUISE W8009

STATION 079-----

DATE 01 DCT 80 SECCHI M WIND SPD 10KT BAROMETER 1030.0MB CLOUD TYPE: STRATUS
 TIME 0140(+07) PHOTIC 38.0M DIR 20 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-19.5N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: FOG OR HAZE
 LON 125-13.3W PM LY DIR 260 REL HUMIDITY 94% VISIBILITY: 4-10KM
 DEPTH 1542M TOTAL 251LY PER 6SEC SURF TEMP 14.82C TIDE: M

DEPTH M	TEMP C	SAL O/DO	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS -----MICROGRAM-ATOMS/LITER----	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
12.5	14.74	32.273	23.95	.623	6.12	.54	4.65	.00	.13				
101.0	7.89	33.593	26.21	.447	3.86	2.02	37.90	24.69	.11				
253.0	6.74	33.984	26.68	.509	1.97	2.93	63.30	32.88	.12				
500.0	5.56	34.060	26.89	.443	1.15	2.92	84.10	37.49	.11				
697.0	4.38	34.171	27.11	.402	.49	3.21	114.00	41.59	.11				
1188.0	3.08	34.449	27.46	.444	.54	3.25	162.00	41.84	.16				
1532.0	2.48	34.530	27.58	.474	.97	3.19	161.00	40.26	.14

-----CRUISE W5009 STATION 080-----

DATE 01 OCT 80 SECCHI M WIND SPD 10KT BARMETER 1030.0MB CLOUD TYPE: STRATUS
 TIME 0412(+07) PHOTIC 40.0M DIR 30 AIR DRY 13.0C AMOUNT: 100%
 LAT 47-15.9N SUN AM LY WAVE HGT 1M WET 12.4C WEATHER: FOG OR HAZE
 LON 125-26.0W PM LY DIR 260 REL HUMIDITY 93% VISIBILITY: 4-10KM
 DEPTH 1695M TOTAL 251LY PER 7SEC SURF TEMP 14.73C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN---- ML/L SAT ADU	PHUS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA	PHAED	FC/FA
9.0	14.53	32.249	23.98	.730	6.24	.58	5.42	.32	.13	.53			
149.0	7.55	33.804	26.42	.426	3.42	2.15	39.30	27.59	.11	.45			
348.0	5.90	34.010	26.81	.430	1.61	2.85	68.90	36.90	.10	.49			
501.0	4.97	34.117	27.00	.439	.75	3.11	87.20	40.28	.12	.40			
597.0	4.61	34.167	27.08	.402	.53	3.26	100.00	42.03	.17	.54			
1139.0	3.22	34.450	27.43	.401	.44	3.37	99.60	37.96	.14	.75			
1681.0	2.19	34.564	27.63	.454	1.26	3.24	123.00	36.17	.13	.81

-----CRUISE W8009

STATION 081-----

DATE 01 OCT 80 SECCHI 22.0M WIND SPD 13KT BARMETER 1030.2MB CLOUD TYPE: STRATOCUMULUS
 TIME 0752(+07) PHOTIC 40.0M DIR 40 AIR DRY 12.2C AMOUNT: 70%
 LAT 47-20.0N SUN AM LY WAVE HGT 2M WET 12.2C WEATHER: PARTLY CLOUDY
 LON 125-45.0W PM LY DIR 250 REL HUMIDITY 100% VISIBILITY: 10-20KM
 DEPTH 1731M TOTAL 251LY PER 8SEC SURF TEMP 15.30C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	-----OXYGEN-----		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
					ML/L	SAT	ADU	---MICROGRAM-ATOMS/LITER---						---MG/M3---
8.5	15.31	32.269	23.82	.528	5.89	102	-.012							
54.0	9.27	32.618	25.23	.493	6.79	104	-.024							
103.0	8.03	33.185	25.87	.421	4.90	73	.159							
203.0	7.09	33.950	26.60	.424	2.56	38	.378							
263.0	6.45	33.989	26.72	.431	2.08	30	.430							
341.0	5.98	34.018	26.80	.432	1.74	25	.456							
401.0	5.60	34.043	26.87	.419	1.27	16	.515							
599.0	4.61	34.173	27.09	.401	.60	8	.589							
993.0	3.49	34.369	27.36	.407	.40	5	.624							
1721.0	2.13	34.574	27.64	.432	1.22	16	.573

-----CPLISE W6009

STATION 081-----

DATE 01 OCT 80 SECCHI 22.0M WIND SPD 12KT BAROMETER 1030.5MB CLOUD TYPE: STRATOCUMULUS
 TIME 0952(+07) PHOTIC 38.0M WAVE DIR 40 AIR DRY 12.2C AMOUNT: 100%
 LAT 47-20.0N SUN AM LY WAVE HGT 3M WET 12.2C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-45.0W PM LY DIR 200 REL HUMIDITY 100% VISIBILITY: 10-20KM
 DEPTH 1731M TOTAL 251LY PER 8SEC SURF TEMP 15.31C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA	
					ML/L	SAT	ADU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---			
1.0	15.32	32.270	23.82	.532	5.86	102	-.011	.52	6.54	.00	.00	.40	.21	.30	1.88
7.5	15.32	32.270	23.82	.532	5.88	102	-.012	.52	5.54	.00	.13	.46	.21	.03	1.88
17.0	15.31	32.279	23.83	.528	5.91	103	-.015	.52	4.73	.00	.14	.37	.21	.06	1.79
28.0	12.92	32.499	24.49	.606	6.66	110	-.056	.60	5.36	.00	.12	.43	.40	.18	1.69
38.0	11.27	32.594	24.88	.632	7.16	115	-.082	.73	7.26	.65	.14	.38	.62	.32	1.66
48.0	9.83	32.612	25.14	.538	6.94	108	-.045	.52	10.20	3.98	.20	.45	.47	.32	1.60
59.0	9.10	32.612	25.26	.489	6.70	102	-.014	.62	11.50	5.43	.28	.68	.26	.22	1.55
74.0	8.50	32.648	25.38	.434	6.27	95	.032	1.16	12.70	8.45	.29	.26	.10	.07	1.60
99.0	8.09	33.091	25.78	.422	5.14	77	.137	1.58	20.40	16.32	.08	.26	.04	.05	1.47
149.0	7.59	33.848	26.45	.424	3.07	46	.326	2.27	39.70	28.27	.13	.91	.01	.03	1.27
(0- 38.0M)												12.03	4.47MG/M2

-----CRUISE W8009

STATION 082-----

DATE 01 OCT 80 SECCHI 20.0M WIND SPD 14KT BAROMETER 1030.5MB CLOUD TYPE: STRATOCUMULUS
 TIME 1110(+07) PHOTIC 45.0M DIR 0 AIR DRY 12.8C AMOUNT: 30%
 LAT 47-20.0N SUN 4M LY WAVE HGT 3M WET 12.5C WEATHER: PARTLY CLOUDY
 LON 125-34.0W PM LY DIR 260 REL HUMIDITY 97% VISIBILITY: 10-20KM
 DEPTH 1360M TOTAL 251LY PER 8SEC SURF TEMP 14.93C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN---		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
					ML/L	SAT	AU	---	MICROGRAM-	ATOMS/LITER---		---	MG/M3---	
1.5	14.93	32.266	23.90	.603	5.98	103	-.017	.56	3.15	.00	.04	.24	.08	1.74
8.0	14.81	32.278	23.94	.608	5.94	102	-.012	.57	2.81	.00	.03	.26	.10	1.72
18.0	13.66	32.361	24.24	.533	6.22	105	-.026	.62	3.51	.02	.04	.43	.18	1.71
29.0	10.59	32.610	25.01	.568	6.98	110	-.058	.82	7.99	2.15	.08	.56	.27	1.67
39.0	9.64	32.635	25.19	.494	6.67	103	-.018	.97	10.10	4.05	.24	.36	.29	1.55
49.0	9.06	32.633	25.28	.466	6.50	99	.005	1.04	12.00	5.45	.31	.26	.23	1.54
59.0	8.52	32.644	25.37	.442	6.26	94	.033	1.17	12.60	8.08	.34	.14	.11	1.56
74.0	8.27	32.799	25.53	.427	5.82	87	.076	1.32	14.70	11.33	.17	.07	.07	1.50
99.0	8.05	33.413	26.04	.435	3.88	58	.249	1.94	32.20	23.16	.14	.57	.06	1.37
146.0	7.40	33.872	26.49	.481	2.20	33	.406	2.49	47.90	31.37	.13	.57	.08	1.09
(0- 45.0M)												17.46	9.01MG/M2

-----CRUISE W8009

STATION 063-----

DATE 01 OCT 80 SECCHI 16.0M WIND SPD 13KT BAROMETER 1030.1MB CLOUD TYPE: CIRRUS
 TIME 1236(+07) PHOTIC 43.0M DIR 10 AIR DRY 13.6C AMOUNT: 10%
 LAT 47-15.9N SUN AM LY WAVE HGT 2M WET 12.9C WEATHER: PARTLY CLOUDY
 LON 125-25.9W PM LY DIR 260 REL HUMIDITY 92% VISIBILITY: 10-20KM
 DEPTH 1702M TOTAL 251LY PER 8SEC SURF TEMP 14.10C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN---			PHUS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
					ML/L	SAT	AOU	---	---	---	---	---	---	---	---
								MICROGRAM	ATOMS	LITER			MG/M3		
2.0	14.10	32.222	24.04	.619	6.04	103	-.014	.60	6.45	.55	.15		.44	.11	1.60
10.0	13.88	32.243	24.11	.654	6.07	103	-.014	.64	5.10	.55	.17	.47	.54	.14	1.79
20.0	10.44	32.546	24.99	.621	6.00	104	-.022	.87	9.53	3.52	.28	.58	.72	.23	1.76
30.0	9.44	32.597	25.19	.551	6.62	102	-.011	.97	11.45	5.78	.34	.65	.49	.28	1.63
40.0	8.71	32.638	25.34	.470	6.10	92	.044	1.14	14.05	9.26	.24	.50	.25	.20	1.56
50.0	8.01	32.663	25.37	.460	6.00	91	.055	1.40	15.15	12.55	.10	.37	.23	.14	1.62
60.0	8.42	32.729	25.45	.441	5.73	86	.081	1.28	16.60	12.30	.10	.50	.13	.10	1.56
74.0	8.09	32.890	25.63	.428	5.54	83	.103	1.40	19.30	14.53	.12	.42	.08	.07	1.53
101.0	7.62	33.444	26.13	.419	4.42	48	.311	1.82	29.90	23.37	.13	.48	.02	.03	1.40
151.0	7.41	33.865	26.49	.424	3.26	48	.311	2.18	42.30	28.95	.15	.57	.01	.03	1.29
(0- +3.0M)													21.52	8.56MG/M2

-----CRUISE W8009

STATION 084-----

DATE 01 OCT 80 SECCHI 18.0M WIND SPD 14KT BAROMETER 1029.5MB CLOUD TYPE: CIRROSTRATUS
 TIME 1408(+07) PHOTIC 45.0M WAVE HGT 2M AIR DRY 14.4C AMOUNT: 40%
 LAT 47-16.3N SUN AM LY DIR 260 WET 13.3C WEATHER: PARTLY CLOUDY
 LON 125-18.7W PM LY PER 8ScC REL HUMIDITY 89% VISIBILITY: 20-50KM
 DEPTH 1716M TOTAL 251LY SURF TEMP 14.58C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO ---MG/M3---	FO/FA
2.0	14.59	32.232	23.95	.616	6.05 104 -.019	.57	5.92	.37	.15	.30	.43	.07	1.87
7.5	14.53	32.237	23.97	.616	6.08 104 -.022	.57	5.88	.39	.15	.31	.42	.08	1.85
18.0	12.54	32.397	24.49	.622	6.35 104 -.024	.63	6.93	.94	.18	.39	.53	.11	1.82
23.0	11.00	32.497	24.85	.609	6.64 106 -.032	.80	9.05	2.91	.29	.45	.61	.29	1.68
29.0	9.97	32.569	25.08	.596	6.67 104 -.023	.87	9.53	3.82	.34	.51	.59	.20	1.75
39.0	8.82	32.616	25.30	.490	6.46 96 -.011	1.03	12.20	6.83	.53	.46	.32	.27	1.54
49.0	8.48	32.627	25.36	.450	6.34 96 .026	1.09	12.80	8.60	.33	.26	.49	.13	1.59
59.0	8.31	32.676	25.43	.440	6.17 93 .044	1.17	14.50	9.99	.31	.17	.13	.11	1.54
74.0	8.13	32.788	25.54	.430	5.68 88 .072	1.28	16.80	12.10	.20	.23	.09	.09	1.51
99.0	7.82	33.322	26.00	.420	4.49 67 .198	1.74	27.90	21.16	.14	.25	.05	.09	1.34
148.0	7.42	33.792	26.43	.425	3.57 53 .283	2.03	39.00	26.77	.13	.31	.02	.03	1.33
(0-45.0M)											20.87	7.74MG/M2	

197

C-14 DEPTH M	CHLA ---MG/M3---	PHAEO ---MG/M3---	FO/FA	---SIMULATED IN SITU--- LIGHT DEPTH % MG/M3/(INCUB*)	-CARBON ASSIM- LIGHT DARK MG/M3/(INCUB*)	ASSIM/CHLA MG/MG/(HR OF LIGHT)	SAMPLED DEPTH M
2.5	.43	.07	1.87	93.0	51.34	3.87	10.20
7.0	.42	.08	1.85	50.0	36.10	1.76	7.35
10.5	.42	.08	1.85	34.0	40.40	3.84	8.22
19.0	.53	.11	1.82	15.0	11.33	.53	1.83
26.0	.61	.29	1.68	7.0	12.16	.61	1.70
49.0	.32	.27	1.54	1.0	2.45	.32	.65
(0-45.0M)	20.87	7.74MG/M2			864.59MGC/M2/(INCUB*)		

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 17M.
 C-14 SAMPLES INCUBATED FROM 1505, 1 OCTOBER TO 1506, 2 OCTOBER FOR A
 TOTAL OF 11.70 DAYLIGHT HOURS. INSOLATION TOTALED 228 LANGLEYS
 DURING THIS EXPERIMENT.

-----CRUISE W8009

STATION 085-----

DATE 01 OCT 80 SECCHI 18.0M WIND SPD 12KT BAROMETER 1028.9MB CLOUD TYPE: CIRROSTRATUS
 TIME 1525(+07) PHOTIC 39.0M DIR 10 AIR DRY 14.9C AMOUNT: 40%
 LAT 47-19.1N SUN AM LY WAVE HGT 3M WET 13.8C WEATHER: PARTLY CLOUDY
 LON 125-12.7W PM LY DIR 310 REL HUMIDITY 89% VISIBILITY: 20-50KM
 DEPTH 1791M TOTAL 251LY PER 6SEC SURF TEMP 15.09C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---			PHUS	SIL	NO3	NO2	NH3	CHLA	PHAED	EO/FA
					ML/L	SAT	AUU	---MICROGRAM-ATOMS/LITER---			---MG/M3---				
2.0	15.07	32.240	23.85	.619	6.02	104	-.022	.51	5.14	.13	.11	.25	.25	.07	1.79
7.5	14.98	32.242	23.88	.623	6.03	104	-.022	.51	4.92	.11	.11	.17	.25	.10	1.71
18.0	14.72	32.261	23.94	.659	6.10	105	-.025	.51	5.06	.10	.11	.12	.43	.16	1.73
28.0	11.28	32.469	24.78	.668	6.26	100	-.002	.70	8.68	2.12	.25	.52	.73	.23	1.76
39.0	9.28	32.622	25.24	.502	6.64	102	-.011	.95	11.60	5.06	.25	.59	.40	.33	1.55
48.0	8.66	32.655	25.36	.442	6.26	95	.031	1.09	12.90	7.99	.44	.19	.13	.13	1.50
59.0	8.35	32.694	25.44	.436	6.14	92	.046	1.15	14.80	9.85	.25	.10	.13	.11	1.54
74.0	8.21	32.935	25.64	.435	5.22	78	.129	1.44	21.10	15.16	.14		.09	.09	1.50
98.0	7.70	33.444	26.12	.420	4.40	65	.206	1.74	29.20	21.86	.14		.03	.05	1.35
148.0	7.57	33.796	26.41	.437	3.37	50	.299	2.07	36.40	27.08	.12	.03	.09	.04	1.72
(0-39.0M)													17.46	7.00MG/M2

-----CRUISE #8009

STATION 086-----

DATE 01 OCT 80 SECCHI 17.0M WIND SPD 12KT BAROMETER 1028.3MB CLOUD TYPE: ALTOSTRATUS
 TIME 1639(+07) PHOTIC 39.0M DIR 10 AIR DRY 15.8C AMOUNT: 5%
 LAT 47-21.5N SUN AM LY WAVE HGT 3M WET 14.0C WEATHER: CLEAR
 LON 125-07.3W PM LY DIR 310 REL HUMIDITY 82% VISIBILITY: 20-50KM
 DEPTH 1573M TOTAL 251LY PER 7SEC SURF TEMP 15.19C TIDE: M

DEPTH M	TEMP C	SAL O/DO	SIG-T	ATTEN /M	---OXYGEN---	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FC/FA
					ML/L SAT ADU	---	---	---	---	---	---	---	---
1.0	15.19	32.254	23.84	.611	6.01 104 -.021	.49	4.93	.00	.12	.39	.23	.07	1.77
7.5	15.09	32.254	23.86	.664	5.99 104 -.021	.49	4.54	.00	.11	.46	.22	.08	1.74
16.5	14.75	32.283	23.96	.643	6.02 104 -.019	.50	4.66	.00	.12	.31	.32	.14	1.69
28.0	13.27	32.384	24.34	.736		.59	5.12	.23	.13	.67	.75	.30	1.71
39.0	9.92	32.607	25.12	.537	6.93 108 -.045	.86	9.83	3.83	.18	.74	.42	.37	1.54
49.0	8.65	32.627	25.34	.442	6.43 97 .016	1.06	12.00	7.30	.55	.29	.14	.10	1.58
59.0	8.38	32.695	25.43	.430	6.20 93 .040	1.15	13.20	9.70	.17	.07	.07	.11	1.37
74.0	8.12	33.097	25.78	.427	5.09 76 .140	1.51	21.30	16.97	.13	.06	.06	.05	1.55
98.0	7.96	33.483	26.11	.442	3.55 53 .279	2.02	32.20	25.58	.12	.04	.02	.09	1.22
129.0	7.49	33.861	26.48	.493	2.19 33 .405	2.48	48.90	30.38	.12	.05	.01	.09	1.14
148.0	7.22	33.925	26.56	.530	1.95 29 .431	2.58	52.70	31.59	.11	.05	.02	.08	1.16
(0- 39.0M)											16.71	7.76MG/M2

-----CRUISE W8C09

STATION 087-----

DATE 01 OCT 80 SECCHI 17.0M WIND SPD 10KT BAROMETER 1027.2MB CLOUD TYPE: STRATUS
 TIME 1804(+07) PHOTIC 40.0M WAVE DIR 10 AIR DRY 16.7C AMOUNT: 10%
 LAT 47-22.5N SUN AM LY WAVE HGT 1M WET 14.4C WEATHER: CLEAR
 LGN 125-00.8W PM LY DIR 310 REL HUMIDITY 78% VISIBILITY: 20-50KM
 DEPTH 1325M TOTAL 251LY PER 7SEC SURF TEMP 15.24C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---		PHOS.	SIL	NO3	NO2	NH3	CHLA	PHAED	FD/FA
					ML/L	SAT	ADU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---		
3.0	15.23	32.255	23.83	.599	6.05	105	-.026	.49	3.86	.00	.10	.00	.20	.08 1.72
6.5	15.23	32.254	23.83	.598	6.03	105	-.024	.51	3.91	.00	.04	.02	.21	.05 1.81
12.0	15.07	32.260	23.87	.608	5.97	103	-.017	.49	3.96	.00	.05	.26	.22	.06 1.79
18.0	14.87	32.293	23.94	.619	6.01	104	-.019	.50	4.01	.00	.05	.54	.23	.08 1.73
29.0	14.35	32.464	24.58	.693	6.75	111	-.058	.65	5.96	.44	.36	.32	.67	.21 1.76
40.0	9.60	32.592	25.16	.519	6.72	104	-.022	.94	10.80	5.03	.33	.43	.40	.25 1.61
50.0	8.76	32.614	25.31	.458	6.50	99	.009	1.04	11.90	7.24	.17	.53	.20	.16 1.53
59.0	8.39	32.677	25.42	.438	6.26	94	.034	1.14	13.50	9.11	.12	.48	.11	.10 1.52
74.0	8.07	33.143	25.83	.424	4.86	73	.162	1.60	23.20	18.06	.14	.20	.04	.04 1.47
99.0	7.91	33.549	26.17	.427	3.91	59	.247	1.94	30.60	23.95	.15	.15	.01	.06 1.20
149.0	7.50	33.865	26.47	.447	2.50	37	.377	2.36	44.10	30.69	.11	.12	.06	.05 1.58
(0-40.0M)													14.69	5.32MG/M2

C-14				SIMULATED IN SITU				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAED	FD/FA	LIGHT DEPTH %	-CARBON LIGHT MG/M3/(INCUB*)	ASSIM- DARK MG/MG/(HR OF LIGHT)	ASSIM/CHLA	
3.0	.20	.08	1.72	96.0	21.02	2.22	9.02	3.0
6.0	.20	.08	1.72	51.0	8.76	1.62	3.76	3.0
10.5	.21	.05	1.81	30.0	10.64	3.70	4.35	6.5
17.0	.22	.06	1.79	14.0	11.36	2.66	4.43	12.0
25.0	.23	.06	1.73	6.0	.72	.33	.27	18.0
40.0	.40	.25	1.61	1.0	2.98	.55	.64	40.0
(0-40.0M)	14.69	5.32MG/M2			283.63MG/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 15M.
 C-14 SAMPLES INCUBATED FROM 1900, 1 OCTOBER TO 1900, 2 OCTOBER FOR A
 TOTAL OF 11.65 DAYLIGHT HOURS. INSOLATION TOTALED 231 LANGLEYS
 DURING THIS EXPERIMENT.

-----CRUISE W8009

STATION 086-----

DATE 01 OCT 80 SECCHI M WIND SPD 10KT BAROMETER 1027.0MB CLOUD TYPE: STRATUS
 TIME 1905(+07) PHOTIC 34.0M DIR 10 AIR DRY 15.8C AMOUNT: 10%
 LAT 47-22.5N SUN AM LY WAVE HGT 2M WET 13.9C WEATHER: FOG OR HAZE
 LON 124-54.2W PM LY DIR 310 REL HUMIDITY 81% VISIBILITY: 20-50KM
 DEPTH 1281M TOTAL 251LY PER 7SEC SURF TEMP 14.91C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FD/FA
					ML/L	SAT	AOU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---		
3.0	14.91	32.244	23.89	.714	6.10	105	-.028	.51	5.52	.00	.14	.55	.42	.10 1.80
12.5	14.63	32.270	23.97	.727	6.13	105	-.027	.50	4.12	.00	.11	.42	.46	.12 1.79
24.0	12.48	32.362	24.49	.689	6.24	102	-.013	.67	7.27	.00	.19	.51	.72	.22 1.77
34.0	9.70	32.566	25.12	.540	6.06	94	.037	1.11	12.50	.00	.40	.89	.42	.25 1.63
44.0	8.76	32.765	25.43	.480	5.31	81	.114	1.47	19.60	14.16	.24	.59	.18	.18 1.50
54.0	8.67	32.929	25.57	.486	4.56	69	.182	1.71	25.10	17.89	.31	.69	.17	.18 1.49
64.0	8.28	33.068	25.74	.460	4.38	66	.202	1.75	26.70	19.64	.16	1.01	.09	.14 1.40
79.0	8.00	33.463	26.09	.424	4.05	61	.234	1.86	29.30	22.76	.14	.50	.02	.04 1.33
104.0	7.82	33.690	26.29	.445	3.05	46	.325	2.20	39.10	28.35	.05	.45	.04	.09 1.32
153.0	7.44	33.877	26.49	.425	3.14	47	.322	2.17	41.90	28.37	.03	.65	.02	.05 1.22
(0- 34.0M)												17.93	5.65MG/M2

-----CRUISE W8009

STATION 089-----

DATE 01 OCT 80 SECCHI M WIND SPD 10KT BAROMETER 1026.0MB CLOUD TYPE:
 TIME 2026(+07) PHOTIC 27.0M DIR 0 AIR DRY 14.9C AMOUNT: 0%
 LAT 47-21.2N SUN AM LY WAVE HGT 3M WET 13.4C WEATHER: CLEAR
 LON 124-49.3W PM LY DIR 260 REL HUMIDITY 85% VISIBILITY: 10-20KM
 DEPTH 826M TOTAL 251LY PER 8SEC SURF TEMP 14.93C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN---			PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
					ML/L	SAT	AOU	---MICROGRAM---	---ATOMS/LITER---				---MG/M3---		
5.5	14.92	32.234	23.88	.730	6.08	104	-.023	.53	6.06	.09	.11	.44	.36	.14	1.72
6.5	14.65	32.233	23.94	.748	6.09	105	-.024	.53	5.52	.00	.06	.55	.43	.12	1.78
12.5	14.50	32.264	23.99	.738	6.10	104	-.023	.53	5.34	.00	.14	.62	.48	.12	1.80
23.0	10.90	32.462	24.84	.709	5.91	94	.034	1.14	16.30	9.66	.40	.77	.56	.19	1.75
33.0	9.18	32.805	25.39	.518	4.88	75	.146	1.59	5.52	15.73	.37	.91	.24	.21	1.53
43.0	8.35	32.979	25.66	.460	4.55	68	.187	1.71	26.20	18.76	.24	.39	.09	.16	1.37
53.0	7.95	33.192	25.88	.427	4.84	72	.165	1.63	24.40	18.55	.15	.31	.05	.10	1.31
63.0	7.98	33.438	26.07	.424	4.09	61	.231	1.87	29.40	22.67	.13	.44	.02	.06	1.25
78.0	7.86	33.614	26.23	.426	3.72	56	.265	1.99	32.90	25.18	.12	.60	.01	.03	1.33
103.0	7.72	33.791	26.39	.440	2.82	42	.346	2.29	42.10	29.47	.13	.45	.01	.05	1.21
153.0	7.27	33.914	26.55	.581	1.77	26	.446	2.65	56.90	33.37	.13	.45	.03	.08	1.24
(0- 27.0M)													12.72	3.97MG/M2	207

C-14				-----SIMULATED IN SITU-----				SAMPLED
DEPTH M	CHLA ---MG/M3---	PHAED	FO/FA	LIGHT DEPTH ?	CARBON MG/M3/(INCUB*)	ASSIM- LIGHT DARK	ASSIM/CHLA MG/MG/(HR OF LIGHT)	DEPTH M
0.0	.36	.14	1.72	96.0	99.63	.36	23.76	0.5
4.0	.43	.12	1.78	49.0	19.68	.43	3.93	6.5
7.0	.48	.12	1.80	30.0	13.97	.48	2.50	12.5
11.5	.48	.12	1.80	14.0	8.96	.48	1.60	12.5
16.5	.26	.19	1.75	6.0	25.50	.26	3.91	23.0
27.0	.24	.21	1.53	1.0	2.50	.24	.89	33.0
(0- 27.0M)	12.72	3.97MG/M2			573.84MGC/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 10M.
 C-14 SAMPLES INCUBATED FROM 2135, 1 OCTOBER TO 2135, 2 OCTOBER FOR A
 TOTAL OF 11.65 DAYLIGHT HOURS. INSOLATION TOTALED 231 LANGLEYS
 DURING THIS EXPERIMENT.

-----CRUISE W8009

STATION 090-----

DATE 01 OCT 80 SECCHI M WIND SPD 2KT BAROMETER 1026.0MB CLOUD TYPE:
 TIME 2200(+07) PHOTIC 30.0M DRY 14.4C AMOUNT: 0%
 LAT 47-18.0N SUN AM LY WAVE HGT 2M WET 13.9C WEATHER: CLEAR
 LON 124-45.4W PM LY DIR 310 REL HUMIDITY 95% VISIBILITY: 10-20KM
 DEPTH 340M TOTAL 251LY PER 6SEC SURF TEMP 14.47C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA	
					ML/L	SAT	AQU	---MICROGRAM---	---ATOMS/LITER---			---MG/M3---			
3.2	14.47	32.189	23.94	.801	6.19	106	-.030	.57	7.30	.43	.16	.21	.48	.11	1.81
14.5	12.12	32.427	24.59	.768	6.06	99	.007	.82	10.90	4.16	.28	.95	.72	.20	1.78
24.0	9.45	32.799	25.35	.540	4.84	75	.147	1.62	24.30	15.18	.42	1.73	.30	.25	1.54
34.0	8.25	32.983	25.68	.451	4.67	70	.177	1.68	18.45	.15	.34	.07	.09	.09	1.41
45.0	8.01	33.167	25.86	.437	4.64	69	.183	1.73	27.10	19.76	.14	.25	.03	.08	1.25
54.0	7.95	33.382	26.03	.430	4.23	63	.219	1.84	29.70	22.17	.13	.23	.04	.05	1.44
64.0	7.85	33.536	26.17	.452	3.69	55	.268	2.04	35.60	25.17	.13	.22	.02	.08	1.18
80.0	7.77	33.687	26.30	.561	2.45	37	.379	2.44	48.30	29.97	.13	.19	.09	.21	1.31
105.0	7.44	33.864	26.48	.599	1.78	26	.443	2.67	56.50	33.37	.13	.32	.15	.13	1.53
154.0	7.27	33.911	26.55	.739	1.69	25	.453	2.73	60.00	33.71	.19	.63	.03	.10	1.23
(0-30.0M)													14.51	5.44MG/M2	

1% LIGHT DEPTH ESTIMATED.

-----CRUISE W8009

STATION 091-----

DATE 01 OCT 80 SECCHI M WIND SPD 4KT BARMETER 1026.0MB CLOUD TYPE:
 TIME 2336(+07) PHOTIC 16.0M WAVE DIK 70 AIR DRY 14.4C AMOUNT: 0%
 LAT 47-18.5N SUN AM LY WAVE HGT 3M WET 13.9C WEATHER: CLEAR
 LON 124-38.6W PM LY DIR 310 REL HUMIDITY 95% VISIBILITY: 10-20KM
 DEPTH 99M TOTAL 251LY PER 6SEC SURF TEMP 13.73C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT AGU			PHOS ---MICROGRAM---	SIL	NO3 ---ATOMS/LITER---	NO2	NH3	CHLA ---MG/M3---	PHAEO	FO/FA
1.5	13.73	32.092	24.02	2.020	6.80	115	-.076	.56	.20	.43	.19	.39	3.37	.95	1.78
8.0	12.47	32.254	24.39	1.119	6.33	104	-.022	.78	16.50	3.38	.19	.69	2.68	1.04	1.72
14.0	11.99	32.353	24.56	.914	5.48	89	.059	1.11	19.00	7.41	.30	1.65	1.28	.87	1.59
24.0	9.57	33.012	25.49	.529	3.79	59	.238	1.98	27.70	18.96	.64	3.19	.14	.37	1.28
35.0	8.41	33.173	25.80	.493	3.65	55	.265	2.02	31.50	23.03	.57		.05	.26	1.15
44.0	7.99	33.403	26.04	.470	3.62	54	.273	2.04	33.20	24.94	.16	.65	.06	.27	1.17
54.0	7.76	33.666	26.28	.497	2.48	37	.376	2.42	43.30	29.97	.13	.44	.08	.19	1.29
69.0	7.63	33.814	26.42	.516	2.34	35	.390	2.45	48.70	20.67	.13	.32	.04	.09	1.31
79.0	7.49	33.857	26.47	1.085	1.83	27	.437	2.66	56.40	32.59	.21	.37	.06	.38	1.14
94.0	7.45	33.867	26.49	1.314	1.83	27	.438	2.74	57.70	32.39	.21	.54	.10	.39	1.21
(0-16.0M)													25.45	15.26MG/M2	

C-14				SIMULATED IN SITU				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAEO	FO/FA	LIGHT DEPTH %	-CARBON ASSIM- LIGHT DARK MG/M3/(INCUB*)	ASSIM/CHLA MG/MG/(HR OF LIGHT)		
0.0	3.37	.95	1.78	96.0	195.36	4.64	4.98	1.5
2.5	2.68	1.04	1.72	49.0	169.14	4.81	5.42	8.0
4.0	1.28	.87	1.59	31.0	21.76	1.37	1.46	14.0
6.5	1.28	.87	1.59	15.0	27.15	2.48	1.82	14.0
10.0	.14	.37	1.28	6.0	4.34	2.73	2.66	24.0
14.5	.05	.26	1.15	1.5	2.38	3.04	4.09	35.0
(0-16.0M)	25.45	15.26MG/M2			731.95MG/M2/(INCUB*)			

1% LIGHT DEPTH ESTIMATED. CALCULATED PRODUCTIVITY DEPTHS
 BASED ON EQUIVALENT SECCHI DISK OF 6M.
 C-14 SAMPLES INCUBATED FROM 0040, 2 OCTOBER TO 0040, 3 OCTOBER FOR A
 TOTAL OF 11.65 DAYLIGHT HOURS. INSOLATION TOTALED 231 LANGLEYS
 DURING THIS EXPERIMENT.

-----CRUISE W8009

STATION 092-----

DATE 02 OCT 80 SFCCHI M WIND SPD 5KT BAROMETER 1025.0MB CLOUD TYPE:
 TIME 0112(+07) PHOTIC 18.5M DIR 100 AIR DRY 13.9C AMOUNT: 0%
 LAT 47-19.4N SUN AM LY WAVE HGT 2M WET 12.8C WEATHER: CLEAR
 LON 124-32.4W PM LY DIR 310 REL HUMIDITY 88% VISIBILITY: 20-50KM
 DEPTH 63M TOTAL 231LY PEK 6SEC SURF TEMP 13.50C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---			PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
					ML/L	SAT	AOU	---	---MICROGRAM---	---ATOMS/LITER---			---MG/M3---		
1.0	13.50	31.353	23.50	1.293	8.20	137	-.198	.82	24.40	4.32	.33	.00	1.34	.50	1.73
4.5	13.14	32.064	24.12	1.088	6.20	103	-.016	.77	11.00	2.97	.29	.00	1.40	.69	1.67
8.5	12.72	32.270	24.36	.934	6.38	105	-.024	.81	8.60	3.74	.30	.06	1.15	1.03	1.53
14.0	12.60	32.290	24.40	.834	6.20	102	-.010	.89	9.60	4.57	.32	.39	1.12	1.06	1.51
18.5	11.47	32.373	24.67	.904	5.11	82	.044	1.33	19.90	10.75	.35	1.06	.81	1.03	1.44
23.0	9.92	32.764	25.24	1.002	2.90	45	.314	2.11	40.40	21.14	.36	2.65	.21	.98	1.17
29.0	9.02	33.144	25.68	1.075	2.55	39	.355	2.35	43.80	24.25	.35	2.27	.20	1.02	1.16
39.0	7.88	33.534	26.16	.637	2.48	37	.375	2.43	44.30	28.75	.25	.04	.05	.55	1.08
49.0	7.80	33.507	26.23	.787	2.24	33	.398	2.82	52.70	29.60	.20	.03	.11	.81	1.12
57.0	7.81	33.701	26.30	.973	2.17	32	.403	2.55	51.70	29.71	.19	.31	.21	.88	1.19
(0- 18.5M)													21.82	16.48MG/M2	

1% LIGHT DEPTH ESTIMATED.

-----CRUISE W8009 STATION 093-----

DATE 02 OCT 80 SECCHI M WIND SPD OKT BARMETER 1024.4MB CLOUD TYPE:
 TIME 0241(+07) PHOTIC 13.5M DIR AIR DRY 13.7C AMOUNT: 0%
 LAT 47-20.0N SUN AM LY WAVE HGT 2M WET 12.1C WEATHER: CLEAR
 LON 124-25.8W PM LY DIR 310 REL HUMIDITY 83% VISIBILITY: 20-50KM
 DEPTH 34M TOTAL 231LY PER 6SEC SURF TEMP 13.88C TIDE: .2M FLOOD

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN---		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FD/FA
					ML/L	SAT	ADU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---		
2.5	13.87	29.005	21.62	1.527	6.71	111	-.060	.85	31.10	4.36	.29	.21	2.52	.59 1.81
4.5	13.46	29.263	21.90	1.257	6.38	105	-.026	.87	30.90	5.05	.25	.01	2.46	.56 1.81
8.5	13.42	29.525	22.10	1.274	6.13	101	-.006	.90	29.70	5.40	.24	.50	1.90	.53 1.78
13.5	13.36	30.686	23.01	1.003	6.19	103	-.014	.80	24.40	4.75	.21	.10	1.90	.62 1.75
19.0	13.12	31.364	23.56	1.092	5.79	96	.023	.89	20.80	4.46	.30	.93	1.10	1.02 1.52
25.0	12.81	31.895	24.05	.865	5.92	98	.012	.89	16.00	4.58	.25	.89	1.06	.71 1.60
29.0 (0-13.5M)	8.58	33.243	25.83	5.250	1.95	30	.415	2.60	55.00	26.25	.25	2.42	.33 29.50	2.45 7.68 MG/M2 1.12

C-14				SIMULATED IN SITU				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAEO	FD/FA	LIGHT DEPTH %	-CARBON ASSIM- LIGHT DARK MG/M3/(INCUB*)	ASSIM/CHLA MG/MG/(HR OF LIGHT)		
0.0	2.52	.59	1.81	98.0	284.16	6.84	9.68	2.5
2.0	2.52	.59	1.81	50.0	303.34	3.79	13.06	2.5
3.5	2.46	.56	1.81	32.0	304.44	2.70	10.62	4.5
5.5	1.90	.53	1.78	15.0	120.56	1.90	5.45	8.5
6.0	1.90	.62	1.75	6.0	39.77	.58	1.80	13.5
13.5	1.10	1.02	1.52	1.0	2.97	1.10	.23	19.0
(0-13.5M)	29.50	7.68 MG/M2			1926.28 MG/M2/(INCUB*)			

1% LIGHT DEPTH ESTIMATED. CALCULATED PRODUCTIVITY DEPTHS
 BASED ON EQUIVALENT SECCHI DISK OF 5M.
 C-14 SAMPLES INCUBATED FROM 0330, 2 OCTOBER TO 0335, 3 OCTOBER FOR A
 TOTAL OF 11.65 DAYLIGHT HOURS. INSOLATION TOTALED 231 LANGLEYS
 DURING THIS EXPERIMENT.

-----CRUISE W8009

STATION 094-----

DATE 02 OCT 80 SECCHI M WIND SPD 2KT BARMETER 1023.5MB CLOUD TYPE:
 TIME 0345(+07) PHOTIC 13.5M DIR DRY 12.8C AMOUNT: 0%
 LAT 47-19.8N SUN AM LY WAVE HGT 2M WET 11.7C WEATHER: CLEAR
 LON 124-22.6W PM LY DIR 310 REL HUMIDITY 88% VISIBILITY: 10-20KM
 DEPTH 28M TOTAL 231LY PER 6SEC SURF TEMP 14.02C TIDE: .5M FLOOD

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	OXYGEN		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FC/FA	
					ML/L	SAT	ADU	MICROGRAM-ATOMS/LITER					MG/M3		
2.5	14.02	29.294	21.81	1.627	6.72	112	-.063	.80	29.20	4.07	.23	.41	2.43	.56	1.81
4.0	13.89	29.310	21.85	1.702	6.53	108	-.045	.80	29.20	4.11	.22	.44	2.77	.56	1.83
8.0	13.63	29.425	21.99	1.674	6.15	102	-.010	.90	29.90	4.78	.20	1.16	2.49	.90	1.73
13.5	13.31	30.186	22.64	2.353	5.80	95	.025	1.01	30.20	5.45	.17	1.64	1.93	1.50	1.56
20.0	12.93	31.252	23.53	1.533	5.67	93	.036	.97	23.70	5.22	.17	1.52	1.12	1.22	1.46
24.0	9.30	32.979	25.50	3.363	2.55	39	.351	2.34	48.10	21.85	.33	3.21	.59	4.08	1.13
(0-13.5M)													32.65	11.76	MG/M2

C-14				SIMULATED IN SITU				SAMPLED DEPTH M
DEPTH M	CHLA MG/M3	PHAEO	FC/FA	DEPTH M	LIGHT MG/M3/(INCUB*)	DARK	ASSIM/CHLA MG/MG/(HR OF LIGHT)	
2.0	2.43	.56	1.81	50.0	143.50	16.21	5.07	2.5
5.5	2.77	.56	1.83	15.0	186.60	14.29	5.78	4.0
8.0	2.49	.90	1.73	7.0	114.24	8.62	3.94	8.0
(0-13.5M)	32.65	11.76	MG/M2		1554.89	MG/M2/(INCUB*)		

1% LIGHT DEPTH ESTIMATED. CALCULATED PRODUCTIVITY DEPTHS
 BASED ON EQUIVALENT SECCHI DISK OF 5M.
 C-14 SAMPLES INCUBATED FROM 0420, 2 OCTOBER TO 0425, 3 OCTOBER FOR A
 TOTAL OF 11.65 DAYLIGHT HOURS. INSOLATION TOTALED 231 LANGLEYS
 DURING THIS EXPERIMENT.

-----CRUISE W8009 STATION 095-----

DATE 02 OCT 80 SECCHI 5.0M WIND SPD OKT BARMETER 1022.2MB CLOUD TYPE:
 TIME 0749(+07) PHOTIC 14.0M AIR DRY 11.7C AMOUNT: 0%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 11.1C WEATHER: CLEAR
 LON 124-27.0W PM LY DIR 310 REL HUMIDITY 93% VISIBILITY: 20-50KM
 DEPTH 23M TOTAL 231LY PER 8SEC SURF TEMP 13.65C TIDE: 2.0M FLOOD

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
					ML/L SAT ADU	---	---	---	---	---	---	---	---
						MICROGRAM-ATOMS/LITER---					MG/M3---		
8.5	13.71	29.915	22.35	1.431	6.49	.68	29.20	3.99	.50	.72			
15.5	13.41	30.524	22.88	1.553	6.65	.90	26.80	3.81	.50	.46			
19.0	13.40	30.579	22.92	1.512	5.47	.97	26.60	4.39	.53	1.55

-----CRUISE W8009

STATION 096-----

DATE 02 OCT 80 SECCHI 4.0M WIND SPD OKT BARMETER 1022.0MB CLOUD TYPE:
 TIME 0848(+07) PHOTIC 11.0M DIR 13.3C AMOUNT: 0%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 12.5C WEATHER: FOG DR HAZE
 LGN 124-32.0W PM LY DIR 270 REL HUMIDITY 91% VISIBILITY: 10-20KM
 DEPTH 39M TOTAL 231LY PER 9SEC SURF TEMP 13.65C TIDE: 2.2M HIGH SLACK

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT	---ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED FC/FA
7.5	13.32	30.537	22.90	2.291	5.34		1.12	30.10	4.99	.27	2.61		
13.0	13.21	30.763	23.10	2.030	5.31		.95	22.30	4.47	.03	1.48		
26.0	13.14	32.094	24.14	.964	5.76		1.63	32.70	13.43	.12	1.92		
36.0	8.44	33.349	25.93	2.456	2.10		1.74	37.60	13.93	.27	.54

-----CRUISE W6009

STATION 097-----

DATE 02 OCT 80 SECCHI 6.0M WIND SPD 2KT BARMETER 1021.5MB CLOUD TYPE:
 TIME 0955(+07) PHOTIC 13.5M DIR 13.6C AMOUNT: 0%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: FOG OR HAZE
 LON 124-38.1W PM LY DIR 310 REL HUMIDITY 88% VISIBILITY: 10-20KM
 DEPTH 66M TOTAL 231LY PER 9SEC SURF TEMP 13.64C TIDE: M

DEPTH M	TEMP C	SAL O/GO	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA	PHAED	FG/FA
9.0	13.20	31.157	23.40	1.654	5.55	1.00	26.20	4.63	.38	1.68			
24.0	10.92	32.705	25.03	.631	5.58	1.56	20.50	11.66	.54	3.14			
42.0	7.98	33.474	26.10	.471	3.72	2.21	34.90	26.82	.18	.31			
53.0	7.82	33.547	26.16	.764	3.46	2.59	53.40	29.78	.22	.25			
65.0	7.76	33.662	26.28	1.195	2.42	2.71	58.70	30.29	.21	.42

-----CRUISE W8009

STATION 098-----

DATE 02 OCT 80 SECCHI 4.5M WIND SPD OKT BAROMETER 1019.5MB CLOUD TYPE:
 TIME 1229(+07) PHOTIC 24.0M DIR DRY 16.8C AMOUNT: 0%
 LAT 47-32.0N SUN AM LY WAVE HGT 1M WET 15.1C WEATHER: FOG OR HAZE
 LON 124-45.6W PM LY DIR 300 REL HUMIDITY 84% VISIBILITY: 10-20KM
 DEPTH 109M TOTAL 231LY PER 8SEC SURF TEMP 13.50C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FD/FA
					ML/L SAT ADJ	---	---	---	---	---	---	---	---
						---	---	---	---	---	---	---	---
9.0	12.70	32.286	24.37	1.097	5.87	.60	13.40	3.19	.23	.38			
61.0	7.88	33.535	26.16	.457	3.27	2.07	34.20	25.75	.15	.19			
86.0	7.67	33.771	26.38	.786	1.54	2.74	60.40	32.32	.18	.27			
102.0	7.63	33.799	26.41	.964	1.60	2.75	61.60	32.30	.20	.58

-----CRUISE W8009

STATION 099-----

DATE 02 OCT 80 SECCHI 12.0M WIND SPD 6KT BAROMETER 1016.2MB CLOUD TYPE:
 TIME 1531(+07) PHOTIC 30.0M DIR 0 AIR DRY 16.4C AMOUNT: 0%
 LAT 47-32.0N SUN AM LY WAVE HGT 1M WET 14.7C WEATHER: FOG OR HAZE
 LON 124-53.0W PM LY DIR 300 REL HUMIDITY 83% VISIBILITY: 10-20KM
 DEPTH 155M TOTAL 231LY PER 8SEC SURF TEMP 14.54C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T /M	ATTEN /M	-----OXYGEN----- ML/L SAT AUU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO ---	FG/FA
8.5	14.42	32.290	24.03		6.91	.57	5.63	.31	.19	.23			
44.0	8.69	32.775	25.45		4.90	1.55	19.20	15.45	.15	.33			
64.0	7.66	33.751	26.36		2.91	2.38	39.30	29.53	.27	.34			
113.0	7.49	33.856	26.47		1.71								
128.0	7.44	33.867	26.49		1.31	2.83	58.70	33.23	.27	.35			
149.0	7.42	33.873	26.49		1.30	2.82	61.40			.49

-----CRUISE W8009

STATION 100-----

DATE 02 OCT 80 SECCHI 18.0CM WIND SPD 9KT BAROMETER 1015.2MB CLOUD TYPE:
 TIME 1647(+07) PHOTIC 40.0CM DIR 0 AIR DRY 17.3C AMOUNT: 0%
 LAT 47-32.0N SUN AM LY WAVE HGT 1M WET 15.1C WEATHER: FOG OR HAZE
 LON 125-00.5W PM LY DIR 300 REL HUMIDITY 79% VISIBILITY: 10-20KM
 DEPTH 351M TOTAL 231LY PER 8SEC SURF TEMP 15.23C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T /M	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3 ---	NO2 ---	NH3 ---	CHLA ---MG/M3---	PHAEO ---	FG/FA
8.0	14.79	32.299	23.96		5.78	.57	4.70	.00	.15	.23			
35.0	9.82	32.584	25.12		6.27	.96	11.60	4.40	.25	.67			
78.0	8.08	33.208	25.88		3.78								
117.0	7.88	33.746	26.33		3.24								
145.0	7.34	33.891	26.52		1.54								
155.0	7.30	33.902	26.53		1.59	2.78	60.00	33.77	.13	.27			
196.0	7.20	33.928	26.57		1.96								
234.0	7.01	33.960	26.62		2.44	2.55	52.00	32.77	.13	.24			
254.0	6.83	33.975	26.66		1.83	3.11	58.50	34.36	.14	.24			
276.0	6.71	33.986	26.68		2.08								
328.0	6.36	34.003	26.74		2.16	2.75	62.10	35.66	.14	.31			
344.0	6.17	34.017	26.78		1.70	2.81	65.60	36.57	.13	.62

-----CRUISE W8009

STATION 101-----

DATE 02 OCT 80 SECCHI M WIND SPD 8KT BAROMETER 1013.0MB CLOUD TYPE:
 TIME 2015(+07) PHOTIC 40.0M DIR 60 AIR DRY 16.7C AMOUNT: 0%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: FOG OR HAZE
 LON 125-07.8W PM LY DIR 300 REL HUMIDITY 78% VISIBILITY: 10-20KM
 DEPTH 528M TOTAL 231LY PER 8SEC SURF TEMP C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T /M	ATTEN /M	-----OXYGEN----- ML/L SAT AOU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO FC/FA
13.5	15.09	32.276	23.68		5.66	.55	4.97	.00	.11	.22		
51.0	8.89	32.616	25.29		6.26	1.07	12.80	6.01	.37	.98		
122.0	7.74	33.641	26.27		3.52							
181.0	7.17	33.942	26.56		2.43	2.57	51.50	32.45	.15	.30		
249.0	6.88	33.981	26.65		2.79							
396.0	5.68	34.007	26.83		1.64	2.88	72.40	37.97	.13	.37		
444.0	5.50	34.048	26.88		1.27							
483.0	5.15	34.100	26.97		.90	2.97	87.90	41.07	.13	.56		
519.0	4.96	34.097	26.99		.87	2.96	89.70	41.43	.17	.37

-----CRUISE W8009

STATION 102-----

DATE 02 OCT 80 SECCHI M WIND SPD 12KT BAROMETER 1012.2MB CLOUD TYPE:
 TIME 2244(+07) PHOTIC 49.0M DIR 100 AIR DRY 16.7C AMOUNT: 0%
 LAT 47-32.5N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: CLEAR
 LON 125-15.3W PM LY DIR 300 REL HUMIDITY 78% VISIBILITY: 10-20KM
 DEPTH 898M TOTAL 231LY PER 8SEC SURF TEMP 15.18C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T /M	ATTEN /M	-----OXYGEN----- ML/L SAT AUU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3 ---	NO2 ---	NH3 ---	CHLA ---MG/M3---	PHAEO ---	PO/FA ---
3.0	15.18	32.257	23.84		5.71	.51	4.44	.00	.15				
78.0	8.30	32.735	25.47		6.63								
157.0	7.46	33.855	26.47		3.21	2.16	39.70	27.47	.13				
217.0	6.85	33.975	26.65		2.81								
425.0	5.67	34.025	26.85		1.40	2.93	72.90	37.89	.11				
646.0	4.32	34.147	27.10		.98								
866.0	3.93	34.295	27.25		.82	3.39	125.00	44.17	.13				
889.0	3.90	34.307	27.27		.39	3.39	126.00	44.16	.14

-----CRUISE WR009

STATION 103-----

DATE 03 OCT 80 SECCHI M WIND SPD 12KT BAROMETER 1011.9MB CLOUD TYPE:
 TIME 0110(+07) PHOTIC 49.0M DIR 120 AIR DRY 16.9C AMOUNT: 0%
 LAT 47-32.0N SUN AM LY WAVE HGT 1M WET 14.4C WEATHER: CLEAR
 LON 125-22.7W PM LY DIR 300 REL HUMIDITY 76% VISIBILITY: 10-20KM
 DEPTH 732M TOTAL 164LY PER 8SEC SURF TEMP 15.26C TIDE: M

DEPTH M	TEMP C	SAL 0700	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT AUU	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FD/FA
						---MICROGRAM-ATOMS/LITER---				---MG/M3---			
6.5	15.25	32.265	23.63		5.73	.54	4.70	.01	.14				
101.0	8.11	33.064	25.78		4.92								
152.0	7.73	33.781	26.38		2.82	2.26	29.90	20.76	.14				
300.0	6.41	34.004	26.74		1.97								
399.0	5.38	33.983	26.85		1.67	2.91	71.80	38.46	.14				
473.0	4.63	33.996	26.94		1.34								
596.0	4.22	34.089	27.06		.84								
699.0	4.13	34.204	27.16		.51	3.38	105.60	44.07	.13				
722.0	4.12	34.213	27.17		.48	3.40	100.00	43.77	.13

-----CRUISE W8009

STATION 104-----

DATE 03 OCT 80 SECCHI M WIND SPD 20KT BAROMETER 1011.0MB CLOUD TYPE:
 TIME 0350(+07) PHOTIC 48.0M DIM 135 AIR DRY 16.7C AMOUNT: 0%
 LAT 47-32.0N SUN AM LY WAVE HGT 1M WET 14.4C WEATHER: CLEAR
 LON 125-33.7W PM LY DIR 300 REL HUMIDITY 76% VISIBILITY: 10-20KM
 DEPTH 1350M TOTAL 164LY PER 8SEC SURF TEMP 15.44C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T /M	ATTEN /M	---OXYGEN--- ML/L SAT ADU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL ---	NO3 ---	NO2 ---	NH3 ---	CHLA ---MG/M3---	PHAEO ---	FD/FA ---
16.0	15.43	32.292	23.82		5.46	.53	21.10	.00	.11				
203.0	7.00	33.913	26.57		3.12	1.97	37.00	23.74	.16				
499.0	4.49	34.037	26.99		1.08								
795.0	4.01	34.312	27.26		.36	3.40	129.00	44.28	.12				
1042.0	3.44	34.408	27.39		.42								
1314.0	2.86	34.490	27.51		.71	3.39	171.00	44.50	.10				
1343.0	2.75	34.505	27.53		.76	3.36	177.00	44.21	.09

-----CRUISE W8009

STATION 105-----

DATE 03 OCT 80 SECCHI M WIND SPD 28KT BAROMETER 1010.8MB CLOUD TYPE:
 TIME 0630(+07) PHOTIC 43.0M DIR 170 AIR DRY 17.2C AMOUNT: 0%
 LAT 47-32.1N SUN AM LY WAVE HGT 1M WET 15.6C WEATHER: CLEAR
 LON 125-45.0W PM LY DIR 300 REL HUMIDITY 85% VISIBILITY: 10-20KM
 DEPTH 1433M TOTAL 164LY PER 8SEC SURF TEMP 15.43C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN-----			PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
					ML/L	SAT	ADJ	---	---	---	---	---	---	---	---
								MICROGRAM	ATOMS	LITER			MG	M3	
102.0	8.23	32.913	25.62		5.66	85	.090								
202.0	6.82	33.926	26.62		3.19	47	.325								
250.0	6.21	33.937	26.71		2.95	42	.356								
300.0	5.83	33.943	26.76		2.66	38	.387								
400.0	5.04	33.978	26.88		1.70	24	.486								
500.0	4.46	34.028	26.99		1.21	17	.537								
597.0	4.19	34.128	27.10		.76	10	.581								
792.0	3.74	34.283	27.26		.42	6	.619								
989.0	3.45	34.391	27.38		.46	6	.619								
1183.0	3.10	34.458	27.47		.54										
1426.0	2.73	34.506	27.54		.86	11	.596								

1183M OXYGEN VALUE FROM CTD SENSOR

-----CRUISE W8009

STATION 105-----

DATE 03 OCT 80 SECCHI 18.0M WIND SPD 25KT BAROMETER 1010.8MB CLOUD TYPE: STRATOCUMULUS
 TIME 0812(+07) PHOTIC 43.0M DIR 170 AIR DRY 17.2C AMOUNT: 100%
 LAT 47-32.4N SUN AM LY WAVE HGT 2M WET 15.6C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-44.6W PM LY DIR 300 REL HUMIDITY 85% VISIBILITY: 10-20KM
 DEPTH 1433M TOTAL 164LY PER 7SEC SURF TEMP 15.42C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T /M	ATTEN /M	---OXYGEN---		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
					ML/L	SAT	AQU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---		
2.0	15.41	32.291	23.82		5.92	103	-.017	.48	4.57	.00	.11	.43		
11.5	15.36	32.293	23.83		5.93	103	-.017	.49	4.60	.00	.11	.22		
17.0	15.31	32.302	23.85		5.96	104	-.019	.49	4.63	.00	.11	.30	.16	.06 1.74
23.0	14.52	32.352	24.06		6.19	106	-.032	.52	4.66	.00	.12	.43	.24	.07 1.78
34.0	11.43	32.598	24.85		7.23	116	-.090	.66	6.26	.16	.12	.39	.71	.22 1.77
43.0	10.21	32.629	25.09		7.23	113	-.076	.78	7.07	2.30	.16	.18	.64	.16 1.80
53.0	9.54	32.632	25.20		6.87	106	-.035	.91	10.20	4.36	.21	.52	.45	.23 1.67
64.0	9.09	32.632	25.27		6.68	102	-.012	1.06	10.90	5.33	.31	.57	.25	.19 1.57
78.0	8.58	32.634	25.35		6.49	98	-.011	1.07	12.70	7.29	.67	.44	.10	.07 1.59
104.0	8.17	32.996	25.70		5.49	82	.105	1.42	18.80	14.45	.15	.25	.06	.05 1.57
153.0	7.65	33.800	26.40		3.23	48	.310	2.16	38.40	27.45	.15	.27	.03	.07 1.26
(0- 43.0M)												15.22	4.72MG/M2	

C-14				SIMULATED IN SITU				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAEO	FO/FA	LIGHT DEPTH %	-CARBON MG/M3/(INCUB*)	ASSIM- DARK	ASSIM/CHLA MG/MG/(HR OF LIGHT)	
5.5	.16	.06	1.74	93.0	16.47	1.88	8.91	2.0
6.5	.16	.06	1.74	50.0	12.08	2.04	6.54	11.5
10.0	.16	.06	1.74	34.0	12.18	3.46	6.59	17.0
17.5	.24	.07	1.78	15.0	4.46	2.48	1.61	23.0
25.0	.71	.22	1.77	7.0	12.37	1.94	1.51	34.0
43.0	.45	.23	1.67	1.0	2.76	.84	.53	53.0
(0- 43.0M)	15.22	4.72MG/M2			398.02MGC/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 16M
 C-14 SAMPLES INCUBATED FROM 0905, 3 OCTOBER TO 0905, 4 OCTOBER FOR A
 TOTAL OF 11.55 DAYLIGHT HOURS. INSOLATION TOTALED 162 LANGLEYS
 DURING THIS EXPERIMENT.
 ASSUME PIGMENT DISTRIBUTION UNIFORM FROM SURFACE TO 17M FOR
 PRODUCTIVITY EXPERIMENT.

-----CRUISE W8009

STATION 106-----

DATE 03 OCT 80 SECCHI 10.CM WIND SPD 20KT BAROMETER 1012.5MB CLOUD TYPE: STRATOCUMULUS
 TIME 0945(+07) PHOTIC 48.CM DIR 180 AIR DRY 15.6C AMOUNT: 100%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-33.7W PM LY DIR 300 REL HUMIDITY 88% VISIBILITY: 10-20KM
 DEPTH 1350M TOTAL 164LY PER 7SEC SURF TEMP 15.37C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	PO/FA	
					ML/L	SAT	ABU	---MICROGRAM-ATOMS/LITER---					---MG/M3---		
1.5	12.37	32.294	23.83		5.97	104	-.020	.59	4.84	.00	.08	.19	.15	.05	1.76
8.5	15.33	32.297	23.84		6.07	106	-.029	.57	4.94	.00	.11	.06	.16	.04	1.81
17.0	15.33	32.295	23.84		5.92	103	-.016	.57	5.05	.00	.11	.18	.15	.07	1.70
27.0	13.13	32.468	24.43		6.41	107	-.036	.62	5.15	.00	.11	.18	.26	.10	1.72
37.0	10.69	32.609	24.99		7.17	113	-.076	.82	7.61	1.43	.12	.28	.47	.20	1.70
48.0	9.71	32.642	25.18		6.91	107	-.041	1.01	10.30	4.21	.19	.40	.34	.22	1.61
58.0	8.90	32.634	25.30		6.67	101	-.008	.69	11.80	5.84	.37	1.07	.21	.16	1.56
73.0	8.41	32.684	25.42		6.31	95	.030	1.03	13.40	8.98	.34	.10	.09	.05	1.62
98.0	8.19	32.999	25.70		5.36	80	.117	1.54	19.40	15.15	.15	.06	.05	.04	1.53
148.0	7.75	33.773	26.37		3.30	49	.303	2.25	35.80	27.19	.11	.11	.01	.04	1.21
(0-48.0M)													12.78	5.52MG/M2

-----CRUISE W8009 STATION 107-----

DATE 03 OCT 80 SECCHI 17.0M WIND SPD 18KT BAROMETER 1014.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 1131(+07) PHOTIC 49.0M WAVE DIR 170 AIR DRY 15.6C AMOUNT: 80%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: PARTLY CLOUDY
 LON 125-22.7W PM LY DIR 210 REL HUMIDITY 88% VISIBILITY: 10-20KM
 DEPTH 1335M TOTAL 164LY PER 8SEC SURF TEMP 14.88C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
					ML/L SAT ADU	---MICROGRAM---	ATOMS/LITER---				MG/M3---		
1.5	14.88	32.270	23.92		6.06 105 -.023	.54	5.77	.00	.14	.40	.22	.07	1.77
7.0	14.88	32.270	23.92		6.04 104 -.021	.53	5.75	.00	.09	.12	.21	.06	1.79
11.5	14.88	32.270	23.92		6.05 104 -.022	.53	5.73	.00	.09	.14	.22	.08	1.72
18.0	14.62	32.288	23.99		6.12 105 -.026	.53	5.70	.00	.10	.14	.25	.07	1.79
29.0	11.50	32.600	24.84		7.05 114 -.076	.69	6.72	.55	.10	.14	.55	.22	1.72
39.0	10.08	32.624	25.11		6.97 109 -.051	.86	8.10	3.05	.15	.42	.47	.25	1.66
49.0	9.35	32.628	25.23		6.78 104 -.024	.97	11.20	4.66	.21	.84	.36	.28	1.56
57.0	8.56	32.624	25.35		6.58 99 .003	1.05	12.60	6.02	.38	.57	.22	.14	1.61
73.0	8.50	32.647	25.38		6.29 95 .030	1.16	12.80	8.54	.24	.06	.10	.06	1.62
98.0	8.10	33.348	25.98		4.17 63 .223	1.90	27.00			.17	.03	.05	1.41
148.0	7.66	33.794	26.40		3.48 52 .238	2.12	37.70	26.51	.09	.12	.02	.03	1.38
(0- 49.0M)											17.66	7.86MG/M2	

245

C-14 DEPTH M	CHLA ---MG/M3---	PHAED	FO/FA	DEPTH %	-CARBON ASSIM- LIGHT DARK	ASSIM/CHLA MG/MG/(HR OF LIGHT)	SAMPLED DEPTH M
.5	.22	.07	1.77	96.0	34.79	1.85	1.5
7.0	.21	.06	1.79	51.0	24.34	3.55	7.0
12.5	.22	.08	1.72	30.0	18.51	1.64	11.5
21.0	.25	.07	1.79	14.0	5.51	2.03	18.0
30.0	.55	.22	1.72	6.0	7.48	2.46	29.0
49.0	.36	.28	1.56	1.0	**	4.76	49.0
(0- 49.0M)	17.66	7.86MG/M2			559.01MGC/M2/(INCUB*)		

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 18M.
 C-14 SAMPLES INCUBATED FROM 1240, 3 OCTOBER TO 1247, 4 OCTOBER FOR A
 TOTAL OF 11.67 DAYLIGHT HOURS. INSOLATION TOTALED 165 LANGLEYS
 DURING THIS EXPERIMENT.
 21M DARK BOTTLE UPTAKE ESTIMATED.
 ** INDICATES DARK BOTTLE UPTAKE GREATER THAN LIGHT BOTTLE UPTAKE.

-----CRUISE WR009

STATION 108-----

DATE 03 OCT 80 SECCHI 16.0M WIND SPD 18KT BARMETER 1014.6MB CLOUD TYPE: STRATOCUMULUS
 TIME 1252(+07) PHOTIC 49.0M AIR DRY 15.6C AMOUNT: 90%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-15.3W PM LY DIR 210 REL HUMIDITY 88% VISIBILITY: 10-20KM
 DEPTH 880M TOTAL 164LY PER 8SEC SURF TEMP 15.18C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T /M	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FD/FA
					ML/L SAT ADU	---	---MICROGRAM---	---ATOMS/LITER---			---MG/M3---		
2.0	15.18	32.276	23.86		6.02 104 -.023	.55	4.28	.00	.09	.10	.17	.05	1.78
8.0	15.15	32.277	23.86		6.05 106 -.033	.53	4.25	.00	.09	.01	.26	.06	1.82
19.0	14.73	32.279	23.96		7.12 123 -.117	.77	6.52	.86	.09	.29	.37	.23	1.62
29.0	11.39	32.601	24.86		7.23 116 -.089	.71	7.39	.60	.11	.14	.41	.22	1.65
39.0	10.21	32.620	25.08		7.06 111 -.060	.86	9.32	2.82	.14	.47	.37	.19	1.67
49.0	9.34	32.624	25.23		6.84 105 -.030	.97	11.30	4.70	.20	.48	.44	.25	1.64
59.0	8.88	32.622	25.30		6.78 103 -.018	1.06	12.00	5.86	.39	.74	.22	.22	1.50
74.0	8.48	32.657	25.39		6.35 96 .025	1.16	14.20	8.65	.29	.10	.13	.08	1.62
98.0	8.08	33.227	25.89		4.50 68 .194	1.17	25.90	20.15	.15	.14	.08	.05	1.63
146.0	7.52	33.864	26.47		3.69 55 .271	1.91	34.60	22.85	.15	.15	.13	.07	1.67
(0-49.0M)											16.90	8.48MG/M2

-----CRUISE W8009

STATION 109-----

DATE 03 OCT 80 SECCHI 15.0M WIND SPD 14KT BARMETER 1015.2MB CLOUD TYPE: STRATOCUMULUS
 TIME 1420(+07) PHOTIC 41.0M DIR 170 AIR DRY 15.6C AMOUNT: 100%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 14.5C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-07.8W PM LY DIR 210 REL HUMIDITY 89% VISIBILITY: 10-20KM
 DEPTH 454M TOTAL 164LY PER 8SEC SURF TEMP 15.22C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FD/FA	
					ML/L	SAT	ADU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---			
1.0	15.20	32.276	23.85		5.96	103	-.018	.50	5.12	.00	.09	.17	.21	.04	1.85
8.0	15.20	32.276	23.85		6.05	105	-.026	.50	4.59	.00	.09	.17	.20	.07	1.75
19.0	15.04	32.293	23.90		6.02	104	-.022	.50	4.32	.00	.11	.17	.22	.06	1.79
29.0	12.18	32.342	24.67		7.03	115	-.082	.61	6.10	.14	.11	.18	.67	.22	1.76
39.0	10.67	32.522	25.00		7.37	117	-.094	.75	6.07	1.89	.13	.32	.50	.25	1.67
49.0	9.34	32.654	25.25		7.07	109	-.050	.90	9.68	4.23	.19	.66	.33	.26	1.56
59.0	8.50	32.643	25.37		6.48	98	.014	1.08	10.90	8.02	.37	.19	.08	.15	1.36
75.0	8.29	32.821	25.54		5.79	87	.077	1.27	17.10	11.98	.12	.20	.07	.06	1.56
99.0	7.98	33.427	26.06		4.24	64	.217	1.79	29.60		.29	.02	.06	.06	1.28
149.0	7.54	33.840	26.45		3.07	46	.327	2.19	44.30		.21	.08	.05	.05	1.63
(0- 41.0M)												15.22	5.39MG/M2

-----CRUISE W8009

STATION 110-----

DATE 03 OCT 80 SECCHI 11.0M WIND SPD 17KT BARMETER 1016.2MB CLOUD TYPE: STRATOCUMULUS
 TIME 1545(+07) PHOTIC 40.0M DIR 150 AIR DRY 16.1C AMOUNT: 100%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 14.9C WEATHER: UNBROKEN CLOUD LAYER
 LON 125-00.4W PM LY DIR 210 REL HUMIDITY 88% VISIBILITY: 4-10KM
 DEPTH 351M TOTAL 164LY PER 8SEC SURF TEMP 14.72C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FG/FA	
					ML/L	SAT	ADU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---			
2.0	14.72	32.318	23.99		6.23	107	-.037	.50	5.29	.00	.08	.20	.34	.14	1.71
9.0	14.72	32.317	23.99		6.18	106	-.033	.50	5.25	.00	.08	.17	.35	.11	1.76
14.0	14.72	32.318	23.99		6.15	106	-.030	.49	5.22	.00	.08	.16	.35	.14	1.71
21.0	14.24	32.337	24.10		6.25	106	-.034	.52	5.36	.00	.08		.43	.18	1.71
31.0	10.45	32.569	25.00		6.61	104	-.023	.84	9.03	3.51	.30	.39	.50	.25	1.67
41.0	8.94	32.614	25.28		6.72	102	-.014	1.00	11.40	5.89	.34	.65	.25	.24	1.51
51.0	8.56	32.638	25.36		6.43	97	.017	1.07	12.50	7.45	.58	.22	.10	.11	1.48
61.0	8.37	32.734	25.46		6.08	91	.050	1.20	14.50	10.45	.15	.15	.07	.08	1.47
75.0	8.12	33.042	25.74		5.15	77	.136	1.49	20.50	16.05	.15	.14	.04	.06	1.38
97.0	7.65	33.461	26.13		3.75	56	.263	1.96	31.50	25.49	.11	.20	.04	.10	1.30
148.0	7.39	33.880	26.50		1.70	25	.451	2.66	55.60	32.59	.11	.19	.11	.10	1.52
(0- 40.0M)													15.71	7.26MG/M2	251

C-14				-----SIMULATED IN SITU-----				SAMPLED
DEPTH	CHLA	PHAED	FG/FA	LIGHT	-CARBON	ASSIM-	ASSIM/CHLA	DEPTH
M	---MG/M3---	---	---	DEPTH	LIGHT	DARK	MG/MG/(HR	M
				%	MG/M3/(INCUB*)		OF LIGHT)	
5.0	.34	.14	1.71	96.0	56.24	1.83	14.92	2.0
6.0	.34	.14	1.71	49.0	60.39	4.35	15.38	2.0
10.0	.35	.11	1.76	30.0	30.76	5.46	7.61	9.0
17.0	.35	.14	1.71	14.0	15.64	6.23	1.65	14.0
25.0	.43	.18	1.71	5.0	8.18	3.81	1.65	21.0
40.0	.50	.25	1.67	1.0	4.20	1.13	.73	31.0
(0- 40.0M)	15.71	7.26MG/M2			892.87MGC/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 15M
 C-14 SAMPLES INCUBATED FROM 1635, 3 OCTOBER TO 1635, 4 OCTOBER FOR A
 TOTAL OF 11.55 DAYLIGHT HOURS. INSOLATION TOTALED 198 LANGLEYS
 DURING THIS EXPERIMENT.

-----CRUISE W8009

STATION 111-----

DATE 03 OCT 80 SECCHI 10.0M WIND SPD 18KT BAROMETER 1016.2MB CLOUD TYPE: STRATUS
 TIME 1722(+07) PHOTIC 27.0M DIR 150 AIR DRY 15.0C AMOUNT: 100%
 LAT 47-31.8N SUN AM LY WAVE HGT 2M WET 13.9C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-53.0W PM LY DIR 210 REL HUMIDITY 89% VISIBILITY: 4-10KM
 DEPTH 153M TOTAL 164LY PER 8SEC SURF TEMP 14.01C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	-----OXYGEN-----		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	PO/FA	
					ML/L	SAT	ADU	---MICROGRAM---	---ATOMS/LITER---			---MG/M3---			
2.0	14.01	32.322	24.14		6.22	105	-.028	.55	8.62	.37	.20	.25	.76	.11	1.87
6.5	13.86	32.325	24.17		6.22	105	-.027	.55	8.56	.52	.25	.26	.71	.17	1.81
18.0	12.86	32.377	24.41		6.31	104	-.024	.64	8.68	2.03	.29	.28	.78	.13	1.86
28.0	9.28	32.615	25.23		5.96	91	.050	1.12	15.20	9.32	.36	.26	.36	.16	1.69
39.0	8.77	32.751	25.42		5.45	83	.101	1.36	20.40	13.58	.32	.28	.25	.17	1.59
49.0	8.35	32.948	25.63		4.72	71	.172	1.62	27.20	18.10	.30	.17	.18	.14	1.56
59.0	8.09	33.191	25.86		3.96	59	.242	1.91	33.70	22.94	.26	.17	.05	.09	1.33
73.0	7.99	33.425	26.06		3.18	46	.312	2.23	36.50	27.06	.24	.19	.04	.16	1.21
98.0	7.64	33.784	26.39		2.18	33	.404	2.52	46.30		.24	.17	.06	.15	1.29
146.0	7.50	33.852	26.47		1.60	24	.458	2.68	56.30	32.12	.28	.17	.09	.17	1.35
(0-27.0M)													16.69	3.85MG/M2

-----CRUISE W8009 STATION 112-----

DATE 03 OCT 80 SECCHI M WIND SPD 15KT BARMETER 1016.0MB CLOUD TYPE: STRATUS
 TIME 1904(+07) PHOTIC 20.3M DIR 150 AIR DRY 14.4C AMOUNT: 100%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-45.6W PM LY DIR 210 REL HUMIDITY 89% VISIBILITY: 4-10KM
 DEPTH 105M TOTAL 164LY PER 8SEC SURF TEMP 13.16C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ATOMS/LITER---	NO3 ---	NO2 ---	NH3 ---	CHLA ---MG/M3---	PHAED ---	FO/FA
0.0	13.14	32.173	24.20		6.31 105 -.026	.67	14.20	2.74	.15	.30	3.28	1.47	1.69
2.5	13.14	32.173	24.20		6.32 105 -.027	.68	14.10	2.71	.18	.30	3.03	1.30	1.70
7.0	13.14	32.173	24.20		6.26 104 -.022	.67	13.90	2.75	.17	.28	3.37	1.12	1.75
18.0	11.86	32.369	24.60		5.67 92 .045	.96	17.30	5.92	.30	1.24	1.65	.97	1.63
28.0	10.38	32.798	25.19		4.36 69 .178	1.64	24.90	15.15	.55	2.32	.32	.50	1.39
39.0	8.19	33.307	25.94		3.20 48 .309	2.11	26.70	25.87	.33	.16	.08	.41	1.16
48.0	8.01	33.470	26.09		3.35 50 .297	2.05	35.60	25.90	.20	.11	.05	.29	1.14
59.0	7.75	33.615	26.24		1.82 27 .436	2.57	58.30	30.15	.15	.04	.13	.68	1.16
73.0	7.72	33.698	26.31		1.74 26 .444	2.63	59.80	30.86	.14	.12	.19	.56	1.26
101.0	7.63	33.805	26.41		1.63 24 .454	2.64	61.00	31.72	.18	.24	.20	.34	1.37
(0- 20.0M)											52.93	22.25MG/M2	

C-14				SIMULATED IN SITU				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAED ---	FO/FA	DEPTH %	-CARBON LIGHT MG/M3/(INCUB*)	ASSIM- DARK	ASSIM/CHLA MG/MG/(HR OF LIGHT)	
0.0	3.28	1.47	1.69	96.0	296.86	4.84	7.85	0.0
3.0	3.03	1.30	1.70	49.0	182.68	6.01	5.23	2.5
5.0	3.37	1.12	1.75	31.0	68.84	7.57	1.77	7.0
8.5	3.37	1.12	1.75	15.0	51.68	7.31	1.33	7.0
12.5	1.65	.97	1.63	6.0	28.61	2.41	1.50	18.0
18.5	.32	.50	1.39	1.5	**	4.89	.00	28.0
(0- 20.0M)	52.93	22.25MG/M2			1428.15MGC/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE. CALCULATED PRODUCTIVITY
 DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 7.5M
 C-14 SAMPLES INCUBATED FROM 2015, 3 OCTOBER TO 2020, 4 OCTOBER FOR A
 TOTAL OF 11.53 DAYLIGHT HOURS. INSULATION TOTALED 192 LANGLEYS
 DURING THIS EXPERIMENT.
 ** INDICATES DARK BOTTLE UPTAKE GREATER THAN LIGHT BOTTLE UPTAKE.

-----CRUISE W8009

STATION 113-----

DATE 03 OCT 80 SECCHI M WIND SPD 15KT BAROMETER 1015.4MB CLOUD TYPE: STRATUS
 TIME 2044(+07) PHOTIC 16.0M DIR 150 AIR DRY 14.2C AMOUNT: 100%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-38.1W PM LY DIR 210 REL HUMIDITY 91% VISIBILITY: 10-20KM
 DEPTH 68M TOTAL 164LY PER 6SEC SURF TEMP 13.31C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO	FO/FA
1.0	13.31	31.987	24.02		6.33 106 -.030	.68	11.50	2.72	.18	.21	2.85	.78	1.79
7.0	13.26	32.044	24.08		6.23 104 -.021	.73	11.40	3.01	.22	.28	2.56	.78	1.77
13.0	13.01	32.225	24.27		6.19 103 -.014	.73	11.80	3.30	.22	.36	2.09	.69	1.75
24.0	9.78	32.972	25.43		3.84 60 .231	1.85	23.40	17.02	.68	3.16	.19	.37	1.34
34.0	8.23	33.321	25.94		3.09 47 .317	2.18	32.80	25.99	.51	.35	.07	.33	1.17
44.0	7.97	33.470	26.10		2.97 44 .331	2.18	36.40	27.22	.18	.09	.05	.33	1.13
54.0	7.82	33.585	26.21		2.52 38 .373	2.35	45.40	28.65	.15	.16	.05	.38	1.11
64.0	7.74	33.665	26.29		1.68 25 .448	2.72	62.20	30.24	.16	.17	.15	.77	1.16
(0-16.0M)											38.52	11.81	MG/M2

-----CRUISE W8009

STATION 114-----

DATE 03 OCT 80 SECCHI M WIND SPD 15KT BARMETER 1015.4MB CLOUD TYPE: STRATUS
 TIME 2200(+07) PHOTIC 13.5M DIR 150 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-32.0W PM LY DIR 210 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 42M TLTAL 164LY PER 6SEC SURF TEMP 13.71C TIDE: 2.4M EBB

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN---	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
					ML/L SAT AUU	---MICROGRAM---	ATOMS/LITER---				---MG/M3---		
3.0	13.70	30.095	22.49		6.06 101 -.004	.80	25.90	3.50	.39	1.01	1.93	.56	1.78
8.0	13.53	30.452	22.80		5.98 99 .004	.88	25.90	3.96	.40	1.01	1.28	.87	1.59
13.0	13.50	30.507	22.85		5.86 97 .014	.88	25.90	4.07	.41	1.35	1.46	.90	1.62
18.0	13.00	31.586	23.77		5.60 93 .040	.97	22.20	4.82	.42	1.63	.87	1.46	1.37
24.0	13.05	32.013	24.09		5.83 97 .018	.84	15.30	3.84	.35	1.99	.69	1.22	1.36
29.0	11.19	32.494	24.81		5.02 80 .110	1.30	19.50	9.22	.43	1.98	.43	.84	1.34
35.0	8.63	33.299	25.87		2.94 45 .326	2.24	34.90	21.79	.41	3.11	.14	.94	1.13
38.0	8.21	33.430	26.03		2.10 32 .406	2.55	49.90	26.88	.32	1.47	.09	1.33	1.07
(0-13.5M)											21.38	10.14MG/M2	

C-14				-----SIMULATED IN SITU-----				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAED	FO/FA	DEPTH %	-CARBON ASSIM- LIGHT DARK MG/M3/(INCUB*)	ASSIM/CHLA MG/MG/(HR OF LIGHT)		
0.0	1.93	.56	1.78	98.0	228.90	1.93	10.29	3.0
2.0	1.93	.56	1.78	50.0	200.01	1.93	8.99	3.0
3.5	1.28	.87	1.59	32.0	160.39	1.28	10.87	8.0
5.5	1.28	.87	1.59	15.0	89.76	1.28	6.08	8.0
8.0	1.46	.90	1.62	6.0	44.82	1.46	2.66	13.0
13.5	.87	1.46	1.37	1.0	2.71	.87	.27	18.0
(0-13.5M)	21.38	10.14MG/M2			1248.29MGC/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE AT STATION 96 (SAME POSITION). CALCULATED PRODUCTIVITY DEPTHS BASED ON EQUIVALENT SECCHI DISK OF 5M.
 C-14 SAMPLES INCUBATED FROM 2240, 3 OCTOBER TO 2240, 4 OCTOBER FOR A TOTAL OF 11.53 DAYLIGHT HOURS. INSOLATION TOTALLED 192 LANGLEYS DURING THIS EXPERIMENT.

-----CRUISE W8009

STATION 115-----

DATE 03 OCT 80 SECCHI M WIND SPD 15KT BARMETER 1016.5MB CLOUD TYPE: STRATUS
 TIME 2306(+07) PHOTIC 15.0M DIR 150 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-32.0N SUN AM LY WAVE HGT 2M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-27.0W PM LY DIR 210 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 27M TOTAL 164LY PER 7Sec SURF TEMP 13.87C TIDE: 2.1M EBB

DEPTH M	TEMP C	SAL 0/00	SIG-T /M	ATTEN /M	---OXYGEN---		PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FD/FA	
					ML/L	SAT	ADU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---			
2.5	13.87	29.818	22.24		6.18	103	-.016	.75	24.70	3.07	.32	.37	2.85	.78	1.79
7.0	13.86	29.848	22.27		6.33	105	-.029	.75	24.20	3.07	.32	.38	2.94	.69	1.81
12.5	13.81	29.992	22.39		6.24	104	-.021	.81	24.30	3.24	.33	.53	2.47	.71	1.78
18.0	12.84	31.222	23.52		5.99	98	.008	.90	24.30	3.89	.36	1.11	1.90	1.06	1.64
21.0	12.16	31.697	24.02		4.84	79	.118	1.43	29.30	12.30	.40	2.17	1.02	2.31	1.31
(0- 15.0M)													40.88	11.08MG/M2	

C-14				-----SIMULATED IN SITU-----				SAMPLED DEPTH M
DEPTH M	CHLA ---MG/M3---	PHAED	FD/FA	LIGHT DEPTH %	-CARBON ASSIM- LIGHT DARK MG/M3/(INCUB*)	ASSIM/CHLA MG/MG/(HR OF LIGHT)		
2.0	2.85	.78	1.79	50.0	316.20	10.34	9.62	2.5
6.0	2.94	.69	1.81	15.0	136.91	6.97	4.04	7.0
8.5	2.47	.71	1.78	5.0	87.41	5.43	3.07	12.5
(0- 15.0M)	40.88	11.08MG/M2			2103.10MG/M2/(INCUB*)			

1% LIGHT DEPTH BASED ON IRRADIANCE PROFILE AT STATION 95(SAME
 POSITION). CALCULATED PRODUCTIVITY DEPTHS BASED ON EQUIVALENT SECCHI
 DISK OF 5.5M.
 C-14 SAMPLES INCUBATED FROM 2325, 3 OCTOBER TO 2325, 4 OCTOBER FOR A
 TOTAL OF 11.53 DAYLIGHT HOURS. INSULATION TOTALED 192 LANGLEYS
 DURING THIS EXPERIMENT.

-----CRUISE W8009

STATION 116-----

DATE 03 OCT 80 SECCHI M WIND SPD 13KT BAROMETER 1017.0MB CLOUD TYPE: STRATUS
 TIME 2353(+07) PHOTIC 13.5M DIR 140 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-32.3N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-32.8W PM LY DIR 210 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 41M TOTAL 164LY PER 8SEC SURF TEMP 13.79C TIDE: 1.6M EBB

DEPTH M	TEMP C	SAL 0/00	SIG-T /M	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FC/FA
					ML/L SAT ADU	---MICROGRAM-ATOMS/LITER---					---MG/M3---		
6.0	13.81	29.992	22.39		5.95	1.25	27.10	3.54	.34	.57	2.85	.95	1.75
10.0	13.81	30.000	22.39		5.93	.80	27.10	3.60	.32	.73	2.43	.75	1.76
15.0	13.32	30.658	23.00		5.51	.96	27.90	4.63	.37	1.64	1.56	1.28	1.55
20.0	13.06	31.722	23.67		5.66	.93	20.70	4.82	.36	1.32	.72	1.34	1.35
26.0	13.14	32.062	24.11		5.61	.79	21.30	3.63	.28	.87	.84	1.25	1.40
30.0	10.34	32.823	25.22		3.62	1.31	21.40	10.21	.39	1.99	.31	.59	1.35
(0- 30.0M)											50.32	32.18MG/M2

-----CRUISE W8009

STATION 117-----

DATE 04 OCT 80 SECCHI M WIND SPD 14KT BAROMETER 1017.1MB CLOUD TYPE: STRATOCUMULUS
 TIME 0102(+07) PHOTIC 13.5M DIR 140 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-29.5N SUN AM 0600LY WAVE HGT 1M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-31.5W PM 0600LY DIR 210 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 40M TOTAL 192LY PER 8SEC SURF TEMP 14.19C TIDE: 1.0M EBB

DEPTH M	TEMP C	SAL O/00	SIG-T /M	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS -----MICROGRAM-----	SIL -----ATOMS/LITER-----	NO3 -----	NO2 -----	NH3 -----	CHLA -----MG/M3-----	PHAEO -----	FC/FA
1.5	14.19	29.657	22.05		5.95	.88	28.90	2.99	.37	1.92	2.33	1.64	1.59
4.0	14.19	29.661	22.06		5.91	.90	28.70	3.00	.35	2.01	3.11	1.56	1.67
8.0	14.01	29.893	22.27		5.79	.97	28.50	3.26	.36	2.59	2.51	1.90	1.57
13.0	13.78	30.121	22.49		5.64	.96	28.30	3.67	.36	2.64	1.99	2.16	1.48
20.0	13.32	30.723	23.05		4.69	1.05	27.80	4.80	.36	2.81	1.25	1.43	1.47
30.0	8.42	33.355	25.94		2.05	2.55	53.60	26.99	.31	1.80	.37	2.90	1.11
(0- 30.0M)											52.23	57.75MG/M2

-----CRUISE W8009

STATION 118-----

DATE 04 OCT 80 SECCHI M WIND SPD 12KT BARMETER 1017.5MB CLOUD TYPE: STRATOCUMULUS
 TIME 0211(+07) PHOTIC 13.5M DIR 140 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-26.3N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-30.0W PM LY DIR 210 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 35M TOTAL 192LY PER 8SEC SURF TEMP 13.59C TIDE: .5M EBB

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED ---MG/M2---	FO/FA
3.0	13.54	30.606	22.90		6.35	.70	21.00	2.08	.19	.35	3.98	1.21	1.77
5.0	13.58	30.734	23.00		6.31	.66	18.70	1.75	.14	.36	4.41	1.47	1.75
9.0	13.44	31.460	23.59		6.36	.66	14.90	1.43	.14	.34	3.80	1.38	1.73
14.0	13.37	31.664	23.76		6.43	.67	13.40	1.77	.14	.38	2.77	1.30	1.68
20.0	13.02	32.183	24.23		5.74	.70	11.30	2.16	.12	.35	2.51	1.12	1.69
29.0	8.52	33.337	25.91		2.19	2.41	44.60	24.62	.18	2.02	.28	1.59	1.15
(0- 30.0M)											81.85	39.76MG/M2

-----CRUISE W8009 STATION 119-----

DATE 04 OCT 80 SECCHI M WIND SPD 12KT BARMETER 1017.9MB CLOUD TYPE: STRATOCUMULUS
 TIME 0314(+07) PHOTIC 13.5M DIR 140 AIR DRY 13.9C AMOUNT: 100%
 LAT 47-23.9N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-28.7W PM LY DIR 210 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 33M TOTAL 192LY PER 8SEC SURF TEMP 13.71C TIDE: .3M EBB

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT	ASU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO	FD/FA
2.5	13.69	29.776	22.25		6.14		.77	25.70	3.36	.16	.50	4.58	1.04	1.82
5.0	13.42	31.083	23.30		6.22		.77	19.70	2.58	.19	.16	3.89	1.21	1.76
9.0	13.37	31.290	23.47		6.16		.75	16.70	2.36	.19	.25	3.54	1.30	1.73
14.0	13.28	31.605	23.73		6.01		.73	16.50	2.64	.21	.67	2.51	1.21	1.67
21.0	12.85	32.236	24.31		5.52		.63	10.10	3.80	.27	1.08	.75	1.18	1.39
30.0	9.07	33.162	25.69		2.30		2.32	51.00	23.36	.34	2.45	.61	4.67	1.11
(0-30.0M)												69.55	51.40MG/M2

-----CRUISE W8009

STATION 120-----

DATE 04 OCT 80 SECCHI 13.5M WIND SPD 10KT BARMETER 1017.9MB CLOUD TYPE: STRATOCUMULUS
 TIME 0424(+07) PHOTIC 13.5M DIR 140 AIR DRY 13.8C AMOUNT: 100%
 LAT 47-21.2N SUN AM LY WAVE HGT 1M WET 13.2C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-27.2W PM LY DIR 210 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 37M TOTAL 192LY PER 8SEC SURF TEMP 13.80C TIDE: .3M FLOOD

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
					ML/L SAT	AOU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---		
3.0	13.80	29.705	22.17		5.97		.67	25.40		.70	5.10	.61	1.89
7.0	13.28	30.635	22.99		5.55		1.05	29.00		2.28	1.93	1.75	1.53
11.0	13.29	31.101	23.34		5.87		.84	20.80		1.13	1.96	.87	1.69
15.0	13.25	31.813	23.90		6.05		.73	14.50		.79	1.93	.94	1.67
21.0	13.20	32.050	24.09		5.73		.74	12.50		.87	1.46	.94	1.61
32.0	9.58	32.932	25.43		2.60		2.12	43.70		2.12	.28	1.65	1.15
(0-30.0M)											63.89	32.12MG/M2

-----CRUISE W6009

STATION 121-----

DATE 04 OCT 80 SECCHI 13.5M WIND SPD 10KT BARMETER 1018.2MB CLOUD TYPE: STRATOCUMULUS
 TIME 0552(+07) PHOTIC 13.5M DIR 150 AIR DRY 13.3C AMOUNT: 100%
 LAT 47-18.2N SUN AM LY WAVE HGT 1M WET 12.8C WEATHER: UNEROKEN CLOUD LAYER
 LON 124-25.8W PM -Y DIR 210 REL HUMIDITY 95% VISIBILITY: 10-20KM
 DEPTH 46M TOTAL 192LY PER 8SEC SURF TEMP 13.27C TIDE: .8M FLOOD

DEPTH M	TEMP C	SAL U/GO	SIG-T /M	ATTEN /M	---OXYGEN--- ML/L SAT ADU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	ND3	ND2	NH3	CHLA ---MG/M3---	PHAED ---MG/M3---	FO/FA
2.5	13.27	31.108	23.32		5.66	.91	28.90	4.49	.34	.48	1.28	1.18	1.52
5.5	13.22	31.602	23.74		5.70	.95	24.80	4.56	.34	1.39	1.28	1.18	1.52
8.5	13.61	32.049	24.01		5.96	.71	12.60	1.82	.21	.02	1.09	.78	1.58
14.0	13.55	32.175	24.12		6.14	.71	10.60	1.60	.21	.01	.94	.78	1.55
20.0	13.38	32.248	24.21		5.96	.74	10.10	1.97	.19	.11	.87	.62	1.58
29.0	11.18	32.556	24.86		4.59	1.41	21.90	11.42	.38	.92	.59	.72	1.45
(0-30.0M)											28.77	24.67	MG/M2

STATION 122-----

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED	FO/FA
3.0	13.30	32.084	24.10		6.31	.58	16.60	1.97	.15	.00	4.32	1.99	1.68
8.0	13.16	32.099	24.14		6.15	.66	16.80	1.92	.18	.00	3.89	1.73	1.69
14.0	12.72	32.158	24.27		5.86	.79	15.90	14.06	.24	.00	2.37	1.34	1.64
19.0	11.01	32.509	24.94		4.76	1.42	22.40	12.18	.42	.96	.65	.90	1.42
25.0	10.52	32.727	25.11		4.16	1.62	25.90	15.27	.43	1.05	.47	.65	1.42
35.0	8.64	33.260	25.83		1.78	2.57	62.30	26.87	.33	1.07	.41	2.90	1.12
(0-30.0M)											65.45	40.79MG/M2

-----CRUISE W8009

STATION 123-----

DATE 04 OCT 80 SECCHI 15.0M WIND SPD 10KT BARMETER 1018.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 0748(+07) PHOTIC 15.0M DIR 160 AIR DRY 13.3C AMOUNT: 100%
 LAT 47-12.6N SUN AM LY WAVE HGT 1M WET 12.2C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-23.0W PM LY DIR 210 REL HUMIDITY 88% VISIBILITY: 10-20KM
 DEPTH 43M TOTAL 192LY PER 8SEC SURF TEMP 13.45C TIDE: 1.8M FLOOD

DEPTH M	TEMP C	SAL 0/00	SIG-T /M	ATTEN /M	----OXYGEN---- ML/L SAT ADU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO ---MG/M3---	FO/FA
3.0	13.43	32.158	24.13		6.18	.57	13.50	.90	.12	.00	3.89	1.90	1.67
7.5	13.42	32.168	24.14		6.20	.57	12.80	.97	.12	.00	3.37	1.64	1.67
12.5	13.24	32.174	24.18		6.13	.61	12.90	1.80	.13	.05	3.11	1.30	1.71
17.5	13.09	32.178	24.21		5.99	.70	14.20	2.82	.16	.22	2.77	.95	1.74
23.0	12.30	32.275	24.44		5.40	.97	16.40	6.17	.17	.76	1.99	.90	1.69
33.0	10.16	32.775	25.21		4.00	1.67	23.60	15.04	.46	.78	.65	.53	1.55
(0-30.0M)											82.64	38.88MG/M2

-----CRUISE W8009

STATION 124-----

DATE 04 OCT 80 SECCHI M WIND SPD 10KT BARMETER 1017.7MB CLOUD TYPE: STRATOCUMULUS
 TIME 0842(+07) PHOTIC 15.0M DIR 130 AIR DRY 13.8C AMOUNT: 90%
 LAT 47-09.8N SUN AM LY WAVE HGT 1M WET 12.4C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-21.6W PM LY DIR 210 REL HUMIDITY 85% VISIBILITY: 10-20KM
 DEPTH 43M TOTAL 192LY PER 6SEC SURF TEMP 13.60C TIDE: 2.1M FLOOD

DEPTH M	TEMP C	SAL O/00	SIG-T /M	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO ---MG/M3---	FO/FA
2.5	13.60	31.245	23.39		6.10	.70	18.70	2.60	.24	.26	2.85	.61	1.83
8.0	13.54	31.729	23.78		6.08	.63	13.70	1.62	.17	.16	2.40	.87	1.73
13.5	12.72	32.181	24.29		5.52	.71	13.60	2.79	.19		2.31	1.18	1.66
19.0	12.16	32.367	24.54		5.32	1.08	15.70	7.34	.33	.29	1.03	.75	1.58
25.0	10.58	32.692	25.07		4.44	1.20	16.30	8.95	.47	1.22	.97	.87	1.53
34.0	8.48	33.275	25.87		2.08	2.38	48.30	26.62	.28	.60	.19	1.40	1.12
(0- 30.0M)											53.47	26.49MG/M2

-----CRUISE W8009

STATION 125-----

DATE 04 OCT 80 SECCHI M WIND SPD 8KT BAROMETER 1018.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 0928(+07) PHOTIC 15.0M DIR 155 AIR DRY 14.2C AMOUNT: 30%
 LAT 47-07.0N SUN AM LY WAVE HGT 1M WET 12.6C WEATHER: PARTLY CLOUDY
 LON 124-20.3W PM LY DIR 210 REL HUMIDITY 83% VISIBILITY: 10-20KM
 DEPTH 45M TOTAL 192LY PER 6SEC SURF TEMP 13.06C TIDE: 2.3M FLOOD

DEPTH M	TEMP C	SAL O/00	SIG-T /M	ATTEN /M	---OXYGEN--- ML/L SAT	ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED MG/M2	FG/FA
2.5	13.06	30.134	22.64		5.60		1.02	30.20	6.41	.35	.35	5.01	1.21	1.81
7.5	12.82	30.569	23.02		5.50		1.13	30.50	7.71	.34	.62	2.94	1.21	1.71
12.5	13.32	31.586	23.71		5.95		.91	20.10	4.11	.30	.78	1.50	1.12	1.57
15.0	13.11	32.174	24.21		6.00		.85	10.50	2.90	.25	.87	.78	1.18	1.40
24.0	12.30	32.338	24.49		4.85		.93	12.00	4.90	.34	1.19	.53	1.06	1.33
34.0	8.66	33.255	25.83		2.06		2.44	50.40	25.90	.30	.93	.37	2.99	1.11
(0- 30.0M)												56.75	37.69MG/M2

STATION 126-----

DATE 04 OCT 80	SECCHI 18.0M	WIND SPD 8KT	BAROMETER 1017.0MB	CLOUD TYPE: STRATOCUMULUS
TIME 1223(+07)	PHOTIC 45.0M	DIR 140	AIR DRY 14.6C	AMOUNT: 80%
LAT 47-07.1N	SUN AM LY	WAVE HGT 1M	WET 12.9C	WEATHER: UNBROKEN CLOUD LAYER
LONG 124-58.0W	PM LY	DIR 210	REL HUMIDITY 83%	VISIBILITY: 1-2KM
DEPTH 197M	TOTAL 192LY	PER 5SEC	SURF TEMP 15.31C	TIDE: M

DEPTH M	TEMP C	SAL O/GO	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO	FO/FA
10.5	15.28	32.343	23.89		5.61	1.55	6.24	.00	.14	.11			
100.0	7.89	33.332	26.00		4.20	1.73	26.20	19.56	.14	.14			
177.0	7.31	33.916	26.54		2.08	2.62	53.40	32.13	.17	.27			
186.0	7.29	33.920	26.55		1.96	2.64	55.10	32.23	.17	.40

-----CRUISE W0009

STATION 127-----

DATE 04 OCT 80 SECCHI M WIND SPD OKT BAROMETER 1016.9MB CLOUD TYPE: STRATOCUMULUS
 TIME 1351(+07) PHOTIC 30.0M AIR DRY 15.0C AMOUNT: 40%
 LAT 47-13.5N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: PARTLY CLOUDY
 LON 124-52.1W PM LY DIR 210 REL HUMIDITY 83% VISIBILITY: 20-50KM
 DEPTH 190M TOTAL 192LY PER 55EC SURF TEMP 15.01C TIDE: M

DEPTH M	TEMP C	SAL U/00	SIG-T	ATTEN /M	----OXYGEN---- ML/L SAT ADU	PHUS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED FG/FA
9.0	14.87	32.305	23.95		5.60	.24	5.38	.00	.15	.25		
102.0	7.91	33.600	26.21		3.16	2.14	36.00	26.17	.13	.19		
160.0	7.32	33.912	26.54		2.10	2.60	53.90	31.91	.19	.42		
180.0	7.25	33.923	26.56		2.20	2.56	53.60	32.04	.16	.32

-----CRUISE W8009

STATION 128-----

DATE 04 OCT 80 SECCHI 13.0M WIND SPD OKT BAROMETER 1016.1MB CLOUD TYPE: STRATOCUMULUS
 TIME 1508(+07) PHOTIC 30.0M WIND DIR AIR DRY 14.7C AMOUNT: 50%
 LAT 47-17.7N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: PARTLY CLOUDY
 LON 124-45.0W PM LY DIR 210 REL HUMIDITY 86% VISIBILITY: 20-50KM
 DEPTH 182M TOTAL 192LY PER 5SEC SURF TEMP 14.96C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T /M	ATTN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED FG/FA
9.5	14.53	32.306	24.02		5.51	.56	5.93	.06	.12			
96.0	7.59	33.826	26.43		2.31	2.48	45.10	30.83	.17			
153.0	7.39	33.901	26.52		1.99	2.65	51.30	32.39	.21			
173.0	7.37	33.905	26.53		2.01	2.65	52.10	32.19	.21

-----CRUISE W0009

STATION 129-----

DATE 04 OCT 80 SECCHI 11.0M WIND SPD 3KT BAROMETER 1016.0MB CLOUD TYPE: CIRRUS
 TIME 1637(+07) PHOTIC 30.0M DIR 14.4C AMOUNT: 70%
 LAT 47-26.0N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: PARTLY CLOUDY
 LON 124-48.1W PM LY DIR 210 REL HUMIDITY 89% VISIBILITY: 20-50KM
 DEPTH 235M TOTAL 192LY PEP 5SEC SURF TEMP 13.84C TIDE: M

DEPTH M	TEMP C	SAL O/GO	SIG-T /M	ATTEN /M	---OXYGEN--- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED FG/FA
10.0	13.72	32.328	24.20		5.67	.59	8.58	1.14	.22			
102.0	7.51	33.848	26.46		1.94	2.44	51.10	32.02	.18			
210.0	7.38	33.903	26.52		1.76	2.54	55.60	32.85	.25			
227.0	7.37	33.904	26.53		1.70	2.54	55.80	32.96	.24

-----CRUISE W8009

STATION 130-----

DATE 04 OCT 80 SECCHI M WIND SPD 3KT BAROMETER 1015.1MB CLOUD TYPE: CIRRUS
 TIME 1803(+07) PHOTIC 32.0M DIR AIR DRY 14.4C AMOUNT: 100%
 LAT 47-31.6N SUN AM LY WAVE HGT 1M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-58.3W PM LY DIR 210 REL HUMIDITY 89% VISIBILITY: 10-20KM
 DEPTH 196M TOTAL 192LY PER 6SEC SURF TEMP 14.95C TIDE: M

DEPTH M	TEMP C	SAL 0700	SIG-T /M	ATTEN /M	---OXYGEN--- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3 ---	NO2 ---	NH3 ---	CHLA ---MG/M3---	PHAEG FD/FA
14.0	13.33	32.377	24.32		5.67	.51	5.64	.25	.15			
102.0	7.66	33.783	26.39		1.95	2.40	51.80	31.27	.13			
167.0	7.37	33.592	26.52		1.46	2.65	62.00	33.57	.13			
187.0	7.33	33.899	26.53		1.44	2.61	60.80	33.55	.15

-----CRUISE W8009

STATION 131-----

DATE 05 OCT 80 SECCHI M WIND SPD 6KT BAROMETER 1017.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 2327(+07) PHOTIC 46.0M DIR 180 AIR DRY 13.9C AMOUNT: 80%
 LAT 47-07.2N SUN AM LY WAVE HGT 2M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LGN 124-58.1W PM LY DIR 220 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 190M TOTAL 237LY PER 7SEC SURF TEMP 15.55C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN---- ML/L SAT ADU	PHOS ---MICROGRAM---ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED FC/FA
17.0	15.18	32.322	23.69	.558	6.15	.54	6.26	.00	.10			
35.0	10.32	32.588	25.04	.587	7.07	.82	9.41	1.92	.12			
68.0	8.34	32.739	25.47	.419	5.85	1.26	15.40	10.80	.10			
78.0	7.81	33.047	25.79	.406	5.29	1.52	21.30	15.95	.05			
99.0	8.01	33.428	26.06	.427	3.74	2.02	33.20	24.18	.02			
132.0	7.62	33.833	26.43	.619	2.08	2.58	49.90	31.79	.01			
153.0	7.40	33.900	26.52	.692	1.73	2.70	54.60	33.19	.01			
172.0	7.34	33.917	26.54	.617	1.84	2.68	54.00	33.34	.06			
182.0	7.33	33.918	26.54	.629	1.80	2.68	54.40	33.36	.04

-----CRUISE W8009

STATION 131-----

DATE 06 OCT 80 SECCHI M WIND SPD 10KT BARMETER 1018.3MB CLOUD TYPE: STRATOCUMULUS
 TIME 0144(+07) PHOTIC 46.0M DIR 180 AIR DRY 14.2C AMOUNT: 100%
 LAT 47-07.7N SUN AM LY WAVE HGT 2M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-57.9W PM LY DIR 220 REL HUMIDITY 91% VISIBILITY: 10-20KM
 DEPTH 190M TOTAL 118LY PER 6SEC SURF TEMP 15.50C TIDE: M

DEPTH M	TEMP C	SAL 0700	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED FO/FA
1.0	15.48	32.328	23.83	.539	5.60	.54	4.97	.00	.17	.15		
6.0	15.48	32.328	23.83	.539	5.67	.55	5.09	.00	.10	.26		
10.0	15.47	32.328	23.83	.542	5.82	.54	5.39	.00	.11	.12		
16.0	15.19	32.309	23.88	.553	5.99	.55	5.35	.00	.11	.05		
22.0	15.10	32.315	23.90	.553	5.83	.56	5.31	.00	.12	.31		
28.0	12.78	32.449	24.46	.640	6.67	.62	6.95	.24	.16	.34		
36.0	10.45	32.577	25.01	.604	6.99	.79	9.28	1.60	.16	.59		
54.0	8.92	32.622	25.29	.467	6.46	1.05	11.40	5.87	.49	.73		
64.0	8.41	32.694	25.43	.430	5.95	1.21	14.40	9.96	.24	.31		
79.0	7.90	32.923	25.68	.414	5.60	1.42	18.80	14.04	.16	.39

-----CRUISE W8009 STATION 132-----

DATE 06 OCT 80 SECCHI M WIND SPD 10KT BARMETER 1019.9MB CLOUD TYPE: STRATOCUMULUS
 TIME 0551(+07) PHOTIC 48.0M DIF 190 AIR DRY 15.6C AMOUNT: 100%
 LAT 47-07.9N SUN AM LY WAVE HGT 2M WET 13.9C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-58.0W PM LY DIR 220 REL HUMIDITY 83% VISIBILITY: 10-20KM
 DEPTH 195M TOTAL 118LY PER SEC SURF TEMP 15.71C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FC/FA
					ML/L SAT	ADU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---		
18.5	15.52	32.340	23.83	.504	5.60		.52	5.48	.10	.12		.35	
41.0	10.05	32.602	25.09	.522	6.63		.90	10.20	3.29	.12		1.38	
64.0	8.41	32.708	25.44	.423	5.88		1.29	15.50	10.94	.16		.34	
83.0	8.02	33.084	25.79	.409	5.06		1.56	21.70	18.65	.15		.54	
93.0	8.05	33.307	25.96	.415	4.25		1.77	26.30	19.85	.15		.36	
103.0	7.97	33.515	26.13	.451	3.21		2.17	35.40	25.64	.16		.38	
142.0	7.44	33.891	26.51	.670	1.84		2.68	52.30	32.62	.18		.40	
181.0	7.39	33.905	26.52	.639	1.83		2.73	54.40	33.08	.22		.49	
189.0	7.38	33.907	26.53	.681	1.79		2.71	55.10	33.04	.26		.58	

-----CRUISE W8009

STATION 132-----

DATE 06 OCT 80 SECCHI 22.0M WIND SPD 10KT BARMETER 1020.2MB CLOUD TYPE: STRATUS
 TIME 0830(+07) PHOTIC 48.0M WIND DIR 100 AIR DRY 15.3C AMOUNT: 100%
 LAT 47-07.3N SUN AM LY WAVE HGT 3M WET 14.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-57.4W PM LY DIR 240 REL HUMIDITY 90% VISIBILITY: 10-20KM
 DEPTH 177M TOTAL 118LY PER 95c SURF TEMP 15.69C TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

THIS PAGE
WAS INTENTIONALLY
LEFT BLANK

-----CRUISE W8009

STATION 133-----

DATE 06 OCT 80 SECCHI 25.0M WIND SPD 10KT BAROMETER 1021.8MB CLOUD TYPE: STRATUS
 TIME 1135(+07) PHOTIC 48.0M DIR 155 AIR DRY 14.4C AMOUNT: 1007
 LAT 47-07.4N SUN AM LY WAVE HGT 3M WET 13.9C WEATHER: DRIZZLE
 LON 124-58.0W PM LY DIR 240 REL HUMIDITY 95% VISIBILITY: 10-20KM
 DEPTH 196M TOTAL 118LY PER 9SEC SURF TEMP 15.74C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO ---MG/M3---	FO/FA
18.0	15.67	32.346	23.60	.503	5.82	.53	5.91	.00	.11	.39			
41.0	9.94	32.591	25.10	.518	6.73	.93	11.50	3.87	.20	.94			
63.0	8.46	32.685	25.41	.425	5.91	1.20	14.40	9.57	.20	.62			
87.0	7.90	32.974	25.72	.416	5.35	1.47	20.30	14.85	.15	.63			
117.0	7.81	33.649	26.30	.511	2.49	2.37	41.80	29.04	.16	.64			
137.0	7.50	33.878	26.49	.662	1.92	2.64	52.00	32.60	.20	.51			
157.0	7.45	33.895	26.51	.670	1.83	2.68	53.90	32.57	.43	.65			
177.0	7.39	33.904	26.52	.665	1.87	2.69	54.40	33.03	.27	.77			
192.0	7.35	33.909	26.53	.674	1.78	2.70	54.40	32.91	.29	.69

-----CRUISE W0009

STATION 133-----

DATE 06 OCT 80 SECCHI 25.0M WIND SPD 8KT BARMETER 1022.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 1250(+07) PHOTIC 48.0M DIR 150 AIR DRY 14.7C AMOUNT: 100%
 LAT 47-07.9N SUN AM LY WAVE HGT 3M WET 14.1C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-58.0W PM LY DIR 240 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 195M TOTAL 118LY PER 9SEC SURF TEMP 15.75C TIDE: M

DEPTH M	TEMP C	SAL J/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT	ADU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA	PHAED	FD/FA
5.5	15.75	32.347	23.79	.502	5.79									
54.0	9.29	32.607	25.22	.484	6.52

-----CRUISE W8009 STATION 134-----

DATE 06 OCT 80 SECCHI M WIND SPD 8KT BAROMETER 1022.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 1545(+07) PHOTIC 48.0M WAVE DIR 190 AIR DRY 15.6C AMOUNT: 90%
 LAT 47-08.1N SUN AM LY WAVE HGT 3M WET 15.0C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-58.6W PM LY DIR 240 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 195M TOTAL 118LY PER 9SEC SURF TEMP 15.83C TIDE: M

DEPTH M	TEMP C	SAL O/GO	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FC/FA
					ML/L SAT ADU	---	---	---	---	---	---	---	---
						MICROGRAM-ATOMS/LITER					MG/M3		
0.0	15.82	32.343	23.77		5.60	.52	4.98	.00	.14	.78			
10.0	15.76	32.344	23.78	.502	5.93	.52	5.07	.00	.13	.65			
21.0	15.70	32.347	23.80	.501	5.92	.52	5.15	.00	.13	.59			
26.0	14.31	32.378	24.12	.557	6.49	.56	5.23	.00	.13	.60			
32.0	12.47	32.477	24.56	.664	6.95	.65	6.31	.11	.13	.61			
37.0	10.84	32.554	24.92	.638	7.10	.77	10.40	1.43	.20	.55			
42.0	9.81	32.598	25.13	.530	6.72	.97	12.00	4.63	.22	.84			
48.0	9.34	32.602	25.21	.482	6.77	1.01	12.20	5.42	.22	1.21			
53.0	8.92	32.612	25.28	.456	6.60	1.06	12.80	6.43	.30	1.39			
77.0	7.93	32.988	25.73	.414	5.52	1.46	20.60	14.55	.15	.67			
103.0	7.93	33.499	26.12	.446	3.45	2.08	34.50	25.21	.19	.86			

UM SAMPLED WITH SURFACE BUCKET. TEMPERATURE, SALINITY, OXYGEN FROM
 CTD DOWNCAST.

-----CRUISE W8009

STATION 135-----

DATE 06 OCT 80 SECCHI M WIND SPD 2KT BAROMETER 1022.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 1812(+07) PHOTIC 45.0M AIR DRY 16.7C AMOUNT: 80%
 LAT 47-07.2N SUN AM LY WAVE HGT 3M WET 15.6C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-58.0W PM LY DIR 240 REL HUMIDITY 89% VISIBILITY: 4-10KM
 DEPTH 191M TOTAL 113LY PER 7SEC SURF TEMP 15.85C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT AOU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED	FO/FA
17.2	15.75	32.347	23.79	.502	2.94	.53	4.88	.00	.12				
43.0	10.37	32.584	25.03	.594	7.06	.90	9.57	2.94	.22				
63.0	8.71	32.635	25.33	.440	6.33	1.14	12.70	7.12	.41				
88.0	8.08	33.258	25.92	.422	4.35	1.66	25.60	20.34	.16				
116.0	7.67	33.795	26.40	.503	2.74	2.41	41.80	29.54	.16				
137.0	7.47	33.882	26.49	.656	1.93	2.70	50.30	32.52	.18				
156.0	7.42	33.897	26.51	.711	1.96	2.69	50.90	32.36	.24				
172.0	7.39	33.902	26.52	.690	1.85	2.71	52.60	32.73	.27				
182.0	7.36	33.910	26.53	.743	1.78	2.68	53.50	32.71	.29

-----CRUISE W8009

STATION 136-----

DATE 06 OCT 80 SECCHI M WIND SPD 2KT BARMETER 1021.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 2030(+07) PHOTIC 45.0M DIR 240 AIR DRY 15.7C AMOUNT: 80%
 LAT 47-06.6N SUN AM LY WAVE HGT 3M WET 15.1C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-59.3W PM LY DIR 240 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 533M TOTAL 118LY PER 9SEC SURF TEMP 15.82C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----DAYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FC/FA
					ML/L SAT AOU	---MICROGRAM---	---ATOMS/LITER---				---MG/M3---		
3.0	15.81	32.329	23.76	.491	5.90	.52	5.76	.00	.19	.12			
53.0	9.82	32.614	25.14	.493	6.70	.94	10.80	4.82	.21	.59			
102.0	8.03	33.329	25.98	.409	4.20	1.85	27.20	21.50	.20	.38			
152.0	7.45	33.891	26.50	.623	1.89	2.68	52.10	33.54	.16	.43			
201.0	7.32	33.921	26.55	.635	1.78	2.74	55.10	34.15	.15	.58			
249.0	7.17	33.947	26.59	.580	1.80	2.75	56.40	34.66	.14	.61			
297.0	6.82	33.986	26.67	.490	1.95	2.70	57.60	35.17	.13	.51			
344.0	6.53	34.003	26.72	.497	1.84	2.70	60.60	34.85	.14	.47			
420.0	5.78	34.052	26.85	.464	1.40	2.94	72.60	38.17	.13	.43			
492.0	5.22	34.096	26.96	.474	.99	3.11	84.60	40.77	.13	.57

-----CRUISE W8009

STATION 137-----

DATE 06 OCT 80 SECCHI M WIND SPD OKT BAROMETER 1021.9MB CLOUD TYPE: STRATUS
 TIME 2317(+07) PHOTIC 45.0M DIR AIR DRY 15.8C AMOUNT: 100%
 LAT 47-07.1N SUN AM LY WAVE HGT 2M WET 15.0C WEATHER: DRIZZLE
 LGN 124-57.9W PM LY DIR 240 REL HUMIDITY 94% VISIBILITY: 4-10KM
 DEPTH 192M TOTAL 113LY PER 6SEC SURF TEMP 15.81C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
					ML/L SAT	ADU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---		
17.5	15.78	32.341	23.78	.492	5.82		.52	5.85	.00	.15	.38		
48.0	10.17	32.597	25.07	.538	6.71		.90	9.33	3.16	.19	.41		
78.0	8.40	32.719	25.45	.425	5.80		1.27	14.20	10.76	.14	.38		
102.0	8.07	33.221	25.89	.417	4.54		1.75	32.40	19.47	.13	.58		
119.0	7.88	33.617	26.23	.466	2.89		2.30	38.10	27.83	.13	.43		
138.0	7.58	33.843	26.45	.603	2.04		2.53	48.60	32.04	.16	.39		
164.0	7.41	33.898	26.52	.681	2.01		2.67	51.40	32.50	.20	.44		
173.0	7.34	33.904	26.52	.642	1.95		2.67	51.70	32.90	.20	.59		
184.0	7.36	33.909	26.53	.647	1.84		2.71	52.20	33.00	.20	.63

-----CRUISE W8009 STATION 138-----

DATE 07 OCT 80 SECCHI M WIND SPD OKT BARMETER 1022.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 0548(+07) PHOTIC 45.0M DIR AIR DRY 15.0C AMOUNT: 40%
 LAT 47-07.2N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: PARTLY CLOUDY
 LON 124-58.2W PM LY DIR 240 REL HUMIDITY 94% VISIBILITY: 4-10KM
 DEPTH 215M TOTAL 179LY PER 6SEC SURF TEMP 15.78C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
					ML/L SAT AUU	---	---	---	---	---	---	---	---
						---	---	---	---	---	---	---	---
13.5	15.76	32.325	23.77	.478	5.69	.54	4.98	.00	.12	.41			
43.0	12.24	32.493	24.62	.536	6.49	.65	6.06	.00	.16	.68			
64.0	8.75	32.634	25.33	.444	6.28	1.11	12.90	7.25	.31	.89			
93.0	8.08	33.237	25.90	.422	4.50	1.78	26.10	19.93	.17	.49			
118.0	7.70	33.790	26.39	.551	2.41	2.48	45.40	30.15	.25	.50			
147.0	7.46	33.884	26.50	.662	2.00	2.62	51.40	32.10	.20	.59			
177.0	7.43	33.894	26.51	.703	1.93	2.66	52.90	32.19	.21	.42			
196.0	7.36	33.909	26.53	.655	1.88	2.70	53.30	32.65	.25	.59			
209.0	7.36	33.910	26.53	.659	1.80	2.71	53.90	33.02	.18	.62

-----CRUISE W8009 STATION 138-----

DATE 07 OCT 80 SECCHI 25.0M WIND SPD OKT BAROMETER 1022.5MB CLOUD TYPE: STRATUS
 TIME 0842(+07) PHOTIC 45.0M AIR DRY 15.2C AMOUNT: 80%
 LAT 47-07.0N SUN AM LY WAVE HGT 2M WET 14.6C WEATHER: PARTLY CLUDY
 LON 124-58.2W PM LY DIR 240 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 276M TOTAL 179LY PER 8SEC SURF TEMP 15.77C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT	ADD	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
					---MICROGRAM-ATOMS/LITER---			---			---MG/M3---			
36.0	13.03	32.448	24.43	.554	6.44									
54.0	9.50	32.602	25.19	.483	6.42									
270.0	6.92	33.970	26.64	.541	1.90

-----CRUISE W8009

STATION 139-----

DATE 07 OCT 80 SECCHI --- M WIND SPD 6KT BARMETER 1022.6MB CLOUD TYPE: STRATUS
 TIME 1110(+07) PHOTIC 40.0M DIR 240 AIR DRY 15.2C AMOUNT: 90%
 LAT 47-07.2N SUN AM --- LY WAVE HGT 2M WET 15.3C WEATHER: FOG OR HAZE
 LON 124-56.1W PM --- LY DIR 240 REL HUMIDITY 91% VISIBILITY: 4-10KM
 DEPTH 200M TOTAL 179LY PER SEC SURF TEMP 15.80C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT ADU	PHUS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA	PHAEO	FD/FA
13.5	15.74	32.324	23.77	.494	5.60	.52	5.75	.00	.14	.66			
44.0	10.23	32.588	25.05	.556	6.54	.89	10.30	3.69	.25	.96			
64.0	9.79	32.631	25.32	.448	6.15	1.11	11.50	7.09	.40	1.11			
93.0	8.10	33.183	25.86	.425	4.89	1.71	22.10	18.91	.19	.72			
120.0	7.77	33.709	26.31	.516	2.49	2.45	39.50	29.73	.17	.72			
140.0	7.46	33.966	26.50	.656	1.80	2.69	44.20	32.78	.22	.86			
160.0	7.40	33.898	26.52	.689	1.76	2.69	46.50	32.79	.21	.78			
181.0	7.39	33.903	26.52	.692	1.80	2.72	47.40	32.99	.21	.66			
195.0	7.35	33.909	26.53	.670	1.81	2.71	47.10	32.99	.21	.69

-----CRUISE W8009

STATION 140-----

DATE 07 OCT 80 SECCHI 28.0M WIND SPD 4KT BAROMETER 1021.9MB CLOUD TYPE: STRATOCUMULUS
 TIME 1743(+07) PHOTIC 48.0M DIR 270 AIR DRY 16.7C AMOUNT: 60%
 LAT 47-07.1N SUN AM LY WAVE HGT 2M WET 14.4C WEATHER: PARTLY CLOUDY
 LON 124-57.8W PM LY DIR 270 REL HUMIDITY 78% VISIBILITY: 10-20KM
 DEPTH 195M TOTAL 179LY PER SEC SURF TEMP 16.05C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FC/FA
					ML/L SAT ADU	---	---	---	---	---	---	---	---
						MICROGRAM	ATOMS/LITER				MG/M3		
18.0	15.83	32.353	23.77	.488	5.68	.51	4.52	.00	.14	.36			
48.0	10.32	32.591	25.04	.557	6.41	.91	9.54	3.92	.21	.40			
64.0	9.94	32.611	25.28	.462	5.99	1.08	11.30	6.14	.25	.80			
93.0	8.01	33.244	25.92	.411	4.76	1.72	23.90	19.26	.14	.90			
120.0	7.76	33.733	26.34	.533	2.38	2.50	45.00	30.70	.14	.32			
139.0	7.52	33.863	26.47	.629	1.95	2.69	54.30	32.89	.21	.26			
159.0	7.46	33.882	26.50	.683	1.90	2.69	54.50	33.09	.21	.21			
175.0	7.47	33.882	26.49	.717	1.90	2.73	54.90	33.26	.24	.51			
185.0	7.43	33.891	26.51	.753	1.86	2.74	55.60	33.35	.25	.61

-----CRUISE W8009

STATION 141-----

DATE 07 OCT 80 SECCHI M WIND SPD 7KT BAROMETER 1022.0MB CLOUD TYPE: STRATUS
 TIME 2311(+07) PHOTIC 45.0M DIR 235 AIR DRY 15.6C AMOUNT: 100%
 LAT 47-07.3N SUN AM LY WAVE HGT 3M WET 15.6C WEATHER: FCG OR HAZE
 LON 124-58.1W PM LY DIR 270 REL HUMIDITY 100% VISIBILITY: 4-10KM
 DEPTH 197M TOTAL 179LY PER 9SEC SURF TEMP 16.08C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT AOU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA	PHAED	FO/FA
13.0	15.97	32.376	23.76	.477	5.59	.52	5.66	1.85	.11	.60			
44.0	10.38	32.581	25.02	.575	6.42	.86	8.21	2.82	.19	.91			
64.0	8.82	32.625	25.31	.456	5.81	1.09	20.70	6.79	.31	1.18			
103.0	8.02	33.299	25.96	.419	4.52	1.85	33.60	21.02	.18	.55			
117.0	8.01	33.449	26.08	.432	3.20	2.05	36.40	24.14	.16	.57			
136.0	7.58	33.835	26.44	.578	2.03	2.65	61.20	32.14	.16	.58			
156.0	7.46	33.865	26.50	.658	1.90	2.74	56.40	32.96	.24	.67			
172.0	7.40	33.900	26.52	.680	1.92	2.75	55.30	33.05	.25	.70			
187.4	7.35	33.908	26.53	.696	1.91	2.75	55.30	32.29	.21	.86

-----CRUISE W8009 STATION 142-----

DATE 08 OCT 80 SECCHI M WIND SPD 12KT BAROMETER 1023.1MB CLOUD TYPE: STRATOCUMULUS
 TIME 0310(+07) PHOTIC M DIR 300 AIR DRY 14.4C AMOUNT: 90%
 LAT 47-13.4N SUN AM LY WAVE HGT 3M WET 13.9C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-30.5W PM LY DIR 270 REL HUMIDITY 95% VISIBILITY: 10-20KM
 DEPTH 67M TOTAL 272LY PER 9SEC SURF TEMP 14.78C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN---- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO	FO/FA
2.0	13.70	31.714	23.72	1.070	6.09								
3.5	13.70	31.720	23.73	1.064	5.86	.49	14.30	.00	.15	.57			
5.0	13.57	31.722	23.77	1.153	5.91	.57	12.80	.95	.16	.48			
7.0	13.55	32.000	23.99	1.206	6.28	.70	14.30	1.67	.19	.47			
17.0	12.65	32.242	24.35	.837	5.37	.87	14.00	4.14	.28	1.06			
20.0	11.69	32.452	24.69	.786	4.80	1.14	16.80	7.09	.43	1.79			
25.0	10.80	32.664	25.01	.719	3.89	1.60	23.50	13.74	.46	1.77			
41.0	8.19	33.280	25.92	.476	2.88	2.29	33.80	26.72	.18	.46

-----CRUISE W8009 STATION 142-----

DATE 08 OCT 80 SECCHI M WIND SPD 15KT BAROMETER 1024.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 0410(+07) PHOTIC M DIR 330 AIR DRY 14.4C AMOUNT: 90%
 LAT 47-13.8N SUN AM LY WAVE HGT 3M WET 13.9C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-30.0W PM LY DIR 270 REL HUMIDITY 95% VISIBILITY: 10-20KM
 DEPTH 65M TOTAL 272LY PER 9SEC SURF TEMP 14.75C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT AUU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA	PHAEO	PG/FA
7.5	14.23	31.705	25.67	1.208	6.37	.50	12.70	.00	.13	.42			
12.5	13.50	32.037	24.02	1.218	6.15	.55	12.10	.00	.14	.42			
18.0	12.70	32.242	24.34	.915	5.52	.82	14.70	3.17	.24	1.17			
24.0	12.25	32.343	24.50	.780	4.79	1.05	15.70	6.27	.38	1.67			
34.0	8.98	33.055	25.62	.558	3.27	2.10	12.20	23.47	.33	.77			
44.0	7.96	33.408	26.05	.450	3.47	2.16	16.10	25.69	.11	.42			

-----CRUISE W8009

STATION 142-----

DATE 08 OCT 80	SECCHI 6.0M	WIND SPD 15KT	BAROMETER 1025.5MB	CLOUD TYPE: STRATOCUMULUS
TIME 0830(+07)	PHOTIC M	DIR 315	AIR DRY 13.9C	AMOUNT: 80%
LAT 47-13.6N	SUN AM LY	WAVE HGT 3M	WET 12.8C	WEATHER: UNBROKEN CLOUD LAYER
LON 124-29.8W	PM LY	DIR 270	REL HUMIDITY 88%	VISIBILITY: 10-20KM
DEPTH 66M	TOTAL 272LY	PER 9SEC	SURF TEMP 14.39C	TIDE: M

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

THIS PAGE
WAS INTENTIONALLY
LEFT BLANK

-----CRUISE W8009

STATION 143-----

DATE 08 OCT 80 SECCHI 7.0M WIND SPD 16KT BAROMETER 1027.8MB CLOUD TYPE: CUMULUS
 TIME 1200(+07) PHOTIC 19.0M DIR 340 AIR DRY 15.6C AMOUNT: 50%
 LAT 47-07.2N SUN AM LY WAVE HGT 3M WET 13.9C WEATHER: PARTLY CLOUDY
 LON 124-29.0W PM LY DIR 270 REL HUMIDITY 83% VISIBILITY: 10-20KM
 DEPTH 68M TOTAL 272LY PER 9SEC SURF TEMP 14.25C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA	PHAEO	FC/FA
3.0	14.25	31.465	23.43	1.244	6.00	.58	8.81	.38	.17	.51			
8.0	14.19	31.525	23.49	1.176	6.00	.61	9.02	.51	.15	.55			
14.0	13.56	31.980	23.97	.986	5.71	.64	9.67	.93	.17	.65			
20.0	12.56	32.284	24.40	.780	4.69	.89	11.60	4.22	.32	1.32			
25.0	10.13	32.801	25.24	.672	3.41	1.73	22.40	16.67	.43	1.54			
36.0	8.29	33.280	25.90	.508	2.93	2.35	32.90	28.23	.17	.65			
46.0	7.93	33.442	26.08	.473	3.28	2.16	31.60	26.03	.17	.82			
57.0	7.86	33.657	26.26	1.343	2.59	2.49	44.10	28.59	.21	.86

-----CRUISE W8009

STATION 144-----

DATE 08 OCT 80 SECCHI M WIND SPD 18KT BAROMETER 1028.4MB CLOUD TYPE: CUMULUS
 TIME 1333(+07) PHOTIC 16.0M DIR 340 AIR DRY 15.1C AMOUNT: 20%
 LAT 46-55.0N SUN AM LY WAVE HGT 3M WET 12.6C WEATHER: PARTLY CLOUDY
 LON 124-31.5W PM LY DIR 270 REL HUMIDITY 75% VISIBILITY: 10-20KM
 DEPTH 94M TOTAL 272LY PER 9SEC SURF TEMP 14.45C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	PO/FA
					ML/L SAT ADU	---	---	---	---	---	---	---	---
						MICROGRAM	ATOMS	LITER					
2.0	14.45	30.133	22.37	1.162	6.51	.51	15.40	.07	.31	.33			
13.0	14.52	32.028	23.81	.932	5.69	.51	9.71	.01	.18	.48			
23.0	12.28	32.412	24.55	.675	4.30	1.04	15.50	6.51	.68	1.10			
34.0	8.62	33.098	25.71	.520	3.50	2.14	38.80	24.61	.49	.50			
44.0	8.07	33.361	26.00	.473	3.32	2.19	38.70	26.69	.31	.58			
53.0	8.02	33.582	26.18	.461	3.01	2.21	37.80	26.88	.12	.44			
63.0	7.89	33.748	26.33	.810	2.43	2.39	45.10	28.78	.12	.53			
73.0	7.87	33.760	26.34	1.029	2.34	2.52	46.10	29.32	.18	1.01			
83.0	7.85	33.761	26.34	1.738	2.35	2.54	47.10	29.35	.15	1.07			
89.0	7.85	33.760	26.34	2.019	2.34	2.61	47.10	29.40	.20

-----CRUISE W8009

STATION 145-----

DATE 09 OCT 80 SECCHI 5.0M WIND SPD 10KT BARMETER 1026.5MB CLOUD TYPE:
 TIME 0900(+07) PHOTIC 16.0M DIR 90 AIR DRY 10.6C AMOUNT: 0%
 LAT 47-13.5N SUN AM LY WAVE HGT 3M WET 9.2C WEATHER: CLEAR
 LON 124-29.5W PM LY DIR 270 REL HUMIDITY 84% VISIBILITY: 10-20KM
 DEPTH 61M TOTAL LY PER 10SEC SURF TEMP 13.73C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS.	SIL	NO3	NO2	NH3	CHLA	PHAEO	FC/FA
					ML/L SAT	ADU	---	MICROGRAM-ATOMS/LITER---			---	MG/M3---	
5.5	13.76	30.525	22.81	1.263	6.07								
24.0	10.28	32.769	25.19	.608	4.01

-----CRUISE WR009

STATION 146-----

DATE 09 DEC 80 SECCHI 6.0M WIND SPD OKT BAROMETER 1023.0MB CLOUD TYPE: CIRRUS
 TIME 1312(+07) PHOTIC 26.0M DIR AIR DRY 12.2C AMOUNT: 40%
 LAT 47-20.5N SUN AM LY WAVE HGT 3M WET 10.3C WEATHER: PARTLY CLOUDY
 LON 124-45.9W PM LY DIR 290 REL HUMIDITY 79% VISIBILITY: 20-50KM
 DEPTH 185M TOTAL LY PER 6SEC SURF TEMP 14.30C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT ADU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA	PHAEO	PD/FA
9.0	14.24	32.180	23.97	1.223	8.51	.53	11.80	.00	.16	.50			
25.0	11.93	32.471	24.66	.680	6.00	.75	11.80	3.22	.27	.59			
39.0	8.62	32.697	25.40	.466	5.53	1.26	11.40	10.73	.17	.48			
63.0	8.11	33.087	25.78	.433	4.95	1.64	19.80	18.13	.17	.67			
118.0	7.75	33.765	26.35	.453	2.83	2.33	38.20	28.94	.16	.50			
142.0	7.38	33.901	26.52	.636	2.03	2.70	49.30	32.21	.19	.50			
157.0	7.34	33.913	26.54	.687	1.94	2.71	51.90	33.21	.19	.50			
174.0	7.31	33.919	26.55	.716	1.92	2.73	53.90	32.98	.22	.50			
179.0	7.25	33.926	26.56	.711	1.82		52.50	33.08	.22	.52

-----CRUISE W8009 STATION 147-----

DATE 09 OCT 80 SECCHI M WIND SPD 15KT BARMETER 1016.0MB CLOUD TYPE: CIRRUS
 TIME 1904(+07) PHOTIC 19.0M DIR 15 AIR DRY 13.9C AMOUNT: 90%
 LAT 47-20.6N SUN AM LY WAVE HGT 3M WET 11.7C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-46.0W PM LY DIR 290 REL HUMIDITY 77% VISIBILITY: 10-20KM
 DEPTH 180M TOTAL LY PER 6SEC SURF TEMP 14.33C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED FO/FA
8.0	14.35	32.260	24.02	1.122	6.27	.54				.51		
23.0	10.93	32.539	24.90	.630	6.38	.85				.44		
37.0	9.04	32.637	25.29	.473	5.86	1.17				.43		
61.0	8.12	33.119	25.80	.428	4.56	1.66				.62		
102.0	7.68	33.783	26.39	.445	2.93	2.31				.54		
137.0	7.39	33.896	26.52	.583	2.10	2.63				.48		
156.0	7.31	33.916	26.54	.740	1.93	2.71				.74		
166.0	7.28	33.920	26.55	.946	1.86	2.74				.78		
174.0	7.26	33.926	26.56	.707	1.86	2.70				.61		

-----CRUISE W8009 STATION 147-----

DATE 09 OCT 80 SECCHI M WIND SPD 9KT BARMETER 1015.0MB CLOUD TYPE: CIRRUS
 TIME 2030(+07) PHOTIC 19.0M DIR 25 AIR DRY 13.3C AMOUNT: 70%
 LAT 47-20.2N SUN AM LY WAVE HGT 3M WET 11.7C WEATHER: PARTLY CLOUDY
 LON 124-46.4W PM LY DIR 290 REL HUMIDITY 83% VISIBILITY: 10-20KM
 DEPTH 180M TOTAL LY PER 7SEC SURF TEMP 14.33C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAED FO/FA
1.0	14.33	32.174	23.90	1.114	6.42	.52	8.06	.01	.15	.75		
5.5	14.33	32.176	23.96	1.086	6.33	.52	6.74	.06	.10	.74		
10.5	14.33	32.322	24.07	.855	6.23	.52	4.79	.14	.10	.73		
17.0	14.26	32.349	24.11	.796	6.23	.58	7.67	.30	.11	.78		
22.0	10.96	32.526	24.88	.655	6.41	.81	7.63	2.95	.13	.64		
32.0	9.24	32.621	25.24	.505	6.22	1.07	11.10	7.10	.28	.55		
42.0	8.79	32.671	25.35	.459	5.85	1.20	16.50	9.35	.31	.51		
53.0	8.38	32.620	25.53	.430	5.11	1.42	19.70	13.36	.24	.79		
72.0	7.92	33.296	25.97	.416	4.34	1.81	27.30	20.99	.09	.70		
102.0	7.68	33.779	26.38	.443	3.07	2.31	41.00	20.68	.12	.78

-----CRUISE W8009

STATION 148-----

DATE 10 OCT 80 SECCHI M WIND SPD 5KT BAROMETER 1011.4MB CLOUD TYPE: STRATOCUMULUS
 TIME 0106(+07) PHOTIC 19.0M DIR 50 AIR DRY 13.3C AMOUNT: 20%
 LAT 47-20.9N SUN AM LY WAVE HGT 2M WET 12.2C WEATHER: PARTLY CLOUDY
 LON 124-46.3W PM LY DIR 290 REL HUMIDITY 88% VISIBILITY: 10-20KM
 DEPTH 202M TOTAL 183LY PER 65EC SURF TEMP 14.19C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FD/FA
					ML/L SAT AOU	---MICROGRAM---	---ATOMS/LITER---				---MG/M3---		
8.5	14.00	32.340	24.16	1.009	6.14	.61	8.10	.51	.14	.58			
24.0	11.75	32.459	24.69	.664	5.32	1.32	31.80	10.94	.16	.91			
38.0	8.89	32.699	25.39	.463	5.47	1.31	31.70	10.80	.30	.39			
102.0	7.63	33.810	26.42	.468	2.67	2.43	42.70	29.98	.22	.39			
140.0	7.31	33.918	26.55	.564	1.95	2.71	52.10	33.45	.15	.60			
159.0	7.11	33.951	26.60	.566	2.06	2.72	54.10	34.09	.22	.59			
176.0	7.08	33.956	26.61	.545	2.02	2.73	54.20	34.24	.16	.54			
186.0	7.08	33.954	26.61	.552	1.95	2.73	55.10	34.13	.17	.49			
196.0	7.00	33.962	26.62	.504	2.17	2.64	54.20	33.60	.20	.44

```

-----CRUISE W8009 STATION 149-----
DATE 10 OCT 80 SECCHI 9.0M WIND SPD 20KT BAROMETER 1009.2MB CLOUD TYPE: CIRRUS
TIME 0715(+07) PHOTIC 24.0M DIR 135 AIR DRY 15.0C AMOUNT: 80%
LAT 47-20.2N SUN AM LY WAVE HGT 3M WET 10.6C WEATHER: PARTLY CLOUDY
LON 124-45.2W PM LY DIR 290 REL HUMIDITY 57% VISIBILITY: 10-20KM
DEPTH 167M TOTAL 163LY PER 8SEC SURF TEMP 14.25C TIDE: M

DEPTH TEMP SAL SIG-T ATEN ----OXYGEN---- PHOS SIL NO3 NO2 NH3 CHLA PHAEO PO/FA
M C O/00 /M ML/L SAT ADU ---MICROGRAM-ATOMS/LITER--- ---MG/M3---
11.0 14.25 32.348 24.11 .825 5.75 .54 5.71 .00 .12 .60
23.0 12.63 32.381 24.46 .768 6.04 .55 7.83 .00 .16 .67
30.0 .50 6.43 .00 .14 .43
40.0 8.50 32.801 25.50 .472 5.27 1.57 25.00 16.05 .35 .40
97.0 7.66 33.783 26.39 .492 2.94 2.31 41.80 29.24 .16 .46
128.0 7.38 33.900 26.52 .551 2.37 2.64 51.60 32.88 .22 .64

140.0 7.36 33.904 26.53 .602 2.17 2.64 53.10 32.87 .23 .88
151.0 7.35 33.909 26.53 .606 2.10 2.65 56.30 33.27 .23 .89
160.0 7.27 33.922 26.55 .660 1.96 2.74 54.60 33.16 .24 .88
163.0 7.24 33.928 26.56 .760 1.84 2.74 54.90 33.26 .24 .83

```

CTD CONDUCTIVITY SENSOR PLUGGED WITH MUD DURING UPGAST; USED DOWNCAST DATA

-----CRUISE W8009

STATION 150-----

DATE 10 OCT 80 SECCHI 9.0M WIND SPD 22KT BARMETER 1011.9MB CLOUD TYPE: STRATOCUMULUS
 TIME 1309(+07) PHOTIC 24.0M DIR 170 AIR DRY 14.2C AMOUNT: 90%
 LAT 47-20.3N SUN AM LY WAVE HGT 2M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-45.5W PM LY DIR 290 REL HUMIDITY 91% VISIBILITY: 10-20KM
 DEPTH 195M TOTAL 183LY PER 6SEC SURF TEMP 14.12C TIDE: M

DEPTH M	TEMP C	SAL G/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FG/FA
					ML/L SAT ADU	---	---	---	---	---	---	---	---
9.0	14.12	32.343	24.13	.769	5.74	.53	5.22	.16	.13	.34			
24.0	11.95	32.450	24.64	.659	5.02	1.15	17.30	8.71	.22	.71			
38.0	9.36	32.705	25.29	.492	4.63	1.68	27.20	17.53	.27	.43			
94.0	7.74	33.731	26.34	.448	3.17	2.22	38.70	28.11	.09	.43			
138.0	7.36	33.889	26.52	.440	2.46	2.32	42.70	30.00	.10	.41			
155.0	7.23	33.914	26.55	.607	1.92	2.66	50.60	32.97	.13	.57			
175.0	7.14	33.924	26.57	.640	1.88	2.69	53.40	33.67	.13	.57			
185.0	7.08	33.934	26.59	.679	1.96	2.70	55.10	33.98	.12	.58			
189.0	7.02	33.942	26.60	.604	2.02	2.65	54.80	33.20	.10	.58

-----CRUISE W8009

STATION 150-----

DATE 10 OCT 80 SECCHI 9.5M WIND SPD 20KT BAROMETER 1012.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 1400(+C7) PHOTIC 24.0M DIR 170 AIR DRY 13.9C AMOUNT: 90%
 LAT 47-20.5N SUN AM LY WAVE HGT 2M WET 13.3C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-46.5W PM LY DIR 290 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 223M TOTAL 183LY PER 6SEC SURF TEMP 14.20C TIDE: M

DEPTH M	TEMP C	SAL O/GO	SIG-T	ATTEN /M	----OXYGEN---- ML/L SAT ADU	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO FC/FA
82.0	7.81	33.640	26.26	.460	2.82	2.23	40.90	27.83	.17	.52		
101.0	7.71	33.767	26.37	.502	2.53	2.44	49.30	30.48	.12	.39		
121.0	7.64	33.824	26.42	.449	2.60	2.36	47.00	30.29	.11	.31		
140.0	7.57	33.847	26.45	.455	2.66	2.36	47.20	30.37	.13	.29		
160.0	7.40	33.882	26.50	.435	2.60	2.31	46.60	29.87	.13	.27		
180.0	7.23	33.905	26.55	.576	1.91	2.60	55.00	33.23	.17	.44		
199.0	7.16	33.928	26.57	.633	1.88	2.65	59.30	33.69	.21	.53		
218.0	7.10	33.932	26.59	.657	1.79	2.68	60.90	34.00	.20	.51

-----CRUISE W8009 STATION 151-----

DATE 10 OCT 80 SECCHI M WIND SPD OKT BAROMETER 1015.2MB CLOUD TYPE: STRATOCUMULUS
 TIME 1915(+07) PHOTIC 24.0M AIR DRY 14.8C AMOUNT: 90%
 LAT 47-20.9N SUN AM LY WAVE HGT 2M WET 11.9C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-42.6W PM LY DIR 290 REL HUMIDITY 71% VISIBILITY: 10-20KM
 DEPTH 167M TOTAL 183LY PEP 6SEC SURF TEMP 14.79C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	-----OXYGEN----- ML/L SAT ADJ	PHOS ---MICROGRAM-ATOMS/LITER---	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
10.5	14.39	32.335	24.07	.724	5.52	.54	3.72	.00	.15	.41			
31.0	10.85	32.569	24.93	.564	4.59	1.53	38.00	13.81	.39	1.09			
46.0	9.59	32.915	25.57	.464	3.92	1.91	61.30	21.37	.23	.71			
102.0	7.63	33.771	26.38	.444	3.20	2.30	69.90	28.81	.19	.82			
137.0	7.44	33.867	26.49	.615	2.19	2.63	78.10	32.26	.24	.97			
146.0	7.37	33.887	26.51	.997	2.03	2.68	79.60	32.55	.25	.97			
151.0	7.35	33.891	26.52	1.141	2.02	2.73	79.40	32.64	.26	.90			
155.0	7.35	33.891	26.52	1.107	1.98	2.73	79.20	32.54	.26	.90			
159.0	7.35	33.894	26.52	1.119	1.95	2.70	77.50	32.62	.28	.87

-----CRUISE W8009

STATION 152-----

DATE 11 OCT 80 SECCHI M WIND SPD 8KT BAROMETER 1015.3MB CLOUD TYPE: STRATOCUMULUS
 TIME 0104(+07) PHOTIC 24.0M DIR 190 AIR DRY 13.9C AMOUNT: 30%
 LAT 47-21.3N SUN AM LY WAVE HGT 2M WET 13.3C WEATHER: PARTLY CLOUDY
 LON 124-46.2W PM LY DIR 290 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 181M TOTAL 65LY PEP 6SEC SURF TEMP 13.94C TIDE: M

DEPTH M	TEMP C	SAL U/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FO/FA
					ML/L SAT	AOU	---MICROGRAM---	ATOMS/LITER---			---MG/M3---		
7.0	13.91	32.345	24.18	.768	5.56		.54	10.60	.00	.22	.38		
28.0	10.84	32.509	24.89	.632	5.31		1.01	14.80	5.48	.37	.45		
48.0	8.74	32.869	25.51	.460	3.94		1.93	33.90	21.06	.34	.45		
98.0	7.78	33.716	26.32	.446	3.18		2.29	42.00	28.35	.15	.55		
132.0	7.43	33.875	26.49	.437	2.57		2.43	46.00	30.43	.17	.55		
160.0	7.25	33.910	26.55	.665	2.01		2.68	54.00	33.07	.23	.67		
165.0	7.24	33.911	26.55	.662	2.04		2.62	51.40	33.17	.23	.66		
170.0	7.24	33.911	26.55	.648	2.00		2.61	50.00	33.28	.22	.38		
175.0	7.24	33.910	26.55	.700	1.93		2.66	49.40	33.34	.26	.50

-----CRUISE W8009 STATION 153-----

DATE 11 OCT 80 SECCHI 14.0M WIND SPD 12KT BAROMETER 1014.0MB CLOUD TYPE: STRATOCUMULUS
 TIME 0734(+07) PHOTIC 35.0M DIR 145 AIR DRY 12.2C AMOUNT: 80%
 LAT 47-20.5N SUN AM LY WAVE HGT 2M WET 12.2C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-45.4W PM LY DIR 290 REL HUMIDITY 100% VISIBILITY: 10-20KM
 DEPTH 164M TOTAL 65LY PER 6SEC SURF TEMP 14.85C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN---- ML/L SAT ADU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3	NO2	NH3	CHLA ---MG/M3---	PHAEO FD/FA
9.5	14.63	32.325	24.01	.591	5.69	.50	5.34	.00	.15	.51		
29.0	11.75	32.466	24.69	.635	5.44	.75	7.72	2.31	.34	.68		
48.0	8.82	32.791	25.44	.460	4.17	1.65	25.10	17.75	.35	.58		
82.0	7.91	33.529	26.15	.438	3.64	2.04	33.00	25.53	.17	.58		
118.0	7.63	33.797	26.40	.455	2.42	2.39	41.90	30.01	.19	.55		
138.0	7.48	33.854	26.47	.679	2.10	2.55	46.90	31.77	.23	.65		
148.0	7.46	33.860	26.48	.904	2.11	2.57	47.00	31.75	.25	.64		
154.0	7.46	33.862	26.48	.976	2.14	2.61	46.40	31.96	.24	.72		
159.0	7.46	33.862	26.48	1.013	2.03	2.59	46.10	31.75	.25	.52

-----CRUISE W8009

STATION 154-----

DATE 11 OCT 80 SECCHI 10.0M WIND SPD 8KT BAROMETER 1012.4MB CLOUD TYPE: STRATUS
 TIME 1314(+07) PHOTIC 27.0M DIR 170 AIR DRY 12.8C AMOUNT: 100%
 LAT 47-20.8N SUN AM LY WAVE HGT 1M WET 12.2C WEATHER: DRIZZLE
 LON 124-46.1W PM LY DIR 290 REL HUMIDITY 93% VISIBILITY: 4-10KM
 DEPTH 180M TOTAL 65LY PER 6SEC SURF TEMP 13.99C TIDE: M

DEPTH M	TEMP C	SAL O/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	PO/FA
					ML/L SAT ADU	---	---	---	---	---	---	---	---
						---	---	---	---	---	---	---	---
						---	---	---	---	---	---	---	---
9.0	13.82	32.265	24.13	.804	5.57	.55	8.69	.18	.21	.40			
28.0	11.30	32.480	24.78	.585	5.40	.88	9.61	4.06	.22	.59			
48.0	8.84	32.782	25.43	.468	4.13	1.68	26.30	22.05	.25	.53			
82.0	7.83	33.451	26.10	.435	3.87	2.03	33.40	24.71	.29	.53			
135.0	7.42	33.874	26.50	.749	1.96	2.00	51.90	32.77	.23	.46			
145.0	7.38	33.882	26.51	.804	1.97	2.65	55.80	32.91	.19	.55			
154.0	7.32	33.892	26.52	.770	2.08	2.61	55.40	32.45	.35	.56			
165.0	7.32	33.896	26.53	.669	2.22	2.61	55.90	32.40	.40	.69			
175.0	7.30	33.901	26.53	.624	2.17	2.60	55.50	32.72	.18	.48

-----CRUISE W8009

STATION 155-----

DATE 11 OCT 80 SECCHI 15.0M WIND SPD OKT BAROMETER 1012.1MB CLOUD TYPE: STRATOCUMULUS
 TIME 1545(+07) PHOTIC 32.0M WAVE DIR 12.2C AIR DRY 12.2C AMOUNT: 100%
 LAT 47-06.8N SUN AM LY HGT 1M WET 11.7C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-40.6W PM LY DIR 290 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 106M TOTAL 65LY PER 6SEC SURF TEMP 15.13C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT AUU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3 ---	NO2 ---	NH3 ---	CHLA ---MG/M3---	PHAEO ---	FG/FA ---
6.5	14.74	32.328	23.99	.647	5.61	.51	.00	.13	.66				
17.0	14.01	32.357	24.17	.746	5.55	.58	.33	.19	.91				
28.0	12.26	32.424	24.56	.696	5.62	.73	2.16	.27	.90				
38.0	9.46	32.586	25.18	.518	5.46	1.15	7.66	.42	.84				
48.0	8.55	32.750	25.45	.452	4.99	1.45	13.01	.19	1.05				
58.0	8.35	32.894	25.59	.438	4.47	1.59	15.15	.15	.82				
66.0	8.10	33.125	25.81	.429	4.21	1.82	19.32	.18	.66				
76.0	8.05	33.284	25.94	.433	3.88	2.48	22.72	.18	.85				
85.0	8.00	33.414	26.05	.429	3.68	2.47	23.04	.16	.62				
95.0	7.89	33.570	26.19	.792	3.08	2.37	26.86	.24	.62				

-----CRUISE W8009

STATION 155-----

DATE 11 OCT 80 SECCHI 15.0M WIND SPD OKT BAROMETER 1011.4MB CLOUD TYPE: STRATOCUMULUS
 TIME 1710(+07) PHOTIC 32.0M WAVE DIR 12.2C AIR DRY 12.2C AMOUNT: 100%
 LAT 47-06.8N SUN AM LY HGT 1M WET 11.7C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-40.6W PM LY DIR 290 REL HUMIDITY 94% VISIBILITY: 10-20KM
 DEPTH 106M TOTAL 65LY PER 6SEC SURF TEMP C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	---OXYGEN--- ML/L SAT AUU	PHOS ---MICROGRAM---	SIL ---ATOMS/LITER---	NO3 ---	NO2 ---	NH3 ---	CHLA ---MG/M3---	PHAEO ---	FG/FA ---
6.0	14.99	32.300	23.92	.576	5.60	.52	6.71	.00	.15	.55			
22.0	13.93	32.346	24.17	.774	5.64	.60	9.35	.58	.14	.71			
32.0	10.01	32.558	25.07	.562	5.64	1.03	15.10	5.37	.40	.76			
37.0	8.77	32.676	25.36	.471	5.50	1.22	18.90	9.94	.26	.65			
42.0	8.69	32.691	25.38	.460	5.32	1.33	20.70	11.09	.21	.56			
47.0	8.50	32.785	25.48	.448	5.12	1.43	20.00	12.83	.17	.65			
52.0	8.36	32.855	25.56	.436	4.78	1.53	20.00	14.75	.15	.66			
61.0	8.10	33.124	25.81	.429	4.26	1.79	27.50	19.46	.14	.57			
70.0	8.09	33.180	25.85	.432	3.98	1.96	31.10	22.06	.14	.66			
90.0	7.84	33.612	26.23	1.203	3.10	2.47	44.80	28.42	.18				

-----CRUISE W8009

STATION 156-----

DATE 12 OCT 80	SECCHI 4.0M	WIND SPD 8KT	BAROMETER 1005.2MB	CLOUD TYPE: STRATOCUMULUS
TIME 0820(+07)	PHOTIC 10.5M	DIR 220	AIR DRY 11.7C	AMOUNT: 100%
LAT 47-07.1N	SUN AM	WAVE HGT 1M	WET 11.1C	WEATHER: UNBROKEN CLOUD LAYER
LOX 124-17.0W	PM	DIR 290	REL HUMIDITY 93%	VISIBILITY: 10-20KM
DEPTH 33M	TOTAL 178LY	PER 6SEC	SURF TEMP 13.36C	TIDE: .8M EBB

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

W8009 D156

THIS PAGE
WAS INTENTIONALLY
LEFT BLANK

-----CRUISE W8009

STATION 157-----

DATE 12 OCT 80 SECCHI 7.0M WIND SPD 12KT BARMETER 1005.8MB CLOUD TYPE: STRATUS
 TIME 1011(+07) PHOTIC 16.0M DIR 260 AIR DRY 12.2C AMOUNT: 100%
 LAT 47-07.1N SUN AM LY WAVE HGT 2M WET 11.1C WEATHER: RAIN
 LON 124-29.0W PM LY DIR 290 REL HUMIDITY 85% VISIBILITY: 10-20KM
 DEPTH 66M TOTAL 178LY PER 6SEC SURF TEMP 13.65C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	----OXYGEN----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAED	FO/FA
					ML/L SAT	AOU	---MICROGRAM-ATOMS/LITER---				---MG/M3---		
58.0	7.97	33.471	26.10	1.908	2.53								

-----CRUISE W8009

STATION 158-----

DATE 13 OCT 80 SECCHI 7.0M WIND SPD 15KT BARMETER 1009.5MB CLOUD TYPE: CUMULONIMBUS
 TIME 0840(+07) PHOTIC 15.0M DIR 100 AIR DRY 10.3C AMOUNT: 90%
 LAT 47-07.2N SUN AM LY WAVE HGT 2M WET 9.6C WEATHER: UNBROKEN CLOUD LAYER
 LON 124-17.0W PM LY DIR 290 REL HUMIDITY 92% VISIBILITY: 10-20KM
 DEPTH 33M TOTAL 94LY PER 6SEC SURF TEMP 13.45C TIDE: 1.0M EBB

NO STANDARD BOTTLE CAST WAS DONE AT THIS STATION.

T = Temperature - C
 S = Salinity - g/kg
 D = Sigma-t

X = Oxygen - ml/l
 A = Attenuation - 1/m
 R = Irradiance - log10(watts/m²)

Deep CTD Casts

At stations located beyond the continental shelf break, the water depth exceeded 200 m. The CTD was routinely lowered close to the bottom. At some stations deep water samples were collected; at others only the upper 200 m were sampled. The previous section of this report showed the vertical profiles from CTD data for the upper 200 m together with all data obtained from discrete sampling. This section of the report contains the entire CTD profiles for the deeper stations.

Interpolated and Computed Values

Data collected with the CTD (depth, temperature, salinity, beam attenuation coefficient, dissolved oxygen, and irradiance) were interpolated at standard depths for each CTD cast using a locally developed computer program. Linear interpolations were done for each variable; generally, data scans were available within 1 m above and below the standard depths for use in the interpolations. Interpolated values were then used to compute sigma-t and dynamic height for each standard depth (cf. Fofonoff, 1962).

In addition to the standard depths, data are presented for the terminal depth for each CTD cast. The missing data indicator in these tables is "=88.0".

INTERPOLATED AND COMPUTED VALUES

CRUISE	W8009	LAT	44-55.3N	DATE	24/ 9/80		
STATION	991	LOX	124-23.5W	TIME	1656(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	11.78	32.340	24.59	0.000	1.190	6.32	0.21
10.	11.53	32.354	24.65	0.033	0.871	6.39	-0.66
20.	9.12	32.700	25.32	0.063	0.657	6.78	-0.96
30.	8.95	32.858	25.49	0.089	0.496	5.93	-1.36
40.	8.47	33.065	25.71	0.114	0.468	5.13	-1.74
50.	8.41	33.391	25.97	0.135	0.445	4.21	-2.15
60.	8.46	33.517	26.06	0.156	0.436	3.80	-2.44
70.	8.48	33.529	26.12	0.175	0.435	3.73	-2.74
80.	8.44	33.652	26.17	0.194	0.434	3.66	-2.99
90.	8.38	33.747	26.25	0.212	0.436	3.56	-3.26
100.	8.25	33.790	26.31	0.230	0.437	3.46	-3.50
125.	7.82	33.893	26.45	0.272	0.472	2.74	-4.13
145.	7.56	33.993	26.50	0.304	0.702	1.55	-88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE	W8009	LAT	44-55.3N	DATE	24/ 9/80		
STATION	992	LOX	124-23.6W	TIME	1758(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	12.13	32.388	24.56	0.000	0.961	6.14	-88.0
10.	12.10	32.386	24.56	0.034	0.953	6.19	-88.0
20.	11.22	32.469	24.79	0.067	0.821	6.32	-88.0
30.	8.96	32.680	25.33	0.096	0.553	6.33	-88.0
40.	8.80	32.882	25.51	0.122	0.497	5.67	-88.0
50.	8.38	33.151	25.79	0.146	0.465	4.85	-88.0
60.	8.45	33.394	25.97	0.167	0.447	4.09	-88.0
70.	8.41	33.544	26.09	0.187	0.437	3.86	-88.0
80.	8.43	33.633	26.16	0.207	0.436	3.77	-88.0
90.	8.39	33.733	26.24	0.225	0.438	3.68	-88.0
100.	8.34	33.812	26.31	0.243	0.442	3.49	-88.0
125.	8.03	33.890	26.41	0.285	0.455	3.05	-88.0
150.	7.62	33.915	26.50	0.326	0.582	2.10	-88.0
175.	7.55	33.945	26.53	0.365	0.795	1.58	-88.0
188.	7.54	33.960	26.55	0.384	0.856	2.00	-88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 993	LAT LOX	46-29.0N 124-53.7W	DATE TIME	25/ 9/80 318(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.50	32.314	23.82	0.000	0.553	5.38	-88.0
10.	15.50	32.315	23.82	0.041	0.534	5.34	-88.0
20.	15.51	32.319	23.82	0.082	0.530	5.33	-88.0
30.	14.20	32.410	24.17	0.122	0.590	5.57	-88.0
40.	11.09	32.565	24.89	0.156	0.681	6.33	-88.0
50.	9.56	32.580	25.16	0.186	0.514	6.24	-88.0
60.	8.93	32.602	25.28	0.214	0.476	6.11	-88.0
70.	8.42	32.623	25.37	0.241	0.451	5.96	-88.0
80.	8.19	32.682	25.45	0.267	0.438	5.78	-88.0
90.	8.02	32.818	25.58	0.292	0.432	5.69	-88.0
100.	7.93	33.135	25.84	0.315	0.426	5.19	-88.0
125.	7.94	33.542	26.16	0.366	0.424	4.39	-88.0
150.	7.59	33.752	26.38	0.411	0.426	3.95	-88.0
175.	7.27	33.856	26.50	0.452	0.424	3.73	-88.0
200.	7.17	33.931	26.57	0.490	0.423	3.27	-88.0
250.	6.61	33.964	26.68	0.563	0.422	2.91	-88.0
300.	6.19	33.982	26.75	0.632	0.417	2.68	-88.0
350.	5.84	34.097	26.81	0.699	0.414	2.25	-88.0
400.	5.49	34.047	26.88	0.762	0.412	1.79	-88.0
450.	5.32	34.076	26.93	0.822	0.411	1.40	-88.0
500.	5.05	34.110	26.99	0.881	0.410	1.13	-88.0
600.	4.65	34.181	27.09	0.990	0.406	0.77	-88.0
700.	4.34	34.268	27.19	1.091	0.447	0.59	-88.0
800.	4.02	34.328	27.27	1.183	0.452	0.50	-88.0
900.	3.73	34.383	27.35	1.268	0.452	0.51	-88.0
1000.	3.52	34.418	27.39	1.348	0.432	0.52	-88.0
1100.	3.33	34.447	27.44	1.423	0.436	0.58	-88.0
1200.	3.10	34.479	27.48	1.495	0.432	0.68	-88.0
1300.	2.84	34.509	27.53	1.563	0.443	0.83	-88.0
1400.	2.64	34.533	27.57	1.626	0.467	0.99	-88.0
1489.	2.46	34.554	27.60	1.679	0.465	1.14	-88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE	W8009	LAT	46-38.4N	DATE	25/ 9/80		
STATION	994	LOX	125-11.9W	TIME	626(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μW/CM2)
0.	15.21	32.287	23.86	0.000	2.068	5.67	=88.0
10.	15.21	32.288	23.86	0.041	0.861	5.61	=88.0
20.	15.15	32.288	23.87	0.081	0.650	5.61	=88.0
30.	10.93	32.495	24.86	0.117	0.671	6.28	=88.0
40.	9.45	32.564	25.16	0.147	0.604	6.06	=88.0
50.	8.89	32.635	25.31	0.175	0.524	5.96	=88.0
60.	8.51	32.731	25.44	0.201	0.467	5.81	=88.0
70.	8.16	32.804	25.55	0.226	0.450	5.68	=88.0
80.	8.22	33.095	25.77	0.250	0.449	5.22	=88.0
90.	8.18	33.276	25.92	0.272	0.466	4.68	=88.0
100.	7.88	33.374	26.04	0.293	0.442	4.62	=88.0
125.	7.39	33.695	26.36	0.339	0.435	4.32	=88.0
150.	7.35	33.821	26.46	0.380	0.436	3.99	=88.0
175.	7.21	33.907	26.55	0.419	0.432	3.55	=88.0
200.	7.00	33.940	26.61	0.457	0.429	3.35	=88.0
250.	6.38	33.980	26.72	0.528	0.425	2.65	=88.0
300.	5.96	34.009	26.80	0.595	0.426	2.05	=88.0
350.	5.55	34.023	26.86	0.659	0.420	1.76	=88.0
400.	5.30	34.057	26.92	0.720	0.413	1.44	=88.0
450.	5.07	34.101	26.98	0.779	0.414	1.09	=88.0
500.	4.88	34.139	27.03	0.835	0.413	0.86	=88.0
600.	4.60	34.201	27.11	0.941	0.418	0.64	=88.0
700.	4.25	34.277	27.21	1.040	0.413	0.48	=88.0
800.	4.03	34.331	27.27	1.131	0.413	0.43	=88.0
900.	3.81	34.371	27.33	1.217	0.422	0.44	=88.0
1000.	3.54	34.410	27.39	1.298	0.420	0.49	=88.0
1100.	3.29	34.450	27.44	1.374	0.419	0.58	=88.0
1200.	3.12	34.475	27.48	1.446	0.429	0.68	=88.0
1214.	3.06	34.482	27.49	1.456	0.436	0.70	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 995	LAT LOX	47-18.2N 124-45.0W	DATE TIME	25/ 9/80 1905(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HIT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μW/CM2)
0.	13.84	32.181	24.07	0.000	2.192	6.65	-0.68
10.	11.98	32.336	24.55	0.036	1.618	6.97	-2.25
20.	9.18	32.603	25.24	0.067	0.562	6.33	-2.94
30.	8.48	32.774	25.48	0.094	0.476	5.68	-3.35
40.	8.23	33.024	25.71	0.118	0.471	5.24	-3.65
50.	8.03	33.255	25.92	0.140	0.472	4.68	-3.92
60.	7.79	33.459	26.12	0.160	0.452	4.37	-4.18
70.	7.77	33.685	26.30	0.179	0.467	3.93	=88.0
80.	7.61	33.803	26.41	0.196	0.519	3.12	=88.0
90.	7.46	33.854	26.48	0.212	0.648	2.58	=88.0
100.	7.41	33.878	26.50	0.227	0.760	2.14	=88.0
125.	7.23	33.918	26.56	0.266	0.826	1.78	=88.0
150.	7.19	33.927	26.57	0.304	0.752	1.71	=88.0
175.	7.13	33.938	26.59	0.341	0.639	1.66	=88.0
200.	7.03	33.947	26.60	0.378	0.679	1.60	=88.0
203.	7.07	33.949	26.60	0.383	0.703	1.58	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009	LAT	47-21.4N	DATE	25/ 9/80		
STATION		001	LON	124-30.9W	TIME	2310(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE	
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)	
0.	14.51	30.980	23.00	0.000	1.530	5.77	-2.87	
10.	13.61	31.675	23.72	0.046	0.969	5.59	-3.94	
20.	11.39	32.576	24.84	0.082	0.850	5.24	=88.0	
30.	7.93	33.518	26.14	0.107	0.866	3.73	=88.0	
39.	7.88	33.543	26.17	0.124	0.931	3.26	=88.0	

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009	LAT	47-26.0N	DATE	25/ 9/80		
STATION		002	LON	124-36.3W	TIME	2356(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE	
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)	
0.	14.06	31.829	23.75	0.000	1.603	5.71	-3.19	
10.	11.92	32.585	24.75	0.037	1.179	5.70	=88.0	
20.	9.65	33.083	25.54	0.065	0.563	4.51	=88.0	
30.	8.42	33.322	25.92	0.088	0.528	3.82	=88.0	
40.	7.89	33.538	26.16	0.108	0.495	3.48	=88.0	
50.	7.76	33.599	26.23	0.127	0.651	2.68	=88.0	
60.	7.66	33.674	26.30	0.145	0.696	2.33	=88.0	
70.	7.55	33.766	26.39	0.162	0.734	1.48	=88.0	
72.	7.55	33.767	26.39	0.166	0.737	1.41	=88.0	

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009	LAT	47-24.8N	DATE	26/ 9/80		
STATION		003	LON	124-41.7W	TIME	41(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE	
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)	
0.	14.40	31.688	23.57	0.000	1.510	5.58	-2.82	
10.	12.39	32.237	24.39	0.040	1.333	6.05	=88.0	
20.	9.19	32.716	25.32	0.071	0.553	5.54	=88.0	
30.	8.27	33.209	25.85	0.095	0.499	4.61	=88.0	
40.	7.92	33.478	26.11	0.116	0.476	4.00	=88.0	
50.	7.89	33.572	26.19	0.134	0.479	3.59	=88.0	
60.	7.84	33.708	26.31	0.152	0.464	3.47	=88.0	
70.	7.53	33.790	26.41	0.169	0.565	2.69	=88.0	
80.	7.46	33.843	26.46	0.185	0.676	1.76	=88.0	
90.	7.46	33.857	26.48	0.201	0.820	1.59	=88.0	
100.	7.44	33.869	26.49	0.217	0.948	1.39	=88.0	
106.	7.43	33.876	26.50	0.227	1.033	1.39	=88.0	

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009	LAT	47-24.1N	DATE	26/ 9/80		
STATION		004	LON	124-44.4W	TIME	115(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE	
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)	
0.	12.55	32.285	24.40	0.000	1.453	6.14	-2.71	
10.	11.74	32.352	24.61	0.035	0.962	6.16	-4.09	
20.	9.02	32.627	25.28	0.065	0.542	5.75	=88.0	
30.	8.55	32.762	25.46	0.091	0.477	5.60	=88.0	
40.	8.36	32.944	25.63	0.116	0.476	5.18	=88.0	
50.	8.21	33.138	25.80	0.139	0.485	4.76	=88.0	
60.	7.98	33.321	25.98	0.160	0.474	4.47	=88.0	
70.	7.79	33.653	26.27	0.180	0.458	4.10	=88.0	
80.	7.70	33.764	26.37	0.197	0.480	3.67	=88.0	
90.	7.47	33.866	26.48	0.213	0.722	2.77	=88.0	
100.	7.40	33.886	26.51	0.229	0.792	2.47	=88.0	
125.	7.03	33.953	26.61	0.267	0.866	2.06	=88.0	
126.	7.03	33.955	26.61	0.268	0.865	2.02	=88.0	

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009	LAT	47-23.7N	DATE	26/ 9/80		
STATION		005	LON	124-45.9W	TIME	139(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE	
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)	
0.	12.41	32.321	24.46	0.000	1.234	5.74	-2.21	
10.	11.72	32.492	24.72	0.034	0.992	5.93	-4.04	
20.	9.36	32.593	25.20	0.064	0.562	5.50	=88.0	
30.	8.54	32.729	25.43	0.091	0.476	5.33	=88.0	
40.	8.41	32.818	25.52	0.116	0.464	5.23	=88.0	
50.	8.20	33.101	25.78	0.140	0.473	4.70	=88.0	
60.	8.01	33.275	25.94	0.162	0.466	4.26	=88.0	
70.	7.86	33.474	26.12	0.182	0.452	4.05	=88.0	
80.	7.76	33.634	26.26	0.200	0.445	3.84	=88.0	
90.	7.61	33.794	26.41	0.217	0.512	3.16	=88.0	
100.	7.45	33.866	26.48	0.234	0.653	2.55	=88.0	
125.	7.20	33.926	26.57	0.272	0.782	1.93	=88.0	
143.	6.98	33.962	26.63	0.299	0.913	1.76	=88.0	

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-23.5N DATE 26/ 9/80
STATION 006 LON 124-48.0W TIME 207(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	12.44	32.283	24.42	0.000	1.047	5.94	-2.57
10.	11.98	32.293	24.51	0.035	0.867	6.01	-3.81
20.	11.07	32.398	24.76	0.068	0.713	5.89	=88.0
30.	9.50	32.541	25.14	0.099	0.559	5.73	=88.0
40.	8.48	32.763	25.47	0.126	0.460	5.49	=88.0
50.	8.15	33.108	25.79	0.149	0.460	4.90	=88.0
60.	7.99	33.296	25.96	0.171	0.456	4.52	=88.0
70.	7.81	33.486	26.14	0.191	0.446	4.34	=88.0
80.	7.85	33.655	26.26	0.209	0.442	4.10	=88.0
90.	7.76	33.733	26.34	0.227	0.464	3.75	=88.0
100.	7.48	33.851	26.47	0.244	0.579	3.16	=88.0
125.	7.30	33.910	26.54	0.283	0.741	2.31	=88.0
150.	7.14	33.940	26.59	0.320	0.657	2.07	=88.0
175.	7.08	33.950	26.60	0.357	0.613	1.91	=88.0
200.	7.05	33.956	26.61	0.394	0.608	1.81	=88.0
250.	6.98	33.965	26.63	0.468	0.719	1.75	=88.0
300.	6.71	33.990	26.68	0.540	0.689	1.81	=88.0
350.	6.27	34.019	26.77	0.609	0.606	1.80	=88.0
400.	6.11	34.034	26.80	0.675	0.710	1.65	=88.0
420.	5.97	34.041	26.82	0.701	0.656	1.50	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-23.2N DATE 26/ 9/80
STATION 007 LON 124-48.3W TIME 256(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	12.35	32.299	24.45	0.000	1.216	5.84	-3.05
10.	12.25	32.349	24.51	0.035	1.104	5.94	-4.06
20.	12.08	32.305	24.51	0.069	1.024	6.03	=88.0
30.	9.07	32.642	25.28	0.100	0.648	5.66	=88.0
40.	8.38	32.811	25.52	0.126	0.557	5.45	=88.0
50.	8.25	32.816	25.55	0.151	0.538	5.20	=88.0
60.	8.17	32.825	25.56	0.176	0.518	4.82	=88.0
70.	8.01	33.247	25.92	0.199	0.494	4.52	=88.0
80.	7.81	33.425	26.09	0.219	0.471	4.32	=88.0
90.	7.82	33.618	26.24	0.238	0.455	4.11	=88.0
100.	7.80	33.697	26.30	0.256	0.457	3.67	=88.0
125.	7.28	33.904	26.54	0.297	0.539	2.57	=88.0
150.	7.12	33.938	26.59	0.334	0.620	2.02	=88.0
175.	7.09	33.943	26.60	0.372	0.629	1.83	=88.0
200.	7.05	33.951	26.61	0.409	0.594	1.77	=88.0
250.	6.95	33.966	26.63	0.482	0.562	1.80	=88.0
300.	6.87	33.971	26.65	0.555	0.560	1.83	=88.0
350.	6.41	34.000	26.73	0.625	0.528	1.91	=88.0
400.	5.97	34.035	26.82	0.692	0.541	1.66	=88.0
450.	5.73	34.055	26.86	0.756	0.531	1.43	=88.0
500.	5.13	34.116	26.98	0.816	0.542	1.11	=88.0
600.	4.62	34.195	27.10	0.926	0.522	0.65	=88.0
700.	4.15	34.283	27.22	1.024	0.547	0.48	=88.0
783.	4.05	34.303	27.25	1.099	0.558	0.46	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-22.4N DATE 26/ 9/80
STATION 008 LON 124-49.5W TIME 350(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	12.51	32.278	24.40	0.000	0.984	5.91	-3.09
10.	12.47	32.290	24.42	0.035	0.947	6.05	-4.00
20.	9.70	32.541	25.10	0.068	0.583	6.00	=88.0
30.	8.76	32.655	25.34	0.095	0.477	5.74	=88.0
40.	8.40	32.792	25.51	0.121	0.449	5.66	=88.0
50.	8.31	32.885	25.59	0.146	0.442	5.41	=88.0
60.	8.16	33.086	25.77	0.169	0.444	4.98	=88.0
70.	7.99	33.204	25.89	0.191	0.443	4.66	=88.0
80.	7.83	33.378	26.05	0.212	0.443	4.53	=88.0
90.	7.74	33.467	26.13	0.231	0.435	4.40	=88.0
100.	7.81	33.553	26.19	0.250	0.434	4.15	=88.0
125.	7.33	33.893	26.52	0.293	0.504	2.82	=88.0
150.	7.10	33.942	26.59	0.331	0.624	2.06	=88.0
175.	7.05	33.952	26.61	0.368	0.586	1.87	=88.0
200.	6.99	33.961	26.62	0.404	0.576	1.82	=88.0
250.	6.94	33.967	26.64	0.477	0.567	1.79	=88.0
300.	6.75	33.989	26.68	0.549	0.532	1.93	=88.0
350.	6.46	34.010	26.73	0.619	0.486	2.04	=88.0
400.	5.97	34.042	26.82	0.686	0.464	1.74	=88.0
450.	5.49	34.035	26.88	0.750	0.434	1.53	=88.0
500.	5.22	34.064	26.93	0.810	0.437	1.26	=88.0
600.	4.62	34.166	27.10	0.921	0.486	0.67	=88.0
700.	4.28	34.261	27.19	1.021	0.507	0.52	=88.0
800.	3.99	34.317	27.27	1.113	0.490	0.46	=88.0
889.	3.77	34.356	27.32	1.190	0.488	0.46	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-22.0N DATE 26/ 9/80
STATION 009 LON 124-51.1W TIME 445(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	12.74	32.258	24.34	0.000	0.947	5.98	-3.32
10.	12.17	32.300	24.49	0.035	0.880	6.10	=88.0
20.	9.61	32.567	25.14	0.067	0.544	5.97	=88.0
30.	8.98	32.610	25.27	0.095	0.494	5.99	=88.0
40.	8.70	32.642	25.34	0.122	0.475	5.87	=88.0
50.	8.34	32.872	25.58	0.147	0.445	5.61	=88.0
60.	8.21	33.029	25.72	0.171	0.444	4.93	=88.0
70.	8.04	33.186	25.87	0.193	0.446	4.62	=88.0
80.	7.93	33.366	26.04	0.214	0.445	4.35	=88.0
90.	7.80	33.553	26.19	0.234	0.429	4.20	=88.0
100.	7.82	33.646	26.26	0.252	0.443	3.71	=88.0
125.	7.54	33.841	26.45	0.295	0.476	2.88	=88.0
150.	7.14	33.937	26.58	0.333	0.648	1.79	=88.0
175.	7.09	33.946	26.60	0.371	0.620	1.66	=88.0
200.	7.02	33.959	26.62	0.407	0.582	1.68	=88.0
250.	6.92	33.973	26.64	0.480	0.562	1.72	=88.0
300.	6.78	33.987	26.67	0.552	0.551	1.78	=88.0
350.	6.50	34.012	26.73	0.623	0.498	2.01	=88.0
400.	6.18	34.028	26.78	0.690	0.464	1.87	=88.0
450.	5.71	34.066	26.87	0.755	0.459	1.43	=88.0
500.	5.15	34.063	26.94	0.816	0.418	1.24	=88.0
600.	4.79	34.166	27.06	0.929	0.468	0.74	=88.0
700.	4.29	34.259	27.19	1.031	0.451	0.51	=88.0
800.	4.01	34.317	27.26	1.123	0.454	0.47	=88.0
900.	3.75	34.362	27.33	1.210	0.458	0.46	=88.0
1000.	3.49	34.405	27.39	1.291	0.478	0.49	=88.0
1098.	3.30	34.437	27.43	1.365	0.510	0.53	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	WS009 010	LAT LON	47-22.5N 124-54.6W	DATE 26/ 9/80 TIME 605(+7)			
DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	13.37	32.255	24.22	0.000	0.928	6.05	-3.11
10.	13.07	32.289	24.30	0.037	0.876	6.07	-4.07
20.	12.49	32.395	24.50	0.073	0.778	6.14	=88.0
30.	9.61	32.589	25.16	0.104	0.570	6.43	=88.0
40.	8.94	32.615	25.28	0.132	0.496	6.38	=88.0
50.	8.57	32.623	25.35	0.159	0.460	6.21	=88.0
60.	8.34	32.701	25.44	0.185	0.434	6.02	=88.0
70.	8.23	32.891	25.61	0.210	0.432	5.75	=88.0
80.	7.99	33.190	25.88	0.233	0.438	5.02	=88.0
90.	7.86	33.484	26.13	0.253	0.427	4.63	=88.0
100.	7.87	33.702	26.29	0.271	0.443	3.82	=88.0
125.	7.32	33.898	26.53	0.313	0.548	2.58	=88.0
150.	7.25	33.915	26.55	0.351	0.577	2.03	=88.0
175.	7.10	33.946	26.60	0.388	0.609	1.78	=88.0
200.	7.02	33.959	26.62	0.425	0.583	1.67	=88.0
250.	6.92	33.973	26.64	0.498	0.581	1.62	=88.0
300.	6.80	33.985	26.67	0.570	0.555	1.76	=88.0
350.	6.25	34.023	26.77	0.640	0.466	1.96	=88.0
400.	6.00	34.041	26.82	0.705	0.492	1.65	=88.0
450.	5.58	34.055	26.88	0.769	0.443	1.44	=88.0
500.	5.29	34.090	26.94	0.830	0.437	1.20	=88.0
600.	4.74	34.158	27.06	0.943	0.413	0.73	=88.0
700.	4.36	34.247	27.17	1.046	0.444	0.51	=88.0
800.	4.04	34.309	27.25	1.139	0.446	0.46	=88.0
900.	3.69	34.374	27.34	1.225	0.447	0.46	=88.0
1000.	3.43	34.415	27.40	1.305	0.464	0.49	=88.0
1100.	3.21	34.449	27.45	1.380	0.503	0.57	=88.0
1200.	2.97	34.484	27.50	1.450	0.505	0.69	=88.0
1254.	2.84	34.502	27.52	1.486	0.501	0.77	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	WS009 011	LAT LON	47-22.2N 124-59.4W	DATE 26/ 9/80 TIME 728(+7)			
DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	14.35	32.315	24.06	0.000	0.656	5.93	-0.92
10.	14.05	32.313	24.13	0.039	0.697	5.94	-1.42
20.	13.60	32.348	24.24	0.076	0.686	6.05	-2.03
30.	10.52	32.575	25.00	0.110	0.653	6.67	-2.59
40.	9.48	32.585	25.17	0.139	0.535	6.61	-3.01
50.	8.98	32.612	25.27	0.167	0.487	6.47	-3.35
60.	8.59	32.637	25.35	0.193	0.450	6.31	-3.61
70.	8.46	32.693	25.42	0.220	0.435	6.06	-3.82
80.	8.38	32.778	25.50	0.245	0.433	5.90	-4.01
90.	8.20	32.933	25.64	0.270	0.438	5.62	-4.17
100.	8.12	33.166	25.84	0.293	0.427	5.17	=88.0
125.	7.93	33.694	26.28	0.342	0.433	4.08	=88.0
150.	7.74	33.834	26.42	0.385	0.427	3.49	=88.0
175.	7.47	33.903	26.51	0.425	0.439	2.94	=88.0
200.	7.20	33.950	26.59	0.464	0.446	2.76	=88.0
250.	6.75	33.993	26.68	0.536	0.447	2.47	=88.0
300.	6.47	34.013	26.73	0.606	0.496	2.06	=88.0
350.	6.13	34.018	26.78	0.673	0.439	2.01	=88.0
400.	5.65	34.031	26.85	0.738	0.420	1.75	=88.0
450.	5.40	34.056	26.90	0.800	0.415	1.39	=88.0
500.	5.06	34.090	26.97	0.859	0.409	1.14	=88.0
600.	4.66	34.179	27.09	0.970	0.412	0.68	=88.0
700.	4.30	34.261	27.19	1.070	0.431	0.50	=88.0
800.	4.02	34.316	27.26	1.163	0.433	0.46	=88.0
900.	3.74	34.365	27.33	1.249	0.444	0.46	=88.0
1000.	3.47	34.413	27.39	1.330	0.445	0.49	=88.0
1100.	3.23	34.452	27.45	1.404	0.446	0.58	=88.0
1200.	3.10	34.471	27.48	1.476	0.450	0.64	=88.0
1300.	2.83	34.506	27.53	1.543	0.491	0.77	=88.0
1368.	2.69	34.527	27.56	1.586	0.517	0.89	=88.0

INTERPOLATED AND COMPUTED VALUES							
CRUISE	W8009	LAT	47-21.0N	DATE	26/ 9/80		
STATION	012	LON	125-05.0W	TIME	855(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	15.10	32.301	23.89	0.000	0.587	5.75	0.26
10.	15.08	32.300	23.90	0.040	0.584	5.56	-0.39
20.	15.04	32.299	23.91	0.081	0.588	5.62	-0.78
30.	11.88	32.580	24.75	0.117	0.719	6.43	-1.18
40.	10.74	32.610	24.98	0.148	0.728	6.79	-1.77
50.	9.65	32.623	25.18	0.177	0.537	6.60	-2.26
60.	8.80	32.623	25.31	0.205	0.461	6.44	-2.56
70.	8.36	32.732	25.46	0.231	0.436	6.12	-2.79
80.	8.26	32.872	25.59	0.256	0.430	5.68	-3.01
90.	8.19	33.034	25.73	0.280	0.429	5.45	-3.21
100.	8.15	33.258	25.91	0.302	0.430	4.89	-3.45
125.	7.97	33.568	26.18	0.352	0.430	4.17	-4.00
150.	7.82	33.755	26.34	0.397	0.429	3.65	=88.0
175.	7.58	33.867	26.47	0.439	0.429	3.26	=88.0
200.	7.37	33.927	26.54	0.478	0.437	2.90	=88.0
250.	6.82	33.978	26.66	0.552	0.424	2.72	=88.0
300.	6.31	33.993	26.74	0.622	0.428	2.36	=88.0
350.	5.84	34.006	26.81	0.689	0.418	2.07	=88.0
400.	5.61	34.036	26.86	0.752	0.411	1.66	=88.0
450.	5.31	34.088	26.94	0.813	0.420	1.23	=88.0
500.	4.99	34.112	26.99	0.871	0.407	0.99	=88.0
600.	4.55	34.162	27.08	0.980	0.407	0.72	=88.0
700.	4.25	34.223	27.16	1.082	0.405	0.57	=88.0
800.	4.05	34.315	27.26	1.176	0.425	0.45	=88.0
900.	3.69	34.376	27.34	1.262	0.438	0.45	=88.0
1000.	3.44	34.420	27.40	1.341	0.438	0.50	=88.0
1100.	3.24	34.449	27.45	1.416	0.445	0.57	=88.0
1200.	3.06	34.479	27.49	1.487	0.454	0.65	=88.0
1300.	2.87	34.503	27.52	1.554	0.463	0.77	=88.0
1400.	2.67	34.530	27.56	1.618	0.471	0.91	=88.0
1500.	2.52	34.548	27.59	1.679	0.473	1.04	=88.0
1548.	2.41	34.561	27.61	1.707	0.487	1.14	=88.0

INTERPLATED AND COMPUTED VALUES							
CRUISE	W8009	LAT	47-16.3N	DATE	26/ 9/80		
STATION	013	LON	124-47.2W	TIME	1703(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	12.25	32.306	24.47	0.000	1.118	6.48	0.45
10.	12.23	32.306	24.48	0.035	1.090	6.34	-0.57
20.	10.91	32.513	25.03	0.067	0.621	6.09	-1.39
30.	8.84	32.645	25.32	0.095	0.519	5.74	-1.86
40.	8.47	32.823	25.52	0.121	0.487	5.68	-2.26
50.	8.22	33.039	25.72	0.145	0.471	4.72	-2.59
60.	8.03	33.276	25.94	0.167	0.463	4.48	-2.87
70.	7.84	33.427	26.08	0.187	0.459	4.03	-3.16
80.	7.82	33.551	26.18	0.206	0.439	4.15	-3.39
90.	7.83	33.606	26.23	0.225	0.449	3.58	-3.61
100.	7.78	33.661	26.28	0.243	0.463	3.22	-3.84
125.	7.37	33.893	26.52	0.284	0.554	2.11	=88.0
150.	7.16	33.932	26.58	0.323	0.882	1.62	=88.0
157.	7.15	33.937	26.58	0.332	0.959	1.58	=88.0

INTERPOLATED AND COMPUTED VALUES							
CRUISE	W8009	LAT	47-17.7N	DATE	26/ 9/80		
STATION	014A	LON	124-44.5W	TIME	1832(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	12.26	32.320	24.48	0.000	=88.0	6.39	0.51
10.	11.80	32.352	24.59	0.034	1.048	6.42	-1.01
20.	9.44	32.617	25.21	0.065	0.564	5.87	-1.74
30.	8.82	32.861	25.49	0.092	0.512	5.41	-2.27
40.	8.43	33.063	25.71	0.116	0.507	4.58	-2.70
50.	8.15	33.147	25.82	0.138	0.472	4.43	-3.06
60.	7.98	33.373	26.02	0.159	0.473	4.03	-3.39
70.	7.95	33.517	26.14	0.179	0.461	3.86	-3.69
80.	7.94	33.608	26.21	0.198	0.453	3.75	-3.94
90.	7.67	33.749	26.36	0.215	0.499	3.10	-4.17
100.	7.60	33.814	26.42	0.232	0.576	2.41	=88.0
125.	7.47	33.870	26.49	0.272	0.751	1.66	=88.0
150.	7.25	33.917	26.55	0.311	1.117	1.53	=88.0
158.	7.25	33.917	26.55	0.323	1.128	1.50	=88.0

INTERPOLATED AND COMPUTED VALUES							
CRUISE	W8009	LAT	47-19.5N	DATE	26/ 9/80		
STATION	015	LON	124-44.9W	TIME	1939(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	12.36	32.303	24.45	0.000	0.998	6.21	-2.80
10.	12.32	32.334	24.48	0.025	1.012	6.21	-3.83
20.	9.19	32.621	25.25	0.066	0.549	5.77	=88.0
30.	8.59	32.727	25.43	0.093	0.484	5.56	=88.0
40.	8.50	33.060	25.70	0.117	0.500	5.25	=88.0
50.	8.14	33.199	25.86	0.140	0.482	4.29	=88.0
60.	8.02	33.304	25.96	0.161	0.473	4.13	=88.0
70.	7.94	33.421	26.06	0.181	0.471	3.83	=88.0
80.	7.92	33.584	26.20	0.200	0.457	3.66	=88.0
90.	7.88	33.639	26.25	0.219	0.455	3.57	=88.0
100.	7.59	33.809	26.42	0.236	0.540	3.08	=88.0
125.	7.43	33.878	26.50	0.276	0.799	1.68	=88.0
150.	7.37	33.890	26.51	0.315	0.895	1.54	=88.0
162.	7.27	33.913	26.55	0.333	1.141	1.46	=88.0

INTERPOLATED AND COMPUTED VALUES							
CRUISE	W8009	LAT	47-21.9N	DATE	26/ 9/80		
STATION	016	LON	124-45.6W	TIME	2026(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	12.08	32.355	24.54	0.000	0.987	6.14	-2.32
10.	11.31	32.339	24.67	0.034	1.465	6.31	-3.91
20.	9.45	32.611	25.20	0.064	0.539	5.69	=88.0
30.	8.55	32.740	25.44	0.091	0.478	5.56	=88.0
40.	8.36	32.862	25.57	0.116	0.459	5.29	=88.0
50.	8.22	33.086	25.76	0.139	0.476	4.83	=88.0
60.	8.06	33.263	25.92	0.161	0.482	4.35	=88.0
70.	7.95	33.445	26.08	0.182	0.476	3.92	=88.0
80.	7.91	33.498	26.13	0.201	0.474	3.61	=88.0
90.	7.89	33.591	26.21	0.220	0.454	3.63	=88.0
100.	7.78	33.699	26.31	0.238	0.464	3.50	=88.0
125.	7.51	33.848	26.46	0.280	0.669	2.01	=88.0
150.	7.29	33.903	26.54	0.319	1.117	1.63	=88.0
158.	7.25	33.914	26.55	0.331	1.338	1.52	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	WS009 017	LAT 47-23.7N LON 124-46.4W	DATE 26/ 9/80 TIME 2117(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
				0.	12.09	32.331	24.52	0.000	0.950	6.27	-2.78
				10.	11.49	32.423	24.70	0.034	0.866	6.23	-3.79
				20.	10.16	32.549	25.04	0.065	0.663	5.75	=88.0
				30.	8.38	32.708	25.37	0.093	0.493	5.59	=88.0
				40.	8.40	32.835	25.54	0.118	0.465	5.33	=88.0
				50.	8.22	33.048	25.73	0.142	0.468	4.78	=88.0
				60.	8.06	33.242	25.91	0.164	0.465	4.45	=88.0
				70.	7.96	33.337	26.04	0.185	0.469	4.14	=88.0
				80.	7.89	33.534	26.16	0.204	0.467	3.74	=88.0
				90.	7.81	33.711	26.31	0.222	0.460	3.54	=88.0
				100.	7.61	33.801	26.41	0.239	0.593	2.73	=88.0
				125.	7.52	33.843	26.46	0.280	0.680	1.85	=88.0
				150.	7.31	33.903	26.53	0.319	1.102	1.56	=88.0
				157.	7.29	33.909	26.54	0.330	1.185	1.53	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	WS009 018	LAT 47-25.4N LON 124-47.3W	DATE 26/ 9/80 TIME 2204(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
				0.	11.66	32.413	24.67	0.000	1.098	6.37	-3.03
				10.	11.21	32.432	24.76	0.033	0.979	6.34	-3.95
				20.	9.61	32.590	25.16	0.063	0.571	5.99	=88.0
				30.	8.81	32.719	25.38	0.090	0.492	5.70	=88.0
				40.	8.43	32.852	25.55	0.115	0.468	5.25	=88.0
				50.	8.16	33.114	25.79	0.139	0.464	4.85	=88.0
				60.	8.03	33.285	25.93	0.161	0.458	4.67	=88.0
				70.	7.88	33.522	26.15	0.181	0.460	4.08	=88.0
				80.	7.82	33.572	26.20	0.199	0.455	3.89	=88.0
				90.	7.65	33.692	26.29	0.217	0.454	3.72	=88.0
				100.	7.72	33.741	26.35	0.235	0.474	3.30	=88.0
				125.	7.44	33.870	26.49	0.276	0.770	1.88	=88.0
				150.	7.30	33.904	26.54	0.315	1.094	1.61	=88.0
				158.	7.29	33.907	26.54	0.327	1.117	1.56	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	WS009 019	LAT 47-27.4N LON 124-49.0W	DATE 26/ 9/80 TIME 2250(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
				0.	12.88	32.262	24.32	0.000	1.036	6.00	-2.00
				10.	11.30	32.449	24.67	0.035	1.044	6.05	-3.84
				20.	10.56	32.566	25.00	0.066	0.781	6.02	=88.0
				30.	8.81	32.717	25.38	0.094	0.492	5.60	=88.0
				40.	8.53	32.836	25.52	0.120	0.474	5.17	=88.0
				50.	8.22	33.036	25.72	0.144	0.462	4.81	=88.0
				60.	7.98	33.309	25.97	0.165	0.464	4.26	=88.0
				70.	7.87	33.490	26.13	0.185	0.462	3.86	=88.0
				80.	7.82	33.623	26.24	0.204	0.456	3.60	=88.0
				90.	7.79	33.719	26.32	0.222	0.452	3.45	=88.0
				100.	7.58	33.815	26.43	0.239	0.541	2.81	=88.0
				125.	7.42	33.876	26.50	0.279	0.730	1.79	=88.0
				150.	7.21	33.922	26.56	0.317	0.937	1.54	=88.0
				158.	7.20	33.924	26.57	0.329	0.949	1.55	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	WS009 020	LAT 47-28.9N LON 124-50.7W	DATE 26/ 9/80 TIME 2336(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
				0.	12.85	32.272	24.33	0.000	1.044	6.01	-2.13
				10.	11.66	32.362	24.63	0.035	0.821	6.12	-3.95
				20.	11.05	32.445	24.80	0.067	0.778	6.12	=88.0
				30.	9.22	32.634	25.25	0.097	0.614	5.96	=88.0
				40.	8.58	32.804	25.49	0.123	0.473	5.43	=88.0
				50.	8.41	32.898	25.59	0.148	0.468	5.21	=88.0
				60.	8.13	33.121	25.80	0.171	0.467	4.63	=88.0
				70.	8.00	33.281	25.95	0.193	0.463	4.29	=88.0
				80.	7.79	33.595	26.22	0.213	0.452	3.91	=88.0
				90.	7.74	33.695	26.31	0.230	0.450	3.66	=88.0
				100.	7.54	33.826	26.44	0.247	0.544	3.00	=88.0
				125.	7.28	33.906	26.54	0.287	0.787	1.82	=88.0
				150.	7.22	33.920	26.56	0.325	0.905	1.60	=88.0
				163.	7.19	33.926	26.57	0.344	0.940	1.55	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	WS009 021	LAT 47-30.4N LON 124-52.4W	DATE 27/ 9/80 TIME 34(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
				0.	13.25	32.262	24.25	0.000	0.945	6.12	-2.70
				10.	13.25	32.262	24.25	0.037	0.925	6.14	-3.86
				20.	11.67	32.349	24.61	0.072	0.837	6.33	=88.0
				30.	9.70	32.570	25.13	0.103	0.571	5.92	=88.0
				40.	8.48	32.870	25.55	0.130	0.471	5.57	=88.0
				50.	8.28	33.096	25.76	0.154	0.479	4.93	=88.0
				60.	7.88	33.466	26.11	0.175	0.475	4.27	=88.0
				70.	7.81	33.555	26.19	0.194	0.464	3.93	=88.0
				80.	7.76	33.624	26.25	0.212	0.442	3.93	=88.0
				90.	7.76	33.733	26.34	0.229	0.455	3.58	=88.0
				100.	7.56	33.817	26.43	0.246	0.523	3.22	=88.0
				125.	7.28	33.906	26.54	0.286	0.795	1.98	=88.0
				150.	7.23	33.918	26.56	0.324	0.887	1.75	=88.0
				158.	7.23	33.919	26.56	0.337	0.877	1.65	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	WS009 022	LAT 47-32.6N LON 124-53.6W	DATE 27/ 9/80 TIME 120(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
				0.	13.66	32.288	24.18	0.000	=88.0	5.62	-2.04
				10.	13.58	32.279	24.19	0.038	0.834	5.93	-3.88
				20.	12.13	32.334	24.52	0.074	0.848	6.21	=88.0
				30.	9.65	32.538	25.15	0.105	0.592	5.86	=88.0
				40.	9.24	32.690	25.30	0.133	0.541	5.46	=88.0
				50.	8.59	32.928	25.58	0.158	0.490	5.20	=88.0
				60.	8.29	33.057	25.73	0.182	0.475	4.68	=88.0
				70.	7.94	33.309	26.04	0.204	0.482	4.12	=88.0
				80.	7.76	33.620	26.25	0.223	0.458	3.75	=88.0
				90.	7.68	33.678	26.30	0.240	0.444	3.66	=88.0
				100.	7.62	33.803	26.41	0.257	0.466	3.23	=88.0
				125.	7.42	33.875	26.50	0.298	0.622	2.22	=88.0
				150.	7.29	33.911	26.54	0.336	0.940	1.63	=88.0
				154.	7.29	33.911	26.54	0.343	0.951	1.58	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-33.9N DATE 27/ 9/80
STATION 023 LON 124-55.1W TIME 208(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.36	32.262	24.23	0.000	0.898	5.91	-2.16
10.	13.36	32.261	24.22	0.037	0.888	6.07	-3.78
20.	12.07	32.321	24.52	0.073	0.806	6.22	=88.0
30.	10.61	32.473	24.90	0.106	0.660	5.97	=88.0
40.	9.17	32.634	25.26	0.135	0.530	5.72	=88.0
50.	8.78	32.747	25.41	0.162	0.497	5.44	=88.0
60.	8.33	33.073	25.73	0.186	0.485	4.87	=88.0
70.	7.88	33.459	26.10	0.207	0.485	4.15	=88.0
80.	7.77	33.544	26.19	0.226	0.458	3.76	=88.0
90.	7.72	33.601	26.24	0.244	0.437	3.83	=88.0
100.	7.73	33.719	26.33	0.262	0.439	3.63	=88.0
125.	7.33	33.902	26.53	0.303	0.694	2.13	=88.0
150.	7.28	33.913	26.55	0.341	0.911	1.60	=88.0
157.	7.28	33.913	26.55	0.352	0.944	1.51	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-32.2N DATE 27/ 9/80
STATION 024 LON 124-58.0W TIME 243(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.47	32.312	24.04	0.000	0.667	5.65	-2.77
10.	14.40	32.311	24.05	0.039	0.672	5.85	-3.68
20.	12.32	32.291	24.45	0.076	0.683	6.16	=88.0
30.	9.88	32.536	25.07	0.108	0.557	5.98	=88.0
40.	9.03	32.645	25.29	0.136	0.507	5.74	=88.0
50.	8.58	32.766	25.46	0.163	0.484	5.47	=88.0
60.	8.42	32.835	25.54	0.188	0.460	5.27	=88.0
70.	8.17	33.074	25.76	0.212	0.454	4.94	=88.0
80.	8.06	33.164	25.85	0.234	0.448	4.72	=88.0
90.	7.77	33.401	26.07	0.255	0.427	4.61	=88.0
100.	7.73	33.547	26.19	0.274	0.429	4.33	=88.0
125.	7.45	33.888	26.50	0.316	0.467	3.07	=88.0
150.	7.05	33.960	26.62	0.354	0.542	2.37	=88.0
175.	7.01	33.964	26.62	0.391	0.564	2.13	=88.0
184.	6.99	33.964	26.63	0.404	0.582	1.99	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-31.7N DATE 27/ 9/80
STATION 025 LON 124-58.6W TIME 307(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.55	32.311	24.02	0.000	0.673	5.51	-2.04
10.	14.48	32.311	24.03	0.039	0.665	5.75	-3.69
20.	10.99	32.347	24.74	0.075	0.659	6.24	-4.16
30.	9.44	32.584	25.18	0.105	0.531	6.26	=88.0
40.	8.99	32.694	25.27	0.133	0.496	6.13	=88.0
50.	8.51	32.639	25.37	0.160	0.452	6.11	=88.0
60.	8.53	32.770	25.47	0.186	0.461	5.68	=88.0
70.	8.24	32.953	25.65	0.210	0.442	5.29	=88.0
80.	8.22	32.990	25.69	0.234	0.442	4.99	=88.0
90.	7.93	33.244	25.93	0.256	0.431	4.79	=88.0
100.	7.77	33.406	26.08	0.276	0.423	4.60	=88.0
125.	7.60	33.840	26.44	0.321	0.459	3.11	=88.0
150.	7.15	33.950	26.59	0.360	0.496	2.52	=88.0
175.	7.03	33.964	26.62	0.397	0.516	2.24	=88.0
200.	6.93	33.979	26.65	0.433	0.487	2.27	=88.0
250.	6.80	33.986	26.67	0.505	0.535	2.01	=88.0
300.	6.70	33.993	26.69	0.576	0.550	1.87	=88.0
327.	6.61	34.002	26.71	0.614	0.530	1.93	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-30.3N DATE 27/ 9/80
STATION 026 LON 125-01.4W TIME 353(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.48	32.320	24.04	0.000	0.689	5.75	-2.27
10.	14.48	32.318	24.04	0.039	0.644	5.85	-3.87
20.	13.76	32.352	24.21	0.077	0.673	5.97	=88.0
30.	11.08	32.573	24.89	0.111	0.697	6.56	=88.0
40.	9.65	32.589	25.15	0.141	0.581	6.59	=88.0
50.	8.83	32.618	25.30	0.169	0.483	6.51	=88.0
60.	8.45	32.616	25.38	0.195	0.440	6.29	=88.0
70.	8.27	32.748	25.49	0.221	0.431	5.99	=88.0
80.	8.09	33.015	25.73	0.245	0.426	5.63	=88.0
90.	7.98	33.247	25.92	0.267	0.425	5.12	=88.0
100.	7.86	33.537	26.17	0.287	0.427	4.61	=88.0
125.	7.83	33.696	26.30	0.333	0.431	3.98	=88.0
150.	7.62	33.856	26.45	0.375	0.448	2.94	=88.0
175.	7.29	33.909	26.54	0.415	0.434	2.96	=88.0
200.	7.14	33.958	26.60	0.452	0.449	2.69	=88.0
250.	6.77	33.986	26.67	0.525	0.453	2.46	=88.0
300.	6.36	34.013	26.75	0.594	0.444	2.22	=88.0
350.	6.07	34.034	26.80	0.661	0.479	1.86	=88.0
400.	5.78	34.048	26.85	0.725	0.457	1.58	=88.0
450.	5.54	34.060	26.89	0.788	0.457	1.42	=88.0
500.	5.12	34.088	26.96	0.843	0.442	1.14	=88.0
600.	4.77	34.170	27.07	0.959	0.443	0.71	=88.0
700.	4.22	34.274	27.21	1.060	0.471	0.50	=88.0
800.	3.95	34.325	27.28	1.151	0.474	0.46	=88.0
883.	3.93	34.330	27.28	1.224	0.549	0.46	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-29.6N DATE 27/ 9/80
STATION 027 LON 125-02.1W TIME 453(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.62	32.317	24.01	0.000	0.628	5.83	-2.73
10.	14.49	32.319	24.04	0.039	0.631	5.82	-3.78
20.	14.19	32.330	24.11	0.078	0.664	5.94	=88.0
30.	11.54	32.537	24.79	0.113	0.681	6.62	=88.0
40.	9.98	32.582	25.09	0.144	0.583	6.74	=88.0
50.	9.22	32.617	25.24	0.172	0.509	6.53	=88.0
60.	8.82	32.619	25.31	0.199	0.467	6.50	=88.0
70.	8.31	32.699	25.45	0.225	0.433	6.21	=88.0
80.	8.17	32.880	25.61	0.250	0.425	5.87	=88.0
90.	8.12	33.130	25.81	0.274	0.424	5.41	=88.0
100.	8.03	33.420	26.05	0.295	0.427	4.75	=88.0
125.	7.83	33.682	26.29	0.342	0.428	3.99	=88.0
150.	7.67	33.797	26.40	0.385	0.428	3.59	=88.0
175.	7.38	33.896	26.52	0.425	0.442	2.98	=88.0
200.	7.14	33.929	26.58	0.463	0.428	3.22	=88.0
250.	6.81	33.975	26.66	0.537	0.431	2.72	=88.0
300.	6.36	33.994	26.73	0.607	0.422	2.43	=88.0
350.	5.91	33.996	26.79	0.674	0.417	2.20	=88.0
400.	5.74	34.032	26.84	0.739	0.421	1.78	=88.0
450.	5.34	34.045	26.90	0.801	0.414	1.48	=88.0
500.	5.14	34.084	26.96	0.861	0.420	1.18	=88.0
600.	4.71	34.181	27.08	0.972	0.450	0.68	=88.0
700.	4.24	34.275	27.21	1.072	0.430	0.50	=88.0
800.	3.97	34.323	27.27	1.163	0.453	0.46	=88.0
900.	3.75	34.364	27.33	1.249	0.471	0.47	=88.0
986.	3.50	34.399	27.38	1.319	0.629	0.51	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-20.7N DATE 27/ 9/80
STATION 028 LON 124-54.3W TIME 703(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HIT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.08	32.321	24.12	0.000	0.661	5.73	-2.22
10.	14.07	32.326	24.13	0.038	0.664	5.83	-2.96
20.	12.60	32.270	24.38	0.075	0.695	6.08	-3.53
30.	10.30	32.561	24.94	0.108	0.615	6.23	-3.99
40.	9.35	32.607	25.21	0.137	0.513	6.47	=88.0
50.	8.98	32.620	25.28	0.165	0.488	6.38	=88.0
60.	8.74	32.624	25.32	0.192	0.470	6.33	=88.0
70.	8.41	32.661	25.40	0.219	0.445	5.17	=88.0
80.	8.23	32.795	25.53	0.244	0.432	5.96	=88.0
90.	8.07	33.004	25.78	0.268	0.431	5.48	=88.0
100.	7.99	33.369	26.02	0.289	0.429	4.94	=88.0
125.	7.61	33.838	26.44	0.335	0.461	3.35	=88.0
150.	7.44	33.876	26.49	0.375	0.595	2.69	=88.0
175.	7.24	33.923	26.56	0.413	0.537	2.17	=88.0
200.	7.16	33.937	26.58	0.451	0.632	1.78	=88.0
250.	6.89	33.974	26.65	0.525	0.572	1.79	=88.0
300.	6.68	34.002	26.70	0.596	0.511	2.00	=88.0
350.	6.32	34.035	26.78	0.661	0.472	1.92	=88.0
400.	5.96	34.036	26.83	0.730	0.458	1.69	=88.0
450.	5.68	34.030	26.87	0.793	0.487	1.43	=88.0
500.	5.24	34.072	26.93	0.854	0.432	1.25	=88.0
600.	4.81	34.142	27.04	0.969	0.415	0.84	=88.0
700.	4.38	34.245	27.17	1.072	0.452	0.52	=88.0
800.	4.09	34.303	27.24	1.167	0.460	0.47	=88.0
900.	3.80	34.356	27.32	1.255	0.448	0.45	=88.0
1000.	3.51	34.403	27.38	1.337	0.463	0.48	=88.0
1100.	3.25	34.445	27.44	1.413	0.472	0.54	=88.0
1145.	3.16	34.461	27.46	1.445	0.555	0.59	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-19.4N DATE 27/ 9/80
STATION 029 LON 124-52.2W TIME 811(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HIT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.39	32.264	24.22	0.000	0.799	5.88	-0.11
10.	12.62	32.294	24.39	0.036	0.719	6.09	-1.05
20.	10.01	32.535	25.05	0.069	0.545	6.24	-1.67
30.	9.22	32.598	25.23	0.098	0.501	6.23	-2.08
40.	8.83	32.618	25.30	0.125	0.479	6.16	-2.42
50.	8.55	32.650	25.37	0.152	0.460	6.10	-2.72
60.	8.35	32.727	25.46	0.177	0.440	5.96	-2.98
70.	8.26	32.804	25.54	0.203	0.435	5.72	-3.21
80.	8.20	32.993	25.69	0.227	0.436	5.30	-3.44
90.	7.94	33.294	25.96	0.249	0.439	4.84	-3.67
100.	7.87	33.474	26.12	0.269	0.430	4.47	-3.88
125.	7.30	33.741	26.34	0.315	0.447	3.40	=88.0
150.	7.46	33.876	26.49	0.356	0.488	2.61	=88.0
175.	7.21	33.929	26.57	0.394	0.642	1.88	=88.0
200.	7.16	33.938	26.58	0.432	0.637	1.63	=88.0
250.	6.93	33.972	26.64	0.506	0.589	1.73	=88.0
300.	6.63	33.996	26.70	0.577	0.558	1.82	=88.0
350.	6.17	34.029	26.79	0.645	0.508	1.79	=88.0
400.	5.96	34.050	26.84	0.710	0.498	1.60	=88.0
450.	5.60	34.073	26.89	0.773	0.597	1.33	=88.0
500.	5.43	34.089	26.93	0.834	0.512	1.17	=88.0
600.	4.77	34.176	27.07	0.947	0.512	0.74	=88.0
700.	4.43	34.237	27.16	1.050	0.471	0.54	=88.0
800.	3.99	34.321	27.27	1.144	0.505	0.45	=88.0
851.	3.90	34.338	27.29	1.189	0.526	0.44	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-18.3N DATE 27/ 9/80
STATION 030 LON 124-51.5W TIME 912(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HIT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.81	32.289	24.16	0.000	0.726	5.89	0.06
10.	13.47	32.259	24.29	0.038	0.762	6.04	-0.68
20.	10.88	32.448	24.83	0.072	0.627	6.27	-1.42
30.	9.41	32.574	25.18	0.102	0.523	6.15	-1.89
40.	8.80	32.619	25.31	0.130	0.472	6.30	-2.26
50.	8.49	32.630	25.41	0.156	0.449	6.04	-2.54
60.	8.28	32.842	25.56	0.181	0.437	5.85	-2.78
70.	8.16	33.042	25.74	0.205	0.440	5.20	-3.03
80.	8.05	33.142	25.83	0.227	0.440	4.92	-3.26
90.	7.91	33.323	25.99	0.249	0.445	4.55	-3.49
100.	7.87	33.394	26.05	0.269	0.439	4.40	-3.71
125.	7.77	33.699	26.31	0.316	0.451	3.56	-4.18
150.	7.84	33.861	26.47	0.358	0.464	2.86	=88.0
175.	7.25	33.920	26.56	0.397	0.601	1.38	=88.0
200.	7.17	33.936	26.58	0.434	0.612	1.73	=88.0
250.	7.00	33.961	26.62	0.509	0.678	1.71	=88.0
300.	6.52	34.007	26.72	0.580	0.534	1.84	=88.0
322.	6.19	34.027	26.78	0.610	0.537	1.73	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-18.3N DATE 27/ 9/80
STATION 031 LON 124-50.5W TIME 952(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HIT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.38	32.267	24.22	0.000	0.843	5.98	0.21
10.	13.31	32.264	24.24	0.037	0.847	6.07	-0.68
20.	11.22	32.490	24.73	0.072	0.643	6.18	-1.47
30.	9.22	32.586	25.22	0.102	0.504	5.89	-2.03
40.	8.71	32.638	25.34	0.129	0.473	5.96	-2.40
50.	8.35	32.700	25.51	0.155	0.442	5.77	-2.74
60.	8.23	33.004	25.70	0.179	0.447	5.23	-2.99
70.	8.13	33.095	25.78	0.202	0.445	4.87	-3.26
80.	7.97	33.248	25.92	0.224	0.445	4.54	-3.52
90.	7.90	33.335	26.00	0.245	0.447	4.37	-3.76
100.	7.81	33.544	26.18	0.264	0.431	4.24	-3.98
125.	7.71	33.898	26.40	0.308	0.452	3.17	=88.0
150.	7.28	33.913	26.55	0.348	0.544	2.26	=88.0
175.	7.21	33.929	26.57	0.386	0.612	1.97	=88.0
200.	7.18	33.946	26.59	0.424	0.541	2.16	=88.0
247.	7.07	33.958	26.61	0.494	0.649	2.16	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009	LAT		47-17.7N		DATE		27/ 9/80	
STATION		032	LON		124-49.3W		TIME		1019(+7)	
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE			
M	C	O/00		M2/S2	/M	ML/L	LOG(uW/CM2)			
0.	12.91	32.281	24.33	0.000	0.938	5.99	0.11			
10.	12.29	32.300	24.46	0.036	0.846	6.20	-0.76			
20.	10.13	32.505	25.01	0.068	0.603	6.09	-1.53			
30.	9.18	32.615	25.25	0.097	0.502	5.81	-2.03			
40.	8.52	32.708	25.42	0.123	0.461	5.62	-2.41			
50.	8.35	32.831	25.54	0.149	0.443	5.62	-2.72			
60.	8.25	32.991	25.68	0.173	0.443	5.31	-2.98			
70.	8.14	33.102	25.79	0.196	0.444	4.87	-3.26			
80.	7.92	33.352	26.01	0.217	0.452	4.52	-3.51			
90.	7.77	33.438	26.10	0.237	0.437	4.31	-3.74			
100.	7.83	33.557	26.19	0.256	0.433	4.18	-3.95			
125.	7.66	33.766	26.38	0.300	0.472	3.15	=88.0			
150.	7.31	33.918	26.55	0.340	0.510	2.39	=88.0			
175.	7.24	33.930	26.56	0.378	0.693	2.22	=88.0			
180.	7.24	33.931	26.57	0.386	0.780	2.17	=88.0			

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009		LAT		47-16.3N		DATE		27/ 9/80	
STATION		033		LON		124-47.2W		TIME		1053(+7)	
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE				
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)				
0.	12.71	32.277	24.36	0.090	0.972	6.08	0.36				
10.	12.06	32.329	24.53	0.035	0.891	6.19	-0.43				
20.	10.71	32.444	24.86	0.068	0.705	6.21	-1.30				
30.	8.83	32.666	25.34	0.097	0.500	5.66	-1.81				
40.	8.57	32.742	25.44	0.123	0.490	5.51	-2.17				
50.	8.35	32.919	25.61	0.148	0.462	5.22	-2.47				
60.	8.18	33.090	25.77	0.171	0.463	4.68	-2.79				
70.	8.04	33.232	25.90	0.193	0.458	4.45	-3.07				
80.	7.96	33.333	26.00	0.214	0.459	4.19	-3.34				
90.	7.85	33.582	26.21	0.233	0.439	4.05	-3.59				
100.	7.80	33.673	26.28	0.251	0.451	3.55	-3.81				
125.	7.49	33.862	26.48	0.294	0.484	2.63	=88.0				
150.	7.30	33.910	26.54	0.333	0.878	1.89	=88.0				
153.	7.30	33.911	26.54	0.337	1.006	1.76	=88.0				

INTERPOLATED AND COMPUTED VALUES

CRUISE		W3009	LAT	47-07.0N	DATE	27/ 9/80	
STATION		D34	LON	124-13.1W	TIME	1717(+7)	
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	13.36	30.576	22.92	0.000	1.506	5.57	-0.18
10.	13.36	30.595	22.94	0.050	1.451	5.49	-1.68
13.	13.34	30.621	22.96	0.064	1.405	5.46	-2.18

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009	LAT		47-07.1N	DATE		27/ 9/80
STATION		D35	LON		124-15.0W	TIME		1753(+7)
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE	
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)	
0.	13.44	30.524	22.87	0.000	1.545	5.29	-0.12	
10.	13.26	30.634	22.99	0.050	1.511	5.29	-1.82	
20.	12.36	31.291	23.67	0.056	1.172	5.06	-3.52	
24.	11.83	31.654	24.05	0.114	1.738	4.67	-4.04	

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009		LAT		47-07.1N		DATE		27/ 9/80	
STATION		D36		LON		124-17.9W		TIME		1824(+7)	
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE				
M	C	0/00		M2/S2	/M	ML/L	LOG(μW/CM2)				
0.	13.73	30.467	22.77	0.000	1.387	5.90	-0.69				
10.	12.62	31.096	23.47	0.048	1.338	5.38	-2.33				
20.	12.17	31.837	24.17	0.089	0.964	4.96	-3.72				
30.	9.44	32.923	25.45	0.121	1.252	4.14	=88.0				
36.	8.81	33.168	25.74	0.135	1.742	3.29	=88.0				

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009		LAT		47-07.0N		DATE		27/ 9/80	
STATION		D37		LON		124-22.5W		TIME		1904(+7)	
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE				
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)				
0.	13.82	30.882	23.07	0.000	1.360	5.75	-1.70				
10.	13.39	31.112	23.33	0.047	1.344	5.75	-3.19				
20.	9.69	32.749	25.27	0.084	1.129	4.14	=88.0				
30.	8.17	33.423	26.03	0.107	1.525	3.25	=88.0				
40.	8.10	33.452	26.07	0.127	1.665	2.57	=88.0				
49.	7.96	33.511	26.13	0.145	1.207	2.23	=88.0				

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009		LAT		47-07.0N		DATE		27/ 9/80	
STATION		D38		LON		124-26.7W		TIME		1950(+7)	
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE				
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)				
0.	13.85	31.700	23.69	0.000	1.402	5.82	-2.83				
10.	13.86	31.709	23.70	0.042	1.394	5.83	=88.0				
20.	11.15	32.500	24.83	0.079	0.845	5.22	=88.0				
30.	7.94	33.398	26.05	0.105	0.532	3.98	=88.0				
40.	7.83	33.606	26.23	0.124	0.819	3.09	=88.0				
50.	7.82	33.611	26.23	0.142	0.835	2.75	=88.0				
58.	7.82	33.614	26.23	0.157	0.872	2.06	=88.0				

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-06.9N	DATE	27/ 9/80
STATION		D39	LON	124-32.9W	TIME	2043(+7)
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN
M	C	0/00		M2/S2	/M	ML/L
IRRADIANCE						
LOG(μ W/CM2)						
0.	13.95	31.484	23.51	0.000	1.602	5.93
10.	12.38	32.147	24.33	0.040	0.970	6.02
20.	8.55	33.025	25.66	0.070	0.532	4.59
30.	8.02	33.305	25.96	0.092	0.491	4.14
40.	7.92	33.602	26.21	0.112	0.578	3.56
50.	7.83	33.702	26.30	0.130	0.900	3.09
60.	7.83	33.733	26.33	0.147	0.929	2.93
70.	7.82	33.734	26.33	0.165	0.950	2.67

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-07.1N	DATE	27/ 9/80
STATION		D39	LON	124-40.0W	TIME	2145(+7)
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN
M	C	0/00		M2/S2	/M	ML/L
IRRADIANCE						
LOG(μ W/CM2)						
0.	13.88	31.701	23.69	0.000	1.065	5.84
10.	12.47	32.173	24.33	0.030	1.004	5.99
20.	8.93	32.938	25.55	0.070	0.537	4.58
30.	8.16	33.149	25.82	0.093	0.492	4.29
40.	7.92	33.280	25.95	0.115	0.487	3.94
50.	7.92	33.471	26.11	0.135	0.525	3.46
60.	7.79	33.639	26.39	0.153	0.723	3.25
70.	7.79	33.613	26.42	0.170	0.824	2.95
80.	7.85	33.820	26.46	0.185	0.853	2.40
90.	7.81	33.829	26.48	0.192	0.895	2.16
99.	7.81	33.831	26.46	0.216	0.935	1.93

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-07.0N	DATE	27/ 9/80
STATION		D41	LON	124-47.3W	TIME	2240(+7)
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN
M	C	0/00		M2/S2	/M	ML/L
IRRADIANCE						
LOG(μ W/CM2)						
0.	12.79	32.234	24.31	0.000	1.617	6.28
10.	12.77	32.245	24.33	0.036	1.486	6.18
20.	10.00	32.631	25.13	0.069	0.634	5.46
30.	8.90	32.945	25.55	0.095	0.539	4.88
40.	8.12	33.174	25.85	0.119	0.474	4.77
50.	7.85	33.410	26.07	0.139	0.444	4.66
60.	7.80	33.668	26.28	0.158	0.548	3.77
70.	7.74	33.767	26.37	0.175	0.675	3.19
80.	7.69	33.795	26.39	0.192	0.826	2.78
90.	7.67	33.804	26.41	0.200	0.866	2.54
100.	7.89	33.829	26.44	0.225	0.797	2.42
125.	7.51	33.855	26.47	0.265	1.268	1.93
130.	7.49	33.862	26.48	0.274	1.121	1.87

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-07.0N	DATE	27/ 9/80
STATION		D42	LON	124-54.5W	TIME	2340(+7)
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN
M	C	0/00		M2/S2	/M	ML/L
IRRADIANCE						
LOG(μ W/CM2)						
0.	13.37	32.235	24.20	0.000	0.886	5.85
10.	12.62	32.283	24.39	0.037	0.830	5.95
20.	9.39	32.547	25.19	0.068	0.558	5.74
30.	8.06	32.658	25.36	0.096	0.501	5.81
40.	8.47	32.771	25.48	0.122	0.469	5.66
50.	8.44	32.811	25.51	0.147	0.468	5.30
60.	8.23	33.030	25.72	0.171	0.459	5.07
70.	8.15	33.144	25.82	0.193	0.466	4.73
80.	7.90	33.401	26.05	0.214	0.437	4.47
90.	7.83	33.659	26.27	0.233	0.518	3.84
100.	7.67	33.703	26.40	0.250	0.601	3.11
125.	7.49	33.854	26.48	0.291	0.876	2.14
150.	7.29	33.908	26.54	0.330	1.099	1.69
153.	7.28	33.908	26.54	0.335	1.130	1.66

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-06.9N	DATE	28/ 9/80
STATION		D43	LON	124-58.4W	TIME	28(+7)
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN
M	C	0/00		M2/S2	/M	ML/L
IRRADIANCE						
LOG(μ W/CM2)						
0.	14.11	32.201	24.10	0.000	0.703	5.79
10.	13.76	32.293	24.17	0.038	0.646	5.76
20.	12.32	32.429	24.56	0.074	0.658	6.09
30.	9.79	32.562	25.11	0.106	0.560	5.98
40.	9.04	32.618	25.27	0.134	0.501	5.81
50.	8.61	32.673	25.38	0.160	0.493	5.77
60.	8.39	32.898	25.52	0.186	0.449	5.52
70.	8.25	33.014	25.70	0.210	0.447	5.26
80.	7.98	33.224	25.91	0.232	0.438	4.86
90.	7.91	33.297	25.97	0.253	0.430	4.70
100.	7.84	33.603	26.22	0.273	0.469	4.32
125.	7.46	33.862	26.48	0.316	0.661	2.68
150.	7.28	33.914	26.55	0.355	0.742	2.04
175.	7.23	33.924	26.56	0.393	0.748	1.83
200.	7.20	33.924	26.56	0.431	0.771	1.69
250.	7.00	33.958	26.62	0.505	0.637	1.68
300.	6.54	34.009	26.72	0.577	0.524	1.86

FOR (CM2)
N IRRADIANCE

149(+1)
38% 200

415013

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-07.0N DATE 28/ 9/80
STATION D44 LON 125-01.5W TIME 125(+7)

DEPTH M	TEMP C	SAL O/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.30	32.291	24.06	0.000	0.764	5.71	-2.22
10.	14.00	32.274	24.11	0.039	0.684	5.67	-3.72
20.	11.95	32.474	24.66	0.074	0.630	6.07	-4.17
30.	9.57	32.591	25.16	0.105	0.563	6.15	=88.0
40.	9.23	32.697	25.23	0.133	0.518	6.03	=88.0
50.	8.78	32.643	25.33	0.160	0.482	5.92	=88.0
60.	8.43	32.746	25.46	0.186	0.454	5.75	=88.0
70.	8.30	32.927	25.63	0.211	0.445	5.32	=88.0
80.	8.10	33.213	25.88	0.234	0.438	4.89	=88.0
90.	8.01	33.393	26.03	0.255	0.428	4.68	=88.0
100.	7.56	33.606	26.22	0.274	0.455	4.06	=88.0
125.	7.57	33.837	26.45	0.317	0.629	2.75	=88.0
150.	7.40	33.901	26.52	0.357	0.608	2.39	=88.0
175.	7.27	33.943	26.57	0.395	0.452	2.54	=88.0
200.	7.15	33.962	26.60	0.432	0.490	2.42	=88.0
250.	6.95	33.980	26.64	0.506	0.532	2.09	=88.0
300.	6.76	34.001	26.69	0.577	0.503	2.15	=88.0
350.	6.52	34.014	26.73	0.647	0.509	1.99	=88.0
400.	5.93	34.052	26.83	0.714	0.487	1.85	=88.0
450.	5.35	34.083	26.93	0.775	0.451	1.21	=88.0
500.	5.10	34.119	26.99	0.834	0.403	0.96	=88.0
600.	4.88	34.160	27.05	0.945	0.445	0.70	=88.0
700.	4.49	34.224	27.14	1.050	0.467	0.49	=88.0
796.	4.27	34.268	27.20	1.144	0.500	0.41	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-07.0N DATE 28/ 9/80
STATION D45 LON 125-09.1W TIME 300(+7)

DEPTH M	TEMP C	SAL O/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.05	32.302	24.12	0.000	0.715	5.83	-2.86
10.	14.04	32.302	24.12	0.038	0.693	5.79	-3.71
20.	10.85	32.524	24.90	0.073	0.628	6.28	=88.0
30.	9.59	32.539	25.15	0.103	0.540	6.41	=88.0
40.	9.04	32.618	25.27	0.130	0.499	6.21	=88.0
50.	8.53	32.628	25.36	0.157	0.463	6.10	=88.0
60.	8.42	32.711	25.44	0.183	0.447	5.91	=88.0
70.	8.25	32.926	25.64	0.208	0.441	5.33	=88.0
80.	8.12	33.112	25.80	0.231	0.429	5.13	=88.0
90.	8.10	33.198	25.87	0.253	0.426	4.99	=88.0
100.	8.03	33.355	26.00	0.274	0.423	4.58	=88.0
125.	7.75	33.705	26.32	0.322	0.475	3.38	=88.0
150.	7.47	33.809	26.48	0.363	0.530	2.50	=88.0
175.	7.29	33.840	26.54	0.403	0.532	2.22	=88.0
200.	7.11	33.832	26.57	0.441	0.582	1.98	=88.0
230.	7.10	33.954	26.60	0.516	0.582	1.75	=88.0
300.	6.93	33.990	26.65	0.599	0.590	2.09	=88.0
350.	6.52	34.007	26.72	0.679	0.598	1.79	=88.0
400.	5.98	34.048	26.83	0.727	0.495	1.85	=88.0
450.	5.44	34.074	26.91	0.789	0.458	1.26	=88.0
500.	5.14	34.084	26.97	0.848	0.448	1.01	=88.0
600.	4.73	34.103	27.08	0.999	0.453	0.73	=88.0
700.	4.45	34.200	27.15	1.032	0.481	0.17	=88.0
800.	4.13	34.293	27.23	1.038	0.489	0.65	=88.0
900.	3.79	34.306	27.31	1.047	0.486	0.35	=88.0
1000.	3.73	34.305	27.39	1.079	0.442	0.19	=88.0
1100.	3.25	34.413	27.44	1.111	0.435	0.48	=88.0
1200.	2.97	34.482	27.50	1.175	0.451	0.60	=88.0
1300.	2.86	34.497	27.52	1.542	0.465	0.68	=88.0
1400.	2.77	34.510	27.54	1.097	0.448	0.75	=88.0
1457.	2.69	34.529	27.57	1.092	0.504	0.88	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-06.8N DATE 28/ 9/80
STATION D46 LON 125-16.3W TIME 446(+7)

DEPTH M	TEMP C	SAL O/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.98	23.353	17.26	0.000	0.795	=88.	-2.88
10.	13.98	23.347	17.25	0.105	0.719	=88.	-3.84
20.	11.65	24.007	18.17	0.205	0.673	=88.	=88.0
30.	9.74	23.499	18.07	0.301	0.554	=88.	=88.0
40.	9.07	23.486	18.15	0.397	0.505	=88.	=88.0
50.	8.62	23.437	18.17	0.493	0.448	=88.	=88.0
60.	8.35	23.436	18.21	0.588	0.434	=88.	=88.0
70.	8.23	23.437	18.22	0.683	0.429	=88.	=88.0
80.	8.11	23.473	18.27	0.778	0.426	=88.	=88.0
90.	8.09	23.507	18.30	0.873	0.430	=88.	=88.0
100.	7.92	23.602	18.39	0.967	0.448	=88.	=88.0
125.	7.68	23.618	18.43	1.200	0.472	=88.	=88.0
150.	7.34	23.669	18.51	1.431	0.542	=88.	=88.0
175.	7.19	23.650	18.52	1.662	0.620	=88.	=88.0
200.	7.13	23.652	18.52	1.893	0.594	=88.	=88.0
250.	6.88	23.720	18.60	2.352	0.526	=88.	=88.0
300.	6.50	23.717	18.64	2.808	0.491	=88.	=88.0
350.	6.06	23.720	18.69	3.262	0.445	=88.	=88.0
400.	5.78	23.719	18.72	3.713	0.442	=88.	=88.0
450.	5.46	23.726	18.75	4.163	0.435	=88.	=88.0
500.	5.19	23.724	18.78	4.612	0.421	=88.	=88.0
600.	4.69	23.738	18.83	5.504	0.413	=88.	=88.0
700.	4.36	23.751	18.87	6.391	0.424	=88.	=88.0
800.	4.11	23.776	18.91	7.274	0.415	=88.	=88.0
900.	3.80	23.802	18.95	8.151	0.411	=88.	=88.0
1000.	3.49	23.804	18.97	9.023	0.408	=88.	=88.0
1100.	3.35	23.817	18.99	9.893	0.415	=88.	=88.0
1200.	3.10	23.824	19.01	10.7	0.421	=88.	=88.0
1300.	2.86	23.829	19.03	11.6	0.424	=88.	=88.0
1400.	2.67	23.833	19.05	12.4	0.425	=88.	=88.0
1500.	2.53	23.841	19.06	13.3	0.426	=88.	=88.0
1600.	2.35	23.850	19.08	14.1	0.431	=88.	=88.0
1638.	2.28	23.857	19.09	14.5	0.448	=88.	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D47	LAT 47-06.8N 125-23.5W	DATE 28/ 9/80 TIME 640(+7)	DEPTH M	TEMP C	SAL O/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μW/CM2)
				0.	13.86	32.230	24.10	0.000	0.801	6.00	-3.14
				10.	13.19	32.309	24.30	0.038	0.769	6.12	-3.85
				20.	10.89	32.579	24.93	0.071	0.625	6.53	=88.0
				30.	10.02	32.586	25.09	0.101	0.592	6.50	=88.0
				40.	9.38	32.630	25.23	0.129	0.527	6.46	=88.0
				50.	8.90	32.624	25.30	0.157	0.467	6.34	=88.0
				60.	8.63	32.630	25.34	0.183	0.452	6.23	=88.0
				70.	8.46	32.668	25.40	0.210	0.437	6.05	=88.0
				80.	8.38	32.748	25.47	0.236	0.433	5.90	=88.0
				90.	8.08	33.094	25.79	0.260	0.431	5.42	=88.0
				100.	8.03	33.271	25.93	0.281	0.436	4.82	=88.0
				125.	7.95	33.642	26.24	0.330	0.439	3.92	=88.0
				150.	7.47	33.871	26.49	0.373	0.478	2.87	=88.0
				175.	7.3	33.919	26.55	0.412	0.489	2.15	=88.0
				200.	7.13	33.946	26.59	0.450	0.500	2.10	=88.0
				250.	6.72	33.954	26.68	0.522	0.493	2.00	=88.0
				300.	6.45	33.999	26.72	0.592	0.477	2.05	=88.0
				350.	6.00	34.028	26.80	0.670	0.479	1.73	=88.0
				400.	5.75	34.030	26.85	0.724	0.455	1.41	=88.0
				450.	5.44	34.026	26.91	0.783	0.443	1.21	=88.0
				500.	5.07	34.079	26.96	0.845	0.417	1.03	=88.0
				600.	4.67	34.129	27.08	0.936	0.417	0.56	=88.0
				700.	4.20	34.253	27.13	1.057	0.409	0.38	=88.0
				800.	4.05	34.311	27.25	1.151	0.420	0.33	=88.0
				900.	3.75	34.331	27.32	1.238	0.410	0.32	=88.0
				1000.	3.53	34.336	27.37	1.320	0.418	0.36	=88.0
				1100.	3.34	34.429	27.42	1.397	0.414	0.41	=88.0
				1200.	3.15	34.457	27.46	1.471	0.420	0.50	=88.0
				1300.	2.94	34.482	27.50	1.541	0.422	0.60	=88.0
				1400.	2.74	34.507	27.54	1.607	0.423	0.72	=88.0
				1500.	2.51	34.534	27.58	1.670	0.425	0.92	=88.0
				1600.	2.26	34.553	27.61	1.729	0.430	1.08	=88.0
				1675.	2.22	34.559	27.63	1.771	0.444	1.22	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D48	LAT 47-07.0N 125-34.0W	DATE 28/ 9/80 TIME 849(+7)	DEPTH M	TEMP C	SAL O/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μW/CM2)
				0.	14.38	32.186	23.96	0.000	0.579	5.86	0.01
				10.	14.33	32.201	23.98	0.040	0.588	5.88	-0.62
				20.	12.42	32.400	24.52	0.077	0.772	6.20	-1.31
				30.	9.67	32.564	25.13	0.108	0.575	6.40	-1.90
				40.	9.03	32.608	25.26	0.136	0.504	6.28	-2.31
				50.	8.56	32.636	25.35	0.163	0.467	6.29	-2.65
				60.	8.45	32.666	25.40	0.190	0.450	6.17	-2.90
				70.	8.20	32.752	25.50	0.215	0.436	5.95	-3.16
				80.	8.03	32.959	25.69	0.239	0.428	5.71	-3.36
				90.	7.88	33.125	25.84	0.262	0.425	5.33	-3.57
				100.	7.81	33.345	26.10	0.283	0.426	4.99	-3.75
				125.	7.59	33.727	26.34	0.329	0.425	4.10	-4.15
				150.	7.31	33.889	26.49	0.370	0.426	3.59	=88.0
				175.	7.30	33.911	26.54	0.409	0.424	3.18	=88.0
				200.	7.12	33.942	26.59	0.447	0.423	2.95	=88.0
				250.	6.53	33.973	26.70	0.519	0.419	2.48	=88.0
				300.	6.05	34.013	26.79	0.597	0.420	2.09	=88.0
				350.	5.82	34.014	26.82	0.652	0.415	1.50	=88.0
				400.	5.75	34.051	26.86	0.715	0.419	1.42	=88.0
				450.	5.52	34.061	26.89	0.778	0.424	1.26	=88.0
				500.	5.27	34.104	26.96	0.838	0.430	0.97	=88.0
				600.	4.83	34.207	27.12	0.947	0.420	0.50	=88.0
				700.	4.26	34.254	27.20	1.045	0.428	0.39	=88.0
				800.	4.02	34.314	27.28	1.138	0.417	0.32	=88.0
				900.	3.63	34.345	27.32	1.235	0.403	0.31	=88.0
				1000.	3.43	34.400	27.38	1.326	0.413	0.36	=88.0
				1100.	3.32	34.432	27.42	1.393	0.414	0.41	=88.0
				1200.	3.15	34.456	27.46	1.457	0.413	0.48	=88.0
				1300.	2.96	34.481	27.50	1.527	0.423	0.57	=88.0
				1400.	2.76	34.506	27.53	1.593	0.425	0.72	=88.0
				1500.	2.48	34.538	27.58	1.656	0.427	0.95	=88.0
				1600.	2.26	34.551	27.60	1.715	0.433	1.05	=88.0
				1675.	2.15	34.578	27.64	1.747	0.453	1.32	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D49	LAT LON	47-07.1N 125-45.0W	DATE TIME	28/ 9/80 1046(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.87	32.266	24.12	0.000	0.804	5.98	0.52
10.	13.82	32.272	24.14	0.038	0.813	6.01	-0.20
20.	13.76	32.280	24.16	0.076	0.797	6.11	-0.89
30.	10.45	32.578	25.01	0.110	0.589	6.55	-1.56
40.	9.58	32.598	25.17	0.139	0.526	6.53	-2.01
50.	8.79	32.610	25.30	0.167	0.483	6.39	-2.37
60.	8.42	32.670	25.41	0.193	0.446	6.16	-2.68
70.	8.34	32.811	25.53	0.219	0.437	5.76	-2.95
80.	8.14	32.941	25.66	0.243	0.435	5.38	-3.18
90.	8.12	33.068	25.76	0.266	0.433	5.10	-3.41
100.	7.94	33.312	25.98	0.288	0.427	4.83	-3.60
125.	7.80	33.738	26.33	0.335	0.429	3.69	-4.05
150.	7.50	33.895	26.50	0.376	0.430	3.08	=88.0
175.	7.07	33.947	26.60	0.414	0.453	2.57	=88.0
200.	6.77	33.962	26.65	0.451	0.436	2.60	=88.0
250.	6.49	34.003	26.72	0.521	0.473	2.03	=88.0
300.	6.20	34.024	26.78	0.588	0.460	1.83	=88.0
350.	5.85	34.047	26.84	0.653	0.453	1.52	=88.0
400.	5.64	34.068	26.88	0.716	0.443	1.29	=88.0
450.	5.39	34.093	26.93	0.776	0.440	1.07	=88.0
500.	5.16	34.116	26.98	0.835	0.429	0.89	=88.0
600.	4.61	34.186	27.10	0.944	0.417	0.55	=88.0
700.	4.38	34.243	27.17	1.045	0.421	0.42	=88.0
800.	4.09	34.300	27.24	1.140	0.425	0.34	=88.0
900.	3.86	34.338	27.30	1.229	0.414	0.32	=88.0
1000.	3.57	34.389	27.37	1.312	0.413	0.33	=88.0
1100.	3.35	34.431	27.42	1.390	0.409	0.39	=88.0
1200.	3.18	34.459	27.46	1.464	0.410	0.46	=88.0
1300.	2.96	34.489	27.50	1.534	0.413	0.60	=88.0
1400.	2.70	34.511	27.54	1.600	0.413	0.71	=88.0
1500.	2.61	34.522	27.56	1.663	0.416	0.83	=88.0
1600.	2.39	34.549	27.60	1.723	0.422	1.04	=88.0
1700.	2.27	34.565	27.62	1.781	0.430	1.18	=88.0
1712.	2.22	34.566	27.63	1.787	0.437	1.21	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D49A	LAT LON	47-07.0N 125-44.8W	DATE TIME	28/ 9/80 1233(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.89	32.268	24.12	0.000	0.862	5.99	0.94
10.	13.88	32.268	24.13	0.038	0.855	6.06	-0.14
20.	13.79	32.291	24.16	0.076	0.798	6.04	-0.80
30.	10.83	32.550	24.92	0.111	0.628	6.55	-1.42
40.	9.66	32.570	25.13	0.140	0.538	6.60	-1.85
50.	8.76	32.614	25.31	0.168	0.476	6.39	-2.23
60.	8.46	32.669	25.40	0.194	0.455	6.17	-2.54
70.	8.33	32.902	25.60	0.220	0.436	5.66	-2.78
80.	8.11	33.106	25.79	0.243	0.433	5.36	-3.00
90.	7.96	33.361	26.02	0.264	0.427	4.91	-3.23
100.	7.91	33.545	26.17	0.284	0.426	4.35	-3.44
125.	7.65	33.786	26.39	0.328	0.427	3.49	-3.92
150.	7.29	33.924	26.55	0.368	0.451	2.80	=88.0
175.	6.95	33.957	26.63	0.405	0.454	2.45	=88.0
200.	6.70	33.967	26.67	0.441	0.433	2.53	=88.0
201.	6.70	33.970	26.67	0.443	0.434	2.51	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D50	LAT LON	47-07.1N 125-34.1W	DATE TIME	28/ 9/80 1405(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.36	32.204	23.98	0.000	0.949	5.94	0.91
10.	13.92	32.267	24.12	0.039	0.777	5.92	0.23
20.	11.96	32.398	24.60	0.075	0.761	6.26	-0.52
30.	9.92	32.587	25.10	0.106	0.596	6.43	-1.06
40.	8.96	32.607	25.27	0.134	0.497	6.42	-1.44
50.	8.52	32.648	25.37	0.161	0.456	6.25	-1.75
60.	8.34	32.714	25.45	0.187	0.449	5.98	-2.02
70.	8.08	32.807	25.56	0.212	0.434	5.92	-2.26
80.	8.05	33.052	25.76	0.236	0.430	5.48	-2.50
90.	8.05	33.226	25.90	0.258	0.431	5.15	-2.72
100.	7.88	33.432	26.08	0.278	0.427	4.68	-2.97
125.	7.68	33.657	26.29	0.325	0.426	4.16	-3.51
150.	7.54	33.822	26.44	0.368	0.427	3.59	-4.00
175.	7.34	33.905	26.53	0.407	0.427	3.28	=88.0
193.	7.19	33.938	26.58	0.434	0.423	2.89	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D51	LAT LON	47-07.1N 125-23.7W	DATE TIME	28/ 9/80 1617(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.97	32.298	24.13	0.000	0.803	5.93	0.48
10.	13.97	32.298	24.13	0.038	0.805	5.92	-0.10
20.	13.96	32.298	24.13	0.076	0.787	5.92	-0.70
30.	12.38	32.444	24.56	0.113	0.706	6.22	-1.30
40.	10.21	32.576	25.05	0.144	0.589	6.60	-1.84
50.	8.95	32.606	25.28	0.173	0.484	6.44	-2.20
60.	8.43	32.680	25.41	0.199	0.439	6.18	-2.49
70.	8.27	32.828	25.55	0.225	0.430	5.84	-2.71
80.	8.06	33.181	25.86	0.248	0.430	5.15	-2.92
90.	8.02	33.341	25.99	0.269	0.443	4.57	-3.14
100.	7.99	33.438	26.07	0.289	0.451	4.12	-3.38
125.	7.78	33.734	26.33	0.335	0.458	3.23	-3.97
150.	7.38	33.884	26.51	0.376	0.545	2.22	=88.0
175.	7.24	33.921	26.56	0.415	0.608	1.75	=88.0
197.	7.17	33.935	26.58	0.449	0.599	1.70	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D52	LAT LON	47-07.0N 125-16.2W	DATE TIME	28/ 9/80 1737(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.72	32.274	24.16	0.000	1.203	5.96	0.13
10.	13.72	32.274	24.16	0.038	0.887	5.98	-0.52
20.	13.73	32.275	24.16	0.076	0.886	5.95	-1.27
30.	12.28	32.325	24.48	0.112	0.793	6.15	-1.93
40.	9.53	32.578	25.16	0.144	0.532	6.48	-2.53
50.	8.73	32.616	25.32	0.171	0.478	6.34	-2.87
60.	8.31	32.819	25.54	0.197	0.441	5.80	-3.18
70.	8.14	33.013	25.72	0.221	0.429	5.46	-3.41
80.	8.09	33.161	25.84	0.244	0.427	5.07	-3.63
90.	8.01	33.288	25.95	0.265	0.433	4.70	-3.82
100.	7.99	33.420	26.06	0.285	0.443	4.31	-3.99
125.	7.74	33.714	26.32	0.332	0.493	2.90	=88.0
150.	7.45	33.867	26.48	0.373	0.493	2.38	=88.0
175.	7.25	33.921	26.56	0.412	0.637	1.73	=88.0
194.	7.21	33.932	26.57	0.441	0.630	1.68	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.49	32.254	24.19	0.000	0.929	6.18	-1.96
10.	13.30	32.284	24.25	0.037	0.916	6.20	-2.66
20.	11.16	32.426	24.77	0.072	0.656	6.23	-3.45
30.	9.50	32.576	25.17	0.102	0.533	6.19	-3.87
40.	8.93	32.617	25.29	0.130	0.489	6.15	-4.13
50.	8.46	32.729	25.45	0.156	0.457	5.99	=88.0
60.	8.25	32.940	25.64	0.181	0.442	5.44	=88.0
70.	8.10	33.066	25.76	0.204	0.435	5.18	=88.0
80.	8.10	33.195	25.86	0.226	0.427	4.97	=88.0
90.	8.00	33.398	26.04	0.247	0.440	4.48	=88.0
100.	7.98	33.502	26.12	0.267	0.442	4.02	=88.0
125.	7.89	33.699	26.29	0.313	0.452	3.39	=88.0
150.	7.74	33.827	26.41	0.356	0.445	2.92	=88.0
175.	7.44	33.898	26.51	0.396	0.437	2.74	=88.0
198.	7.23	33.934	26.57	0.431	0.428	2.85	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.82	32.286	24.15	0.000	2.037	6.15	-2.93
10.	13.56	32.295	24.21	0.038	1.551	6.13	-3.76
20.	10.48	32.471	24.92	0.072	1.175	6.06	=88.0
30.	9.57	32.566	25.15	0.101	0.976	5.97	=88.0
40.	8.83	32.630	25.31	0.129	0.757	6.06	=88.0
50.	8.46	32.737	25.45	0.155	0.594	5.82	=88.0
60.	8.34	32.910	25.61	0.180	0.545	5.49	=88.0
70.	8.04	33.190	25.86	0.203	0.477	5.09	=88.0
80.	7.95	33.351	26.01	0.224	0.461	4.77	=88.0
90.	7.93	33.503	26.13	0.244	0.476	4.17	=88.0
100.	7.78	33.767	26.36	0.262	0.478	3.57	=88.0
125.	7.56	33.867	26.47	0.303	0.471	2.79	=88.0
150.	7.41	33.902	26.52	0.342	0.500	2.56	=88.0
175.	7.23	33.937	26.57	0.381	0.540	2.34	=88.0
194.	7.13	33.949	26.60	0.409	0.464	2.46	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.56	32.216	24.15	0.000	0.905	6.30	-3.12
10.	13.03	32.295	24.32	0.037	0.793	6.25	-3.82
20.	11.41	32.410	24.71	0.072	0.776	6.47	=88.0
30.	9.30	32.531	25.06	0.103	0.582	5.94	=88.0
40.	8.77	32.650	25.34	0.131	0.492	5.95	=88.0
50.	8.38	32.854	25.56	0.156	0.467	5.53	=88.0
60.	8.25	33.002	25.69	0.180	0.460	5.16	=88.0
70.	7.98	33.260	25.93	0.202	0.439	4.88	=88.0
80.	7.95	33.444	26.08	0.223	0.453	4.54	=88.0
90.	7.87	33.621	26.23	0.242	0.466	3.80	=88.0
100.	7.71	33.772	26.37	0.259	0.492	3.21	=88.0
125.	7.48	33.880	26.49	0.300	0.519	2.50	=88.0
150.	7.33	33.914	26.54	0.339	0.574	2.24	=88.0
175.	7.24	33.926	26.56	0.377	0.694	1.90	=88.0
192.	7.24	33.926	26.56	0.403	0.719	1.77	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.35	32.273	24.24	0.000	0.886	6.26	-2.23
10.	13.32	32.280	24.25	0.037	0.789	6.20	-3.91
20.	12.33	32.305	24.46	0.073	0.795	6.33	=88.0
30.	9.16	32.604	25.24	0.104	0.547	5.92	=88.0
40.	8.74	32.670	25.36	0.131	0.497	5.75	=88.0
50.	8.24	33.005	25.70	0.156	0.461	5.29	=88.0
60.	7.96	33.239	25.92	0.179	0.443	4.80	=88.0
70.	7.95	33.448	26.09	0.199	0.452	4.46	=88.0
80.	7.87	33.559	26.18	0.218	0.469	3.82	=88.0
90.	7.74	33.720	26.33	0.236	0.505	3.15	=88.0
100.	7.62	33.796	26.41	0.253	0.547	2.69	=88.0
125.	7.37	33.893	26.52	0.293	0.663	1.84	=88.0
150.	7.27	33.911	26.55	0.331	0.821	1.48	=88.0
151.	7.26	33.911	26.55	0.333	0.813	1.48	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	12.78	32.287	24.36	0.000	0.946	6.33	-2.70
10.	12.71	32.302	24.38	0.036	0.919	6.28	-3.77
20.	10.50	32.825	25.19	0.068	0.610	5.62	=88.0
30.	9.16	32.907	25.48	0.094	0.539	4.49	=88.0
40.	8.28	33.072	25.74	0.118	0.479	4.58	=88.0
50.	8.12	33.169	25.84	0.141	0.465	4.38	=88.0
60.	7.98	33.334	25.99	0.162	0.456	4.38	=88.0
70.	7.83	33.559	26.19	0.181	0.510	3.12	=88.0
80.	7.76	33.710	26.32	0.199	0.523	2.81	=88.0
90.	7.67	33.787	26.39	0.216	0.508	2.64	=88.0
100.	7.42	33.878	26.50	0.233	0.593	2.21	=88.0
125.	7.36	33.894	26.52	0.272	0.948	1.55	=88.0
130.	7.36	33.894	26.52	0.279	0.999	1.55	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	12.66	32.284	24.38	0.000	1.130	6.18	-2.99
10.	12.67	32.284	24.38	0.036	1.065	6.25	-3.85
20.	10.60	32.615	25.01	0.069	0.724	6.05	=88.0
30.	8.45	33.036	25.69	0.095	0.509	4.47	=88.0
40.	8.01	33.395	26.03	0.117	0.500	3.57	=88.0
50.	7.80	33.629	26.25	0.136	0.512	3.07	=88.0
60.	7.76	33.706	26.32	0.153	0.524	2.66	=88.0
70.	7.62	33.799	26.41	0.170	0.535	2.36	=88.0
80.	7.49	33.850	26.47	0.186	0.521	2.23	=88.0
90.	7.42	33.874	26.50	0.202	0.795	1.80	=88.0
100.	7.42	33.875	26.50	0.218	0.875	1.66	=88.0
102.	7.42	33.876	26.50	0.222	0.883	1.66	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	12.62	32.272	24.38	0.000	1.175	6.34	-3.16
10.	12.62	32.271	24.38	0.036	1.148	6.28	-3.93
20.	10.28	32.740	25.16	0.068	0.564	5.47	=88.0
30.	8.18	33.302	25.94	0.092	0.514	3.34	=88.0
40.	7.93	33.488	26.12	0.112	0.515	2.89	=88.0
50.	7.86	33.618	26.23	0.131	0.484	2.90	=88.0
60.	7.70	33.783	26.38	0.149	0.719	2.27	=88.0
70.	7.69	33.785	26.39	0.165	0.817	1.83	=88.0
73.	7.69	33.786	26.39	0.170	0.821	1.80	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	12.99	32.192	24.24	0.000	1.073	6.17	-3.14
10.	12.23	32.290	24.47	0.036	0.977	6.22	-4.03
20.	9.66	32.849	25.35	0.067	0.589	4.33	=88.0
30.	8.07	33.221	25.89	0.091	0.501	3.66	=88.0
40.	7.89	33.499	26.13	0.111	0.522	3.07	=88.0
47.	7.90	33.643	26.24	0.125	0.813	2.48	=88.0

INTERPLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.18	31.812	23.91	0.000	1.005	5.87	-3.27
10.	13.18	31.890	23.97	0.040	1.002	5.85	-4.01
20.	13.12	32.122	24.17	0.079	1.038	6.01	=88.0
30.	9.31	32.920	25.46	0.110	0.624	4.49	=88.0
40.	7.96	33.515	26.14	0.133	0.637	3.34	=88.0
49.	7.97	33.542	26.16	0.150	1.351	2.03	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.41	30.449	22.82	0.000	1.153	5.79	-0.69
10.	13.39	30.505	22.87	0.051	1.163	5.88	-1.58
20.	13.35	30.710	23.03	0.100	1.130	5.71	-3.08
30.	11.31	32.168	24.54	0.142	1.873	5.68	-4.08
35.	9.95	32.727	25.21	0.156	2.030	4.06	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.29	30.567	22.93	0.000	1.184	5.99	-0.50
10.	13.30	30.599	22.96	0.050	1.182	6.00	-1.62
30.	11.94	31.666	24.04	0.138	1.482	5.53	-4.03

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.29	31.864	23.93	0.000	1.063	5.96	-0.15
10.	13.29	31.868	23.94	0.040	1.078	6.07	-0.68
20.	13.27	31.904	23.97	0.080	1.039	5.94	-1.88
30.	10.18	32.616	25.08	0.114	0.755	4.59	-2.85
40.	8.48	33.306	25.89	0.140	=88.0	2.18	-3.67

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	12.76	32.279	24.36	0.000	1.195	6.19	0.27
10.	12.75	32.280	24.36	0.036	1.152	6.02	-0.58
20.	12.55	32.294	24.41	0.072	1.072	6.02	-1.65
30.	8.48	33.234	25.84	0.100	0.611	4.47	-2.43
40.	7.94	33.479	26.11	0.121	0.726	3.09	-2.87
50.	7.83	33.598	26.22	0.140	0.887	2.12	-3.50
58.	7.83	33.607	26.23	0.154	0.929	1.83	-3.94

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	12.56	32.304	24.41	0.000	1.220	5.91	0.14
10.	12.55	32.307	24.42	0.035	1.223	5.86	-0.76
20.	10.39	32.650	25.08	0.068	0.707	6.00	-1.91
30.	8.32	33.211	25.84	0.093	0.524	4.15	-2.41
40.	7.97	33.463	26.09	0.114	0.546	3.15	-2.86
50.	7.81	33.628	26.25	0.133	0.545	2.77	-3.17
60.	7.70	33.752	26.36	0.150	0.567	2.55	-3.47
70.	7.51	33.853	26.47	0.166	1.157	2.17	-3.78
80.	7.51	33.854	26.47	0.182	1.533	1.87	=88.0
90.	7.50	33.855	26.47	0.198	1.560	1.78	=88.0
100.	7.51	33.854	26.47	0.214	1.812	1.74	=88.0
104.	7.51	33.854	26.47	0.220	=88.0	1.73	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-13.2N	DATE	29/ 9/80		
STATION		D67	LON	124-48.8W	TIME	1639(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE	
M	C	0/00	M2/S2	/M	/M	ML/L	LOG(uW/CM2)	
0.	14.37	32.264	24.02	0.000	0.716	5.93	-0.03	
10.	14.36	32.265	24.02	0.039	0.717	5.92	-0.53	
20.	11.55	32.432	24.70	0.075	0.793	6.18	-1.09	
30.	9.38	32.598	25.20	0.105	0.576	5.83	-1.71	
40.	8.78	32.716	25.39	0.133	0.509	5.54	-2.01	
50.	8.31	32.937	25.63	0.158	0.497	5.23	-2.27	
60.	8.12	33.157	25.83	0.180	0.499	4.55	-2.57	
70.	7.88	33.321	25.99	0.202	0.491	4.39	-2.83	
80.	7.88	33.439	26.09	0.222	0.485	4.23	-3.07	
90.	7.87	33.581	26.20	0.241	0.523	3.58	-3.32	
100.	7.79	33.690	26.30	0.259	0.549	2.83	-3.59	
125.	7.36	33.893	26.52	0.300	0.678	1.78	=88.0	
149.	7.27	33.908	26.54	0.337	1.014	1.47	=88.0	

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-13.7N	DATE	29/ 9/80		
STATION		D68	LON	124-57.6W	TIME	1846(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE	
M	C	0/00	M2/S2	/M	/M	ML/L	LOG(uW/CM2)	
0.	14.69	32.251	23.94	0.000	0.704	5.93	-0.86	
10.	14.64	32.263	23.96	0.040	0.710	5.82	-1.38	
20.	13.94	32.103	23.99	0.080	0.688	6.07	-1.86	
30.	10.41	32.542	24.99	0.114	0.647	6.37	-2.41	
40.	9.48	32.590	25.18	0.143	0.552	6.59	-2.85	
50.	9.01	32.615	25.27	0.171	0.527	6.52	-3.18	
60.	8.47	32.643	25.38	0.198	0.485	6.41	-3.48	
70.	8.24	32.770	25.51	0.224	0.474	6.13	-3.67	
80.	8.21	32.971	25.67	0.248	0.477	5.66	-3.84	
90.	8.01	33.250	25.92	0.270	0.482	4.74	-4.07	
100.	7.91	33.474	26.11	0.290	0.474	4.38	=88.0	
125.	7.50	33.843	26.46	0.335	0.679	2.17	=88.0	
150.	7.35	33.914	26.54	0.374	0.557	2.15	=88.0	
175.	7.25	33.931	26.56	0.412	0.630	2.15	=88.0	
200.	7.11	33.944	26.59	0.450	0.619	1.84	=88.0	
203.	7.11	33.946	26.60	0.454	0.617	1.80	=88.0	

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-20.1N	DATE	29/ 9/80		
STATION		D69	LON	124-25.9W	TIME	2309(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE	
M	C	0/00	M2/S2	/M	/M	ML/L	LOG(uW/CM2)	
0.	13.33	30.619	22.96	0.000	=88.0	5.87	-2.80	
10.	13.25	31.083	23.34	0.048	1.104	5.76	-3.98	
20.	13.18	31.516	23.69	0.092	1.018	5.67	=88.0	
30.	12.98	31.741	23.90	0.133	1.106	5.69	=88.0	
31.	12.80	31.763	23.95	0.137	1.215	5.71	=88.0	

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-19.4N	DATE	30/ 9/80		
STATION		D70	LON	124-32.5W	TIME	101(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE	
M	C	0/00	M2/S2	/M	/M	ML/L	LOG(uW/CM2)	
0.	13.13	31.913	24.00	0.000	=88.0	5.82	-3.01	
10.	13.02	31.999	24.09	0.039	0.960	5.79	-3.86	
20.	12.72	32.248	24.34	0.076	0.981	5.88	=88.0	
30.	8.21	33.292	25.92	0.105	0.566	4.24	=88.0	
40.	7.87	33.495	26.13	0.125	0.528	3.56	=88.0	
50.	7.79	33.595	26.22	0.144	1.023	2.39	=88.0	
60.	7.79	33.596	26.22	0.162	1.343	2.05	=88.0	
63.	7.79	33.596	26.22	0.167	1.513	2.03	=88.0	

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-18.7N	DATE	30/ 9/80		
STATION		D71	LON	124-38.8W	TIME	233(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE	
M	C	0/00	M2/S2	/M	/M	ML/L	LOG(uW/CM2)	
0.	13.10	31.959	24.04	0.000	1.026	5.82	-2.85	
10.	12.96	32.039	24.13	0.039	0.987	5.76	-3.98	
20.	11.02	32.538	24.88	0.073	0.820	5.85	=88.0	
30.	8.30	33.133	25.79	0.100	0.518	4.24	=88.0	
40.	8.05	33.381	26.02	0.121	0.474	3.90	=88.0	
50.	7.98	33.503	26.12	0.141	0.452	3.95	=88.0	
60.	7.81	33.711	26.31	0.159	0.460	3.65	=88.0	
70.	7.60	33.829	26.43	0.176	0.933	2.31	=88.0	
80.	7.60	33.830	26.44	0.192	1.091	1.97	=88.0	
90.	7.60	33.830	26.43	0.208	1.178	1.80	=88.0	
97.	7.60	33.830	26.43	0.220	1.344	1.75	=88.0	

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-18.0N	DATE	30/ 9/80		
STATION		D72	LON	124-45.4W	TIME	508(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE	
M	C	0/00	M2/S2	/M	/M	ML/L	LOG(uW/CM2)	
0.	14.41	32.225	23.98	0.000	0.619	5.96	-2.90	
10.	14.28	32.242	24.02	0.039	0.623	5.99	-3.80	
20.	10.85	32.551	24.92	0.074	0.622	6.23	-4.15	
30.	8.88	32.727	25.38	0.103	0.506	5.43	=88.0	
40.	8.49	32.795	25.49	0.128	0.471	5.19	=88.0	
50.	8.25	32.999	25.69	0.153	0.455	4.99	=88.0	
60.	7.96	33.298	25.97	0.175	0.450	4.44	=88.0	
70.	7.90	33.377	26.04	0.195	0.449	4.22	=88.0	
80.	7.86	33.505	26.14	0.215	0.460	3.87	=88.0	
90.	7.80	33.644	26.26	0.233	0.534	3.05	=88.0	
100.	7.78	33.722	26.32	0.251	0.610	2.50	=88.0	
125.	7.53	33.845	26.46	0.292	0.529	2.29	=88.0	
150.	7.38	33.884	26.51	0.332	0.653	1.78	=88.0	
175.	7.33	33.896	26.53	0.371	0.818	1.52	=88.0	
200.	7.31	33.904	26.53	0.410	0.860	1.43	=88.0	
250.	7.31	33.903	26.53	0.487	0.902	1.43	=88.0	
269.	7.30	33.909	26.54	0.517	0.981	1.40	=88.0	

INTERPOLATED AND COMPUTED VALUES							
CRUISE STATION	WS009 D73	LAT LON	47-20.7N 124-47.2W	DATE TIME	30/ 9/80 649(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	14.48	32.226	23.97	0.000	0.625	5.95	-3.01
10.	14.46	32.250	23.99	0.040	0.619	5.94	-3.57
20.	10.99	32.445	24.81	0.075	0.651	6.36	-4.05
30.	9.48	32.591	25.18	0.105	0.547	5.92	=88.0
40.	8.68	32.723	25.41	0.132	0.482	5.65	=88.0
50.	8.38	32.858	25.56	0.157	0.463	5.40	=88.0
60.	8.15	33.095	25.78	0.181	0.453	4.90	=88.0
70.	7.95	33.327	25.99	0.202	0.451	4.49	=88.0
80.	7.89	33.426	26.08	0.222	0.450	4.12	=88.0
90.	7.80	33.642	26.26	0.241	0.523	3.40	=88.0
100.	7.69	33.783	26.39	0.259	0.746	2.24	=88.0
125.	7.58	33.830	26.44	0.300	0.838	1.65	=88.0
150.	7.45	33.868	26.49	0.340	0.920	1.37	=88.0
175.	7.39	33.885	26.51	0.380	0.890	1.35	=88.0
200.	7.34	33.892	26.52	0.419	0.928	1.38	=88.0
250.	7.29	33.908	26.54	0.496	0.792	1.42	=88.0
300.	7.09	33.941	26.59	0.573	0.639	1.70	=88.0
350.	6.55	33.998	26.71	0.645	0.554	1.72	=88.0
400.	6.29	34.014	26.76	0.714	0.579	1.70	=88.0
450.	6.02	34.033	26.81	0.781	0.562	1.46	=88.0
500.	5.66	34.063	26.88	0.845	0.612	1.21	=88.0
600.	4.87	34.151	27.04	0.962	0.616	0.70	=88.0
700.	4.52	34.211	27.13	1.068	0.569	0.48	=88.0
760.	4.38	34.236	27.16	1.129	0.679	0.44	=88.0

INTERPOLATED AND COMPUTED VALUES							
CRUISE STATION	WS009 D74	LAT LON	47-21.2N 124-49.3W	DATE TIME	30/ 9/80 755(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	14.73	32.239	23.93	0.000	0.604	5.89	-0.41
10.	14.71	32.250	23.94	0.040	0.609	5.87	-0.87
20.	12.10	32.377	24.56	0.077	0.660	6.18	-1.40
30.	9.65	32.576	25.14	0.108	0.544	5.77	-1.98
40.	8.74	32.724	25.40	0.136	0.488	5.51	-2.37
50.	8.35	32.875	25.58	0.161	0.458	5.25	-2.67
60.	8.02	33.153	25.84	0.184	0.438	5.03	-2.92
70.	7.98	33.291	25.96	0.205	0.440	4.60	-3.15
80.	7.94	33.442	26.08	0.226	0.437	4.16	-3.39
90.	7.93	33.530	26.15	0.245	0.444	3.93	-3.59
100.	7.89	33.680	26.28	0.263	0.447	3.42	-3.85
101.	7.87	33.697	26.29	0.265	0.449	3.40	-3.86

INTERPOLATED AND COMPUTED VALUES							
CRUISE STATION	WS009 D74	LAT LON	47-21.2N 124-49.3W	DATE TIME	30/ 9/80 755(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	14.73	32.239	23.93	0.000	0.604	5.89	-0.41
10.	14.71	32.250	23.94	0.040	0.609	5.87	-0.87
20.	12.10	32.377	24.56	0.077	0.660	6.18	-1.40
30.	9.65	32.576	25.14	0.108	0.544	5.77	-1.98
40.	8.74	32.724	25.40	0.136	0.488	5.51	-2.37
50.	8.35	32.875	25.58	0.161	0.458	5.25	-2.67
60.	8.02	33.153	25.84	0.184	0.438	5.03	-2.92
70.	7.98	33.291	25.96	0.205	0.440	4.60	-3.15
80.	7.94	33.442	26.08	0.226	0.437	4.16	-3.39
90.	7.93	33.530	26.15	0.245	0.444	3.93	-3.59
100.	7.89	33.680	26.28	0.263	0.447	3.42	-3.85
125.	7.62	33.805	26.41	0.306	0.640	2.30	=88.0
150.	7.32	33.897	26.53	0.346	0.708	1.57	=88.0
175.	7.25	33.915	26.55	0.384	0.744	1.41	=88.0
200.	7.22	33.925	26.56	0.422	0.655	1.61	=88.0
250.	7.13	33.949	26.59	0.497	0.565	1.72	=88.0
300.	6.82	33.979	26.66	0.571	0.507	2.05	=88.0
350.	6.45	34.006	26.73	0.641	0.475	1.94	=88.0
400.	6.06	34.032	26.80	0.709	0.475	1.63	=88.0
450.	5.83	34.047	26.84	0.773	0.452	1.44	=88.0
500.	5.48	34.058	26.90	0.836	0.498	1.18	=88.0
600.	4.82	34.125	27.02	0.953	0.419	0.75	=88.0
700.	4.54	34.206	27.12	1.060	0.482	0.48	=88.0
800.	4.18	34.274	27.21	1.159	0.516	0.38	=88.0
900.	3.82	34.338	27.30	1.249	0.522	0.35	=88.0
1000.	3.56	34.350	27.36	1.333	0.529	0.36	=88.0
1087.	3.38	34.413	27.40	1.401	0.568	0.40	=88.0

INTERPOLATED AND COMPUTED VALUES							
CRUISE STATION	WS009 D75	LAT LON	47-21.9N 124-51.9W	DATE TIME	30/ 9/80 1031(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	14.67	32.214	23.92	0.000	0.628	5.91	0.87
10.	14.63	32.226	23.94	0.040	0.638	5.83	0.20
20.	14.53	32.291	24.01	0.080	0.620	5.94	-0.24
30.	10.18	32.532	25.02	0.114	0.595	6.26	-0.82
40.	8.85	32.710	25.37	0.142	0.497	5.53	-1.25
50.	8.43	32.857	25.55	0.168	0.469	5.35	-1.59
60.	8.14	32.970	25.68	0.192	0.440	5.14	-1.85
70.	7.96	33.180	25.87	0.214	0.433	5.02	-2.14
80.	8.06	33.390	26.02	0.235	0.431	4.37	-2.36
90.	7.93	33.545	26.16	0.255	0.439	4.03	-2.63
100.	7.91	33.676	26.27	0.273	0.441	3.51	-2.85
125.	7.72	33.817	26.41	0.316	0.451	3.00	-3.42
150.	7.56	33.870	26.47	0.357	0.461	2.55	-3.96
175.	7.27	33.912	26.55	0.396	0.548	1.88	=88.0
200.	7.15	33.939	26.58	0.434	0.585	1.66	=88.0
250.	7.07	33.955	26.61	0.508	0.562	1.72	=88.0
300.	6.70	33.990	26.69	0.581	0.449	2.24	=88.0
350.	6.24	34.015	26.77	0.650	0.467	1.91	=88.0
400.	5.99	34.035	26.81	0.716	0.500	1.57	=88.0
450.	5.75	34.048	26.85	0.780	0.501	1.40	=88.0
500.	5.23	34.056	26.92	0.842	0.432	1.21	=88.0
600.	4.80	34.123	27.02	0.958	0.418	0.74	=88.0
700.	4.54	34.207	27.12	1.065	0.479	0.50	=88.0
800.	4.23	34.264	27.20	1.164	0.469	0.39	=88.0
900.	3.87	34.334	27.29	1.255	0.465	0.34	=88.0
1000.	3.57	34.383	27.36	1.339	0.463	0.35	=88.0
1100.	3.31	34.422	27.42	1.417	0.503	0.40	=88.0
1200.	3.07	34.460	27.47	1.490	0.537	0.51	=88.0
1212.	3.03	34.464	27.48	1.499	0.583	0.53	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-22.5N DATE 30/ 9/80
STATION D76 LON 124-54.2W TIME 1140(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HIT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.91	23.631	17.29	0.000	0.877	=88.	-1.36
10.	14.71	23.669	17.36	0.104	0.723	=88.	0.64
20.	14.55	23.670	17.39	0.207	0.662	=88.	0.16
30.	11.09	23.998	18.25	0.306	0.629	=88.	-0.37
40.	9.23	23.873	18.43	0.400	0.520	=88.	-0.81
50.	8.46	23.775	18.46	0.493	0.484	=88.	-1.13
60.	8.19	23.798	18.51	0.506	0.455	=88.	-1.43
70.	8.49	23.755	18.49	0.678	0.431	=88.	-1.72
80.	8.05	23.817	18.54	0.770	0.433	=88.	-2.00
90.	8.00	23.816	18.55	0.862	0.433	=88.	-2.25
100.	7.96	23.828	18.56	0.954	0.441	=88.	-2.49
125.	7.75	23.860	18.61	1.183	0.445	=88.	-3.06
150.	7.54	23.897	18.67	1.411	0.491	=88.	-3.67
175.	7.30	23.903	18.71	1.637	0.519	=88.	=88.0
200.	7.18	23.903	18.71	1.863	0.584	=88.	=88.0
250.	7.01	23.939	18.76	2.314	0.551	=88.	=88.0
300.	6.51	23.990	18.86	2.761	0.428	=88.	=88.0
350.	6.23	24.090	18.89	3.205	0.454	=88.	=88.0
400.	6.00	24.052	18.96	3.646	0.457	=88.	=88.0
450.	5.72	24.058	18.99	4.085	0.460	=88.	=88.0
500.	5.36	24.079	19.04	4.522	0.478	=88.	=88.0
600.	4.86	24.093	19.10	5.389	0.460	=88.	=88.0
700.	4.44	24.128	19.16	6.249	0.448	=88.	=88.0
800.	4.17	24.138	19.19	7.104	0.451	=88.	=88.0
900.	3.82	24.169	19.24	7.954	0.449	=88.	=88.0
1000.	3.53	24.186	19.27	8.799	0.461	=88.	=88.0
1100.	3.30	24.198	19.30	9.639	0.505	=88.	=88.0
1200.	3.10	24.248	19.35	10.4	0.530	=88.	=88.0
1279.	2.90	21.418	17.11	11.2	0.551	=88.	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-22.6N DATE 30/ 9/80
STATION D77 LON 125-00.8W TIME 1414(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HIT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.11	32.225	23.33	0.000	0.622	5.68	0.59
10.	14.92	32.267	23.31	0.041	0.617	5.74	0.04
20.	14.80	32.272	23.34	0.081	0.619	5.70	0.04
30.	10.65	32.553	24.95	0.116	0.603	6.56	-0.34
40.	9.54	32.585	25.17	0.145	0.529	6.75	-0.73
50.	9.09	32.593	25.24	0.173	0.496	6.56	-1.11
60.	8.66	32.611	25.32	0.200	0.462	6.44	-1.41
70.	8.32	32.708	25.45	0.227	0.441	6.11	-1.68
80.	8.19	32.915	25.63	0.251	0.436	5.72	-1.91
90.	8.12	33.108	25.79	0.275	0.433	5.05	-2.15
100.	8.11	33.275	25.92	0.296	0.439	4.60	-2.36
125.	7.81	33.720	26.32	0.345	0.456	3.26	-2.95
150.	7.59	33.851	26.45	0.387	0.450	2.64	-3.59
175.	7.37	33.895	26.52	0.426	0.438	2.98	-4.07
200.	7.20	33.932	26.57	0.465	0.437	2.72	=88.0
250.	6.75	33.951	26.65	0.539	0.427	2.80	=88.0
300.	6.36	33.979	26.72	0.609	0.422	2.33	=88.0
350.	6.12	34.021	26.79	0.677	0.459	1.80	=88.0
400.	5.69	34.026	26.84	0.741	0.453	1.51	=88.0
450.	5.46	34.043	26.88	0.804	0.426	1.29	=88.0
500.	5.21	34.063	26.93	0.865	0.439	1.07	=88.0
600.	4.92	34.123	27.01	0.981	0.427	0.73	=88.0
700.	4.44	34.201	27.13	1.088	0.419	0.46	=88.0
800.	4.11	34.273	27.22	1.186	0.447	0.36	=88.0
900.	3.81	34.333	27.30	1.276	0.458	0.35	=88.0
1000.	3.62	34.369	27.34	1.360	0.440	0.35	=88.0
1100.	3.22	34.429	27.43	1.438	0.473	0.45	=88.0
1200.	3.00	34.462	27.48	1.510	0.492	0.55	=88.0
1300.	2.83	34.486	27.51	1.578	0.501	0.66	=88.0
1333.	2.76	34.495	27.53	1.600	0.524	0.73	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-21.5N DATE 30/ 9/80
STATION D78 LON 125-07.4W TIME 2347(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.09	32.245	23.85	0.000	0.612	6.01	-2.92
10.	15.00	32.244	23.87	0.041	0.620	6.08	-3.68
20.	14.74	32.274	23.95	0.081	0.632	6.05	-4.13
30.	12.55	32.420	24.50	0.118	0.708	6.58	=88.0
40.	10.54	32.558	24.98	0.151	0.598	7.23	=88.0
50.	9.10	32.614	25.26	0.179	0.480	6.79	=88.0
60.	8.82	32.612	25.30	0.207	0.460	6.58	=88.0
70.	8.51	32.640	25.37	0.233	0.445	6.34	=88.0
80.	8.31	32.789	25.52	0.259	0.433	6.11	=88.0
90.	8.14	33.082	25.77	0.283	0.437	5.06	=88.0
100.	8.06	33.256	25.92	0.305	0.437	4.63	=88.0
125.	7.83	33.703	26.30	0.353	0.457	3.09	=88.0
150.	7.42	33.882	26.50	0.395	0.501	2.27	=88.0
175.	7.21	33.925	26.56	0.433	0.530	2.04	=88.0
200.	7.09	33.941	26.59	0.471	0.562	1.70	=88.0
250.	6.94	33.964	26.63	0.545	0.552	1.75	=88.0
300.	6.75	33.980	26.67	0.617	0.533	1.83	=88.0
350.	6.44	33.988	26.73	0.687	0.489	1.94	=88.0
400.	6.13	34.014	26.78	0.755	0.455	1.79	=88.0
450.	5.57	34.017	26.85	0.820	0.421	1.48	=88.0
500.	5.27	34.046	26.91	0.882	0.435	1.16	=88.0
600.	4.90	34.134	27.02	0.999	0.424	0.71	=88.0
700.	4.21	34.161	27.12	1.106	0.412	0.54	=88.0
800.	4.16	34.269	27.21	1.204	0.431	0.36	=88.0
900.	3.85	34.330	27.29	1.295	0.430	0.34	=88.0
1000.	3.52	34.383	27.37	1.379	0.449	0.38	=88.0
1100.	3.31	34.418	27.41	1.457	0.449	0.43	=88.0
1200.	3.06	34.455	27.47	1.530	0.461	0.54	=88.0
1300.	2.86	34.482	27.51	1.599	0.465	0.66	=88.0
1400.	2.72	34.500	27.53	1.665	0.485	0.75	=88.0
1500.	2.57	34.519	27.56	1.729	0.479	0.87	=88.0
1570.	2.44	34.535	27.59	1.772	0.501	0.99	=88.0

2171
C.S.H.

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-19.1N DATE 1/10/80
STATION D79 LON 125-12.8W TIME 140(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.82	32.259	23.92	0.000	0.690	6.15	-2.85
10.	14.78	32.265	23.93	0.040	0.631	6.11	-3.77
20.	14.73	32.272	23.95	0.080	0.633	6.04	=88.0
30.	10.35	32.581	25.03	0.115	0.604	7.17	=88.0
40.	9.51	32.590	25.17	0.144	0.528	7.16	=88.0
50.	8.79	32.630	25.32	0.171	0.453	6.66	=88.0
60.	8.47	32.668	25.40	0.198	0.437	6.41	=88.0
70.	8.35	32.759	25.49	0.224	0.435	6.16	=88.0
80.	8.22	32.884	25.60	0.248	0.432	5.60	=88.0
90.	8.06	33.216	25.89	0.271	0.441	5.25	=88.0
100.	7.93	33.507	26.13	0.291	0.444	4.26	=88.0
125.	7.72	33.653	26.28	0.338	0.429	3.74	=88.0
150.	7.60	33.825	26.43	0.380	0.466	2.90	=88.0
175.	7.26	33.902	26.54	0.420	0.427	3.33	=88.0
200.	6.88	33.961	26.64	0.457	0.465	2.50	=88.0
250.	6.79	33.982	26.67	0.529	0.515	2.02	=88.0
300.	6.60	33.995	26.70	0.600	0.512	1.93	=88.0
350.	6.32	33.994	26.74	0.669	0.453	2.01	=88.0
400.	6.07	34.016	26.79	0.736	0.464	1.73	=88.0
450.	5.75	34.024	26.83	0.802	0.437	1.46	=88.0
500.	5.56	34.058	26.89	0.865	0.446	1.22	=88.0
600.	4.79	34.152	27.05	0.981	0.423	0.62	=88.0
700.	4.28	34.168	27.12	1.087	0.412	0.50	=88.0
800.	3.92	34.255	27.22	1.185	0.415	0.38	=88.0
900.	3.88	34.325	27.28	1.275	0.438	0.35	=88.0
1000.	3.58	34.375	27.35	1.360	0.442	0.37	=88.0
1100.	3.31	34.415	27.41	1.438	0.460	0.43	=88.0
1200.	3.06	34.456	27.47	1.512	0.464	0.54	=88.0
1300.	2.84	34.483	27.51	1.581	0.473	0.68	=88.0
1400.	2.69	34.504	27.54	1.647	0.481	0.79	=88.0
1500.	2.49	34.529	27.58	1.709	0.472	0.94	=88.0
1539.	2.47	34.531	27.58	1.732	0.474	0.96	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D80	LAT LON	47-15.9N 125-26.0W	DATE TIME	1/10/80 422(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.73	32.257	23.94	0.000	0.6657	6.18	-3.05
10.	14.65	32.257	23.96	0.040	0.682	6.22	-3.74
20.	13.86	32.291	24.15	0.079	0.724	6.17	=88.0
30.	10.53	32.496	24.93	0.113	0.634	6.59	=88.0
40.	8.99	32.532	25.26	0.142	0.507	6.66	=88.0
50.	8.48	32.625	25.36	0.169	0.450	6.38	=88.0
60.	8.16	32.722	25.49	0.195	0.436	6.26	=88.0
70.	8.12	32.930	25.65	0.219	0.428	5.79	=88.0
80.	8.08	33.076	25.77	0.242	0.429	5.32	=88.0
90.	7.84	33.279	25.97	0.264	0.422	4.82	=88.0
100.	7.68	33.412	26.10	0.284	0.422	4.56	=88.0
125.	7.62	33.634	26.25	0.331	0.423	4.07	=88.0
150.	7.67	33.766	26.38	0.375	0.425	3.57	=88.0
175.	7.45	33.856	26.48	0.416	0.423	3.45	=88.0
200.	7.20	33.913	26.56	0.455	0.421	3.02	=88.0
250.	6.63	33.952	26.67	0.529	0.419	2.87	=88.0
300.	6.21	33.983	26.74	0.598	0.416	2.24	=88.0
350.	5.37	34.033	26.83	0.664	0.450	1.50	=88.0
400.	5.55	34.050	26.88	0.727	0.457	1.25	=88.0
450.	5.23	34.059	26.93	0.788	0.433	1.04	=88.0
500.	4.98	34.113	27.00	0.846	0.441	0.81	=88.0
600.	4.55	34.173	27.09	0.955	0.413	0.52	=88.0
700.	4.34	34.239	27.17	1.056	0.421	0.38	=88.0
800.	4.05	34.295	27.24	1.151	0.411	0.31	=88.0
900.	3.76	34.340	27.31	1.239	0.408	0.30	=88.0
1000.	3.52	34.392	27.37	1.321	0.411	0.35	=88.0
1100.	3.28	34.424	27.42	1.398	0.412	0.41	=88.0
1200.	3.07	34.454	27.46	1.471	0.413	0.50	=88.0
1300.	2.94	34.472	27.49	1.541	0.416	0.57	=88.0
1400.	2.69	34.505	27.54	1.608	0.431	0.76	=88.0
1500.	2.5	34.527	27.57	1.670	0.441	0.92	=88.0
1600.	2.35	34.545	27.60	1.730	0.443	1.09	=88.0
1692.	2.19	34.565	27.63	1.782	0.458	1.26	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D81	LAT LON	47-20.0N 125-45.0W	DATE TIME	1/10/80 752(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.30	32.267	23.82	0.000	0.761	5.86	-0.34
10.	15.31	32.269	23.82	0.041	0.567	5.85	-0.78
20.	15.30	32.283	23.84	0.082	0.550	5.81	-1.15
30.	11.84	32.557	24.75	0.119	0.654	6.74	-1.57
40.	10.44	32.597	25.03	0.150	0.592	7.06	-2.10
50.	9.53	32.609	25.19	0.179	0.522	6.79	-2.48
60.	9.00	32.610	25.27	0.206	0.477	6.69	-2.78
70.	8.63	32.617	25.33	0.233	0.446	6.43	-3.01
80.	8.46	32.656	25.39	0.260	0.439	6.21	-3.22
90.	8.28	32.838	25.56	0.285	0.428	5.94	-3.42
100.	8.08	33.107	25.80	0.309	0.426	5.27	-3.61
125.	7.83	33.541	26.18	0.360	0.436	4.02	-4.09
150.	7.63	33.803	26.41	0.405	0.429	3.57	=88.0
175.	7.41	33.914	26.53	0.445	0.426	2.84	=88.0
200.	7.12	33.944	26.59	0.483	0.428	2.73	=88.0
250.	6.56	33.978	26.69	0.555	0.432	2.33	=88.0
300.	6.23	33.998	26.75	0.624	0.423	2.06	=88.0
350.	5.92	34.020	26.81	0.690	0.434	1.66	=88.0
400.	5.56	34.050	26.88	0.753	0.421	1.31	=88.0
450.	5.33	34.084	26.93	0.814	0.424	1.03	=88.0
500.	5.04	34.112	26.99	0.872	0.423	0.83	=88.0
600.	4.59	34.183	27.10	0.981	0.417	0.55	=88.0
700.	4.20	34.228	27.17	1.081	0.410	0.44	=88.0
800.	3.77	34.275	27.25	1.175	0.408	0.38	=88.0
900.	3.59	34.329	27.32	1.262	0.407	0.36	=88.0
1000.	3.45	34.384	27.37	1.343	0.407	0.38	=88.0
1100.	3.31	34.420	27.42	1.421	0.412	0.44	=88.0
1200.	3.11	34.453	27.46	1.495	0.413	0.53	=88.0
1300.	2.91	34.482	27.50	1.564	0.419	0.66	=88.0
1400.	2.71	34.506	27.54	1.630	0.420	0.79	=88.0
1500.	2.50	34.531	27.58	1.693	0.424	0.96	=88.0
1600.	2.32	34.552	27.61	1.752	0.425	1.14	=88.0
1700.	2.17	34.568	27.63	1.808	0.430	1.32	=88.0
1728.	2.12	34.575	27.64	1.824	0.436	1.37	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D81A	LAT 47-20.0N LON 125-45.0W	DATE 1/10/80 TIME 953(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
				0.	15.31	32.268	23.82	0.000	0.544	5.89	1.04
				10.	15.31	32.269	23.82	0.041	0.544	5.77	0.31
				20.	15.31	32.272	23.83	0.082	0.542	5.74	-0.17
				30.	12.35	32.527	24.63	0.120	0.633	6.50	-0.57
				40.	10.70	32.593	24.98	0.151	0.620	7.27	-1.08
				50.	9.63	32.609	25.17	0.181	0.535	7.01	-1.51
				60.	9.02	32.609	25.27	0.208	0.486	6.75	-1.87
				70.	8.59	32.623	25.34	0.235	0.445	6.52	-2.17
				80.	8.43	32.702	25.43	0.262	0.437	6.17	-2.40
				90.	8.26	32.889	25.60	0.287	0.428	5.86	-2.60
				100.	8.06	33.137	25.83	0.310	0.427	5.24	-2.80
				125.	7.71	33.619	26.25	0.360	0.427	4.02	-3.29
				150.	7.59	33.867	26.47	0.403	0.427	3.09	-3.78
				175.	7.32	33.931	26.55	0.442	0.427	2.73	-88.0
				193.	7.09	33.950	26.60	0.469	0.426	2.71	-88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D82	LAT 47-20.0N LON 125-34.0W	DATE 1/10/80 TIME 1112(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
				0.	14.90	32.267	23.91	0.000	0.608	5.69	1.01
				10.	14.90	32.265	23.91	0.040	0.611	5.65	0.63
				20.	14.49	32.301	24.02	0.080	0.614	5.71	0.14
				30.	10.93	32.587	24.93	0.115	0.602	6.75	-0.40
				40.	9.76	32.638	25.17	0.144	0.510	6.77	-0.81
				50.	9.11	32.635	25.27	0.172	0.476	6.42	-1.18
				60.	8.54	32.635	25.36	0.199	0.453	6.18	-1.48
				70.	8.38	32.721	25.45	0.225	0.438	6.01	-1.72
				80.	8.18	32.930	25.64	0.250	0.433	5.56	-1.99
				90.	8.12	33.155	25.83	0.273	0.430	5.17	-2.19
				100.	8.06	33.400	26.03	0.294	0.439	4.24	-2.45
				125.	7.77	33.720	26.32	0.341	0.463	2.94	-3.10
				150.	7.46	33.873	26.49	0.382	0.486	2.30	-3.77
				175.	7.26	33.918	26.55	0.421	0.593	1.68	-88.0
				195.	7.23	33.925	26.56	0.451	0.549	1.93	-88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D83	LAT 47-15.9N LON 125-25.9W	DATE 1/10/80 TIME 1236(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
				0.	14.37	32.218	23.98	0.000	0.627	5.69	1.73
				10.	13.96	32.251	24.10	0.039	0.642	5.78	0.67
				20.	10.80	32.534	24.91	0.074	0.636	6.40	0.09
				30.	9.56	32.590	25.17	0.103	0.569	6.29	-0.49
				40.	8.77	32.618	25.31	0.131	0.499	6.13	-0.85
				50.	8.66	32.667	25.37	0.157	0.470	5.78	-1.23
				60.	8.48	32.721	25.44	0.183	0.456	5.58	-1.54
				70.	8.20	32.858	25.59	0.208	0.436	5.34	-1.83
				80.	7.89	33.085	25.81	0.232	0.425	5.25	-2.07
				90.	7.84	33.304	25.99	0.253	0.425	4.71	-2.31
				100.	7.67	33.407	26.09	0.273	0.424	4.46	-2.53
				125.	7.47	33.692	26.35	0.319	0.425	4.05	-3.04
				150.	7.43	33.860	26.48	0.360	0.427	3.30	-3.55
				175.	7.17	33.910	26.56	0.399	0.424	3.14	-4.03
				196.	7.00	33.928	26.60	0.431	0.421	2.94	-88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D84	LAT 47-16.3N LON 125-18.7W	DATE 1/10/80 TIME 1408(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
				0.	14.56	32.233	23.96	0.000	0.625	5.84	1.04
				10.	14.35	32.230	24.00	0.040	0.613	5.76	0.69
				20.	11.41	32.459	24.75	0.075	0.624	6.32	0.08
				30.	9.46	32.576	25.17	0.106	0.572	6.33	-0.40
				40.	8.79	32.609	25.30	0.133	0.497	6.41	-0.84
				50.	8.45	32.629	25.37	0.160	0.455	6.15	-1.17
				60.	8.20	32.684	25.43	0.186	0.446	5.94	-1.38
				70.	8.18	32.760	25.51	0.211	0.440	5.80	-1.66
				80.	7.91	32.907	25.67	0.236	0.431	5.65	-1.89
				90.	7.90	33.246	25.93	0.258	0.431	4.98	-2.12
				100.	7.82	33.327	26.01	0.279	0.427	4.46	-2.36
				125.	7.48	33.640	26.30	0.326	0.426	4.20	-2.89
				150.	7.46	33.796	26.43	0.369	0.427	3.67	-3.40
				175.	7.29	33.901	26.53	0.408	0.425	3.15	-3.90
				194.	7.05	33.925	26.59	0.438	0.425	3.01	-88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D85	LAT 47-19.1N LON 125-12.7W	DATE 1/10/80 TIME 1525(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
				0.	15.09	32.241	23.85	0.000	0.622	5.65	1.16
				10.	15.02	32.242	23.87	0.041	0.626	5.70	0.52
				20.	14.31	32.243	23.91	0.081	0.650	5.61	0.06
				30.	10.10	32.557	25.05	0.116	0.601	6.31	-0.50
				40.	9.25	32.630	25.25	0.145	0.504	6.57	-0.94
				50.	8.66	32.656	25.36	0.172	0.448	6.19	-1.21
				60.	8.33	32.713	25.45	0.198	0.439	5.98	-1.50
				70.	8.21	32.903	25.62	0.222	0.434	5.62	-1.71
				80.	8.07	33.177	25.85	0.245	0.445	4.88	-1.97
				90.	7.78	33.390	26.06	0.260	0.428	4.51	-2.23
				100.	7.67	33.496	26.15	0.285	0.424	4.41	-2.45
				125.	7.63	33.673	26.30	0.331	0.426	3.76	-2.98
				150.	7.56	33.822	26.44	0.374	0.436	3.31	-3.53
				175.	7.31	33.920	26.55	0.413	0.560	2.21	-4.01
				195.	7.17	33.943	26.58	0.443	0.513	2.30	-88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D86	LAT 47-21.5N LON 125-07.3W	DATE 1/10/80 TIME 1639(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
				0.	15.18	32.257	23.84	0.000	0.620	5.55	0.63
				10.	15.00	32.258	23.88	0.041	0.622	5.53	0.22
				20.	14.24	32.303	24.08	0.080	0.685	5.72	-0.25
				30.	11.98	32.483	24.66	0.116	0.730	6.34	-0.81
				40.	10.15	32.602	25.08	0.147	0.575	6.76	-1.30
				50.	9.25	32.615	25.23	0.176	0.498	6.51	-1.74
				60.	8.50	32.647	25.38	0.203	0.442	6.09	-2.01
				70.	8.30	32.745	25.48	0.229	0.435	5.88	-2.23
				80.	8.11	33.153	25.83	0.252	0.435	5.00	-2.48
				90.	8.06	33.320	25.97	0.274	0.442	4.24	-2.72
				100.	7.98	33.473	26.10	0.294	0.450	3.71	-2.97
				125.	7.53	33.827	26.44	0.338	0.474	2.53	-3.60
				150.	7.22	33.928	26.57	0.378	0.522	2.10	-4.13
				175.	7.11	33.943	26.59	0.415	0.551	1.66	-88.0
				200.	7.04	33.956	26.61	0.452	0.554	1.61	-88.0
				243.	6.94	33.968	26.64	0.515	0.547	1.62	-88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-22.5N DATE 1/10/80
STATION D87 LON 125-00.5W TIME 1804(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uw/cm2)
0.	15.24	32.253	23.85	0.000	0.598	5.71	0.10
10.	15.07	32.251	23.86	0.041	0.612	5.78	-0.32
20.	14.50	32.311	24.03	0.081	0.639	5.91	-0.84
30.	11.47	32.518	24.78	0.116	0.649	6.53	-1.34
40.	9.59	32.590	25.15	0.147	0.526	6.83	-1.81
50.	8.24	32.599	25.29	0.174	0.470	6.42	-2.18
60.	8.39	32.686	25.42	0.201	0.442	6.16	-2.44
70.	8.29	32.927	25.63	0.226	0.449	5.29	-2.60
80.	8.11	32.258	25.91	0.248	0.426	4.75	-2.91
90.	8.05	33.435	26.06	0.269	0.431	4.11	-3.14
100.	7.91	33.597	26.21	0.288	0.431	3.87	-3.37
125.	7.79	33.742	26.34	0.333	0.451	2.85	-3.91
150.	7.55	33.871	26.47	0.374	0.448	2.51	=88.0
175.	7.37	33.915	26.53	0.413	0.442	2.57	=88.0
194.	7.22	33.942	26.58	0.443	0.432	2.55	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-22.5N DATE 1/10/80
STATION D88 LON 124-54.2W TIME 1902(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uw/cm2)
0.	15.08	32.249	23.86	0.000	0.741	5.74	-1.28
10.	14.73	32.247	23.93	0.040	0.748	5.88	-2.00
20.	14.27	32.249	24.03	0.080	0.742	5.84	-2.55
30.	10.55	32.508	24.94	0.115	0.611	6.30	-3.11
40.	9.09	32.627	25.27	0.144	0.503	5.76	-3.52
50.	8.74	32.898	25.54	0.170	0.496	4.69	-3.83
60.	8.42	33.025	25.68	0.194	0.482	4.32	-4.08
70.	8.01	33.190	25.87	0.216	0.446	4.35	=88.0
80.	7.98	33.492	26.11	0.237	0.429	3.99	=88.0
90.	7.90	33.694	26.21	0.256	0.431	3.70	=88.0
100.	7.87	33.642	26.25	0.274	0.432	3.55	=88.0
125.	7.72	33.804	26.40	0.317	0.460	2.70	=88.0
150.	7.48	33.868	26.48	0.358	0.434	2.92	=88.0
175.	7.32	33.912	26.54	0.397	0.427	2.92	=88.0
200.	7.09	33.932	26.59	0.435	0.429	2.83	=88.0
204.	7.11	33.940	26.59	0.441	0.434	2.88	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-21.2N DATE 1/10/80
STATION D89 LON 124-49.3W TIME 2026(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uw/cm2)
0.	14.78	32.231	23.91	0.000	0.762	5.88	-2.95
10.	14.54	32.251	23.98	0.040	0.749	5.99	-3.81
20.	11.13	32.429	24.78	0.076	0.734	6.15	=88.0
30.	9.24	32.755	25.35	0.105	0.558	5.47	=88.0
40.	8.39	32.963	25.64	0.130	0.476	4.82	=88.0
50.	8.04	33.109	25.81	0.153	0.443	4.69	=88.0
60.	8.00	33.413	26.05	0.174	0.429	4.38	=88.0
70.	7.96	33.550	26.16	0.194	0.433	3.89	=88.0
80.	7.85	33.623	26.24	0.212	0.428	3.75	=88.0
90.	7.78	33.675	26.29	0.230	0.429	3.59	=88.0
100.	7.73	33.767	26.37	0.247	0.439	3.22	=88.0
125.	7.51	33.872	26.48	0.288	0.469	2.48	=88.0
150.	7.29	33.910	26.54	0.327	0.596	1.80	=88.0
175.	7.23	33.928	26.56	0.365	0.582	1.90	=88.0
194.	7.14	33.935	26.58	0.393	0.611	1.66	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-18.0N DATE 1/10/80
STATION D90 LON 124-45.4W TIME 2200(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uw/cm2)
0.	14.65	32.190	23.90	0.000	0.840	6.04	-3.20
10.	14.14	32.271	24.07	0.040	0.767	6.07	-3.79
20.	10.38	32.554	25.00	0.074	0.696	6.17	=88.0
30.	8.69	32.841	25.50	0.101	0.510	5.14	=88.0
40.	8.17	33.042	25.73	0.125	0.449	4.70	=88.0
50.	7.98	33.239	25.92	0.147	0.440	4.58	=88.0
60.	7.92	33.439	26.08	0.168	0.439	4.15	=88.0
70.	7.81	33.623	26.24	0.186	0.498	3.62	=88.0
80.	7.75	33.716	26.32	0.204	0.566	2.58	=88.0
90.	7.61	33.796	26.41	0.221	0.563	2.25	=88.0
100.	7.50	33.842	26.46	0.237	0.583	1.92	=88.0
125.	7.37	33.894	26.52	0.277	0.629	1.84	=88.0
150.	7.29	33.909	26.54	0.315	0.729	1.04	=88.0
175.	7.25	33.912	26.55	0.354	0.746	1.45	=88.0
194.	7.24	33.913	26.55	0.383	0.723	1.42	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-18.5N DATE 1/10/80
STATION D91 LON 124-38.6W TIME 2338(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uw/cm2)
0.	13.80	32.064	23.98	0.000	2.037	6.70	-3.19
10.	12.60	32.227	24.35	0.038	1.026	6.27	-4.15
20.	9.69	32.977	25.45	0.069	0.578	4.60	=88.0
30.	8.50	33.170	25.78	0.093	0.504	3.77	=88.0
40.	8.06	33.346	25.99	0.114	0.473	3.42	=88.0
50.	7.88	33.551	26.17	0.134	0.503	2.80	=88.0
60.	7.73	33.743	26.35	0.151	0.495	2.54	=88.0
70.	7.65	33.809	26.41	0.168	0.503	2.40	=88.0
80.	7.49	33.856	26.47	0.184	0.982	1.83	=88.0
90.	7.46	33.863	26.48	0.200	1.178	1.71	=88.0
97.	7.44	33.869	26.49	0.211	1.315	1.61	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-19.4N DATE 2/10/80
STATION D92 LON 124-32.4W TIME 112(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uw/cm2)
0.	13.08	31.924	24.02	0.000	1.049	6.30	-2.92
10.	12.75	32.251	24.34	0.038	0.950	6.08	-3.97
20.	9.99	32.715	25.19	0.070	1.065	4.75	=88.0
30.	8.66	33.283	25.85	0.095	1.073	2.57	=88.0
40.	7.87	33.553	26.18	0.115	0.633	2.51	=88.0
50.	7.80	33.615	26.24	0.133	0.859	2.11	=88.0
60.	7.81	33.720	26.32	0.151	1.039	2.25	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-20.0N DATE 2/10/80
STATION D93 LON 124-25.8W TIME 241(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.76	29.067	21.68	0.000	1.510	6.56	-2.85
10.	13.34	29.960	22.46	0.058	1.251	5.97	=88.0
20.	13.03	31.602	23.78	0.106	1.150	5.77	=88.0
30.	8.15	33.440	26.05	0.137	6.372	3.45	=88.0
31.	8.02	33.473	26.09	0.139	=88.0	3.17	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-19.8N DATE 2/10/80
STATION D94 LON 124-22.6W TIME 345(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.97	29.317	21.84	0.000	1.715	6.36	-3.24
10.	13.61	29.539	22.08	0.059	1.645	5.94	=88.0
20.	11.51	32.139	24.48	0.105	2.850	4.96	=88.0
25.	8.83	33.214	25.77	0.120	=88.0	2.22	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-32.0N DATE 2/10/80
STATION D95 LON 124-27.0W TIME 740(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.65	29.635	22.14	0.000	1.235	5.94	-0.11
10.	13.69	29.828	22.28	0.057	1.303	5.98	-1.43
20.	13.39	30.560	22.91	0.109	1.584	5.56	-3.11
22.	13.26	30.747	23.08	0.119	1.566	5.56	-3.35

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-32.0N DATE 2/10/80
STATION D96 LON 124-32.0W TIME 848(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.57	29.744	22.24	0.000	1.517	5.88	0.42
10.	13.37	30.449	22.83	0.053	1.721	5.63	-0.89
20.	13.12	31.480	23.67	0.100	1.094	5.50	-2.76
30.	12.51	32.016	24.20	0.140	0.884	5.75	-3.83
37.	8.41	33.360	25.95	0.160	3.945	2.95	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-32.0N DATE 2/10/80
STATION D97 LON 124-38.1W TIME 956(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.64	29.752	22.24	0.000	4.190	6.01	1.07
10.	13.17	31.478	23.66	0.050	2.367	5.43	-0.55
20.	12.16	32.283	24.47	0.088	1.054	5.47	-1.86
30.	9.04	33.137	25.68	0.117	0.600	3.73	-2.57
40.	7.99	33.429	26.06	0.139	0.509	3.05	-2.96
50.	7.36	33.530	26.16	0.158	0.577	3.28	-3.35
60.	7.77	33.632	26.26	0.177	1.026	2.02	-3.81
66.	7.76	33.663	26.28	0.187	1.236	1.86	-4.09

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-32.0N DATE 2/10/80
STATION D98 LON 124-45.6W TIME 1230(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.56	32.109	24.07	0.000	1.656	5.66	1.19
10.	13.19	32.195	24.21	0.038	1.485	5.76	0.59
20.	12.47	32.304	24.43	0.074	0.883	5.58	-0.48
30.	10.93	32.653	24.98	0.107	0.652	4.96	-1.30
40.	8.96	33.119	25.68	0.134	0.567	4.00	-2.03
50.	8.05	33.444	26.07	0.155	0.492	3.46	-2.47
60.	7.89	33.534	26.16	0.175	0.468	3.56	-2.79
70.	7.80	33.636	26.25	0.193	0.464	3.45	-3.09
80.	7.76	33.703	26.31	0.211	0.505	2.90	-3.40
90.	7.67	33.777	26.38	0.228	0.875	2.12	-3.76
100.	7.65	33.791	26.40	0.245	0.957	1.84	=88.0
106.	7.61	33.808	26.42	0.255	1.065	1.74	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-32.0N DATE 2/10/80
STATION D99 LON 124-53.0W TIME 1356(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.52	32.271	24.00	0.000	0.756	5.51	1.12
10.	14.14	32.262	24.07	0.039	0.841	5.60	0.66
20.	10.72	32.484	24.89	0.074	0.807	5.81	-0.07
30.	9.66	32.651	25.20	0.103	0.626	5.25	-0.75
40.	8.81	32.730	25.39	0.130	0.522	5.09	-1.20
50.	8.44	32.893	25.58	0.156	0.513	4.85	-1.58
60.	8.19	33.067	25.75	0.179	0.525	4.55	-1.91
70.	8.03	33.381	26.02	0.201	0.598	3.79	-2.23
80.	7.83	33.615	26.23	0.220	0.669	3.31	-2.58
90.	7.67	33.743	26.36	0.238	0.824	2.99	-2.87
100.	7.55	33.826	26.44	0.254	1.084	2.48	-3.19
125.	7.46	33.862	26.48	0.294	2.018	1.59	-4.12
150.	7.45	33.866	26.48	0.334	5.182	1.39	=88.0
153.	7.45	33.866	26.48	0.339	4.526	1.37	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	14.59	32.288	23.99	0.000	=88.0	5.75	1.14
10.	14.21	32.276	24.06	0.039	=88.0	5.90	0.41
20.	13.45	32.328	24.26	0.077	=88.0	5.95	-0.26
30.	10.07	32.568	25.00	0.110	=88.0	5.76	-0.95
40.	8.90	32.727	25.38	0.138	=88.0	5.26	-1.53
50.	8.37	32.932	25.62	0.163	=88.0	5.03	-1.96
60.	8.18	33.226	25.88	0.186	=88.0	4.51	-2.32
70.	7.85	33.605	26.22	0.206	=88.0	3.57	-2.70
80.	7.62	33.781	26.39	0.223	=88.0	3.09	-3.04
90.	7.55	33.829	26.44	0.240	=88.0	2.41	-3.40
100.	7.52	33.841	26.46	0.256	=88.0	2.07	-3.78
125.	7.45	33.867	26.49	0.296	=88.0	1.53	=88.0
150.	7.43	33.873	26.49	0.335	=88.0	1.41	=88.0
152.	7.44	33.871	26.49	0.339	=88.0	1.39	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	15.00	32.282	23.90	0.000	=88.0	5.51	0.58
10.	14.91	32.285	23.92	0.040	=88.0	5.50	0.13
20.	13.25	32.386	24.34	0.078	=88.0	5.69	-0.34
30.	9.90	32.564	25.09	0.111	=88.0	6.23	-0.86
40.	9.23	32.592	25.22	0.139	=88.0	6.20	-1.30
50.	8.69	32.614	25.32	0.167	=88.0	5.99	-1.67
60.	8.35	32.694	25.44	0.193	=88.0	5.71	-1.99
70.	8.20	32.924	25.64	0.218	=88.0	5.40	-2.26
80.	8.06	33.296	25.95	0.240	=88.0	4.34	-2.56
90.	7.87	33.481	26.12	0.260	=88.0	3.95	-2.87
100.	7.83	33.558	26.19	0.279	=88.0	3.65	-3.13
125.	7.55	33.834	26.44	0.323	=88.0	2.61	-3.80
150.	7.33	33.894	26.52	0.362	=88.0	1.63	=88.0
175.	7.26	33.915	26.55	0.401	=88.0	1.65	=88.0
200.	7.22	33.922	26.56	0.439	=88.0	1.79	=88.0
250.	6.95	33.961	26.63	0.514	=88.0	2.19	=88.0
300.	6.47	33.999	26.72	0.585	=88.0	1.95	=88.0
349.	6.19	34.017	26.77	0.651	=88.0	1.73	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	15.20	32.221	23.81	0.000	=88.0	5.68	-3.23
10.	15.20	32.221	23.81	0.041	=88.0	5.68	-3.23
20.	15.11	32.274	23.87	0.082	=88.0	5.64	-3.23
30.	13.72	32.378	24.24	0.121	=88.0	5.81	-3.23
40.	11.27	32.591	24.88	0.155	=88.0	6.58	-3.23
50.	9.69	32.621	25.17	0.185	=88.0	6.75	-3.23
60.	8.91	32.614	25.29	0.213	=88.0	6.56	-3.23
70.	8.52	32.621	25.35	0.240	=88.0	6.30	-3.23
80.	8.31	32.761	25.49	0.265	=88.0	6.07	-3.23
90.	8.13	33.070	25.76	0.289	=88.0	5.49	-3.23
100.	7.89	33.475	26.11	0.310	=88.0	4.76	-3.23
125.	7.70	33.793	26.39	0.355	=88.0	3.66	-3.23
150.	7.50	33.868	26.48	0.396	=88.0	3.17	-3.23
175.	7.19	33.937	26.58	0.435	=88.0	2.47	-3.23
200.	7.10	33.950	26.61	0.472	=88.0	2.57	=88.0
250.	6.79	33.968	26.66	0.545	=88.0	2.30	=88.0
300.	6.45	33.958	26.69	0.616	=88.0	2.40	=88.0
350.	5.79	33.943	26.77	0.684	=88.0	2.55	=88.0
400.	5.64	34.011	26.84	0.750	=88.0	1.76	=88.0
450.	5.44	34.057	26.90	0.812	=88.0	1.33	=88.0
500.	5.09	34.099	26.97	0.872	=88.0	0.92	=88.0
526.	4.95	34.097	26.99	0.901	=88.0	0.87	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	15.32	32.261	23.82	0.000	=88.0	5.58	-3.16
10.	15.06	32.257	23.87	0.041	=88.0	5.68	-3.82
20.	14.99	32.262	23.89	0.082	=88.0	5.71	=88.0
30.	12.47	32.470	24.56	0.119	=88.0	6.08	=88.0
40.	10.25	32.617	25.07	0.150	=88.0	6.76	=88.0
50.	9.17	32.604	25.24	0.179	=88.0	6.59	=88.0
60.	8.71	32.613	25.32	0.206	=88.0	6.40	=88.0
70.	8.40	32.661	25.40	0.233	=88.0	6.17	=88.0
80.	8.26	32.830	25.56	0.258	=88.0	5.83	=88.0
90.	8.11	33.081	25.77	0.282	=88.0	5.26	=88.0
100.	8.05	33.328	25.98	0.303	=88.0	4.59	=88.0
125.	7.84	33.708	26.31	0.351	=88.0	3.35	=88.0
150.	7.50	33.814	26.46	0.393	=88.0	3.23	=88.0
175.	7.33	33.900	26.53	0.433	=88.0	3.29	=88.0
200.	7.10	33.950	26.60	0.470	=88.0	2.29	=88.0
250.	6.69	33.993	26.69	0.543	=88.0	2.02	=88.0
300.	6.48	34.005	26.73	0.612	=88.0	2.00	=88.0
350.	6.28	34.014	26.76	0.680	=88.0	1.86	=88.0
400.	5.96	34.035	26.82	0.746	=88.0	1.77	=88.0
450.	5.07	33.969	26.87	0.810	=88.0	1.74	=88.0
500.	4.70	33.995	26.93	0.871	=88.0	1.52	=88.0
600.	4.54	34.112	27.05	0.984	=88.0	0.82	=88.0
700.	4.11	34.168	27.13	1.089	=88.0	0.58	=88.0
800.	4.02	33.656	26.74	1.209	=88.0	0.44	=88.0
895.	3.87	34.319	27.28	1.317	=88.0	0.39	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D103	LAT 47-32.0N LON 125-22.7W	DATE 3/10/80 TIME 110(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μW/CM2)
				0.	15.12	32.271	23.87	0.000	=88.0	5.56	-3.87
				10.	15.12	32.271	23.87	0.041	=88.0	5.56	-3.87
				20.	15.03	32.280	23.89	0.081	=88.0	5.56	-4.10
				30.	12.93	32.454	24.46	0.119	=88.0	6.11	=88.0
				40.	11.27	32.608	24.89	0.152	=88.0	6.69	=88.0
				50.	9.65	32.642	25.19	0.182	=88.0	6.67	=88.0
				60.	9.00	32.608	25.27	0.209	=88.0	6.55	=88.0
				70.	8.68	32.618	25.33	0.236	=88.0	6.30	=88.0
				80.	8.43	32.703	25.43	0.263	=88.0	6.08	=88.0
				90.	8.26	32.864	25.58	0.288	=88.0	5.74	=88.0
				100.	8.12	33.074	25.77	0.311	=88.0	5.30	=88.0
				125.	7.95	33.575	26.18	0.363	=88.0	3.87	=88.0
				150.	7.69	33.811	26.41	0.407	=88.0	2.92	=88.0
				175.	7.35	33.900	26.53	0.447	=88.0	3.26	=88.0
				200.	7.15	33.937	26.58	0.486	=88.0	3.09	=88.0
				250.	6.63	33.977	26.68	0.558	=88.0	2.65	=88.0
				300.	6.44	34.003	26.73	0.628	=88.0	2.09	=88.0
				350.	6.05	34.027	26.80	0.695	=88.0	1.69	=88.0
				400.	5.63	34.030	26.85	0.759	=88.0	1.69	=88.0
				450.	4.97	33.991	26.90	0.821	=88.0	1.44	=88.0
				500.	4.51	34.041	26.99	0.879	=88.0	1.21	=88.0
				600.	4.22	34.089	27.06	0.989	=88.0	0.86	=88.0
				700.	4.13	34.202	27.16	1.092	=88.0	0.51	=88.0
				730.	4.12	34.217	27.17	1.121	=88.0	0.49	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D104	LAT 47-32.0N LON 125-33.7W	DATE 3/10/80 TIME 350(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μW/CM2)
				0.	15.44	32.293	23.81	0.000	=88.0	5.58	-2.27
				10.	15.44	32.292	23.81	0.041	=88.0	5.51	-3.84
				20.	15.41	32.290	23.82	0.082	=88.0	5.57	=88.0
				30.	13.25	32.371	24.33	0.121	=88.0	5.91	=88.0
				40.	10.82	32.587	24.95	0.154	=88.0	6.74	=88.0
				50.	9.79	32.634	25.16	0.184	=88.0	6.63	=88.0
				60.	9.23	32.626	25.25	0.212	=88.0	6.43	=88.0
				70.	8.87	32.624	25.30	0.239	=88.0	6.33	=88.0
				80.	8.64	32.632	25.34	0.266	=88.0	6.24	=88.0
				90.	8.41	32.679	25.41	0.292	=88.0	6.09	=88.0
				100.	8.25	32.886	25.60	0.317	=88.0	5.74	=88.0
				125.	7.81	33.500	26.15	0.372	=88.0	4.35	=88.0
				150.	7.77	33.748	26.35	0.417	=88.0	3.37	=88.0
				175.	7.45	33.886	26.50	0.458	=88.0	3.12	=88.0
				200.	7.09	33.905	26.57	0.497	=88.0	3.20	=88.0
				250.	6.57	33.949	26.67	0.570	=88.0	2.96	=88.0
				300.	6.00	33.956	26.75	0.639	=88.0	2.59	=88.0
				350.	5.60	33.974	26.81	0.705	=88.0	2.07	=88.0
				400.	5.10	33.977	26.88	0.769	=88.0	1.71	=88.0
				450.	4.62	34.000	26.95	0.829	=88.0	1.43	=88.0
				500.	4.47	34.048	27.00	0.886	=88.0	1.13	=88.0
				600.	4.21	34.119	27.09	0.994	=88.0	0.74	=88.0
				700.	3.96	34.204	27.18	1.094	=88.0	0.50	=88.0
				800.	3.99	34.313	27.26	1.187	=88.0	0.36	=88.0
				900.	3.70	34.369	27.34	1.273	=88.0	0.37	=88.0
				1000.	3.49	34.393	27.38	1.354	=88.0	0.39	=88.0
				1100.	3.32	34.425	27.42	1.431	=88.0	0.45	=88.0
				1200.	3.00	34.471	27.48	1.503	=88.0	0.58	=88.0
				1300.	2.89	34.487	27.51	1.572	=88.0	0.68	=88.0
				1348.	2.74	34.505	27.54	1.603	=88.0	0.76	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D105	LAT 47-32.0N LON 125-45.0W	DATE 3/10/80 TIME 631(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μW/CM2)
				0.	15.43	32.296	23.81	0.000	=88.0	5.66	-3.10
				10.	15.44	32.286	23.81	0.041	=88.0	5.59	-3.84
				20.	15.42	32.286	23.81	0.082	=88.0	5.72	=88.0
				30.	12.59	32.499	24.56	0.120	=88.0	6.41	=88.0
				40.	9.89	32.622	25.14	0.151	=88.0	6.94	=88.0
				50.	9.47	32.633	25.21	0.180	=88.0	6.65	=88.0
				60.	8.89	32.617	25.29	0.207	=88.0	6.43	=88.0
				70.	8.61	32.629	25.34	0.234	=88.0	6.22	=88.0
				80.	8.39	32.686	25.42	0.260	=88.0	6.12	=88.0
				90.	8.29	32.778	25.51	0.286	=88.0	5.88	=88.0
				100.	8.24	32.900	25.61	0.310	=88.0	5.60	=88.0
				125.	8.04	33.410	26.06	0.365	=88.0	4.32	=88.0
				150.	7.72	33.746	26.35	0.412	=88.0	3.57	=88.0
				175.	7.38	33.869	26.50	0.453	=88.0	3.06	=88.0
				200.	6.98	33.909	26.58	0.491	=88.0	3.39	=88.0
				250.	6.37	33.947	26.70	0.564	=88.0	2.95	=88.0
				300.	5.84	33.943	26.76	0.632	=88.0	2.64	=88.0
				350.	5.38	33.938	26.81	0.698	=88.0	2.35	=88.0
				400.	5.15	33.983	26.87	0.761	=88.0	1.80	=88.0
				450.	4.68	33.993	26.94	0.821	=88.0	1.45	=88.0
				500.	4.50	34.026	26.98	0.879	=88.0	1.21	=88.0
				600.	4.21	34.122	27.09	0.988	=88.0	0.73	=88.0
				700.	3.95	34.211	27.19	1.088	=88.0	0.47	=88.0
				800.	3.73	34.289	27.27	1.180	=88.0	0.38	=88.0
				900.	3.63	34.351	27.33	1.266	=88.0	0.37	=88.0
				1000.	3.44	34.394	27.38	1.346	=88.0	0.40	=88.0
				1100.	3.26	34.436	27.43	1.422	=88.0	0.46	=88.0
				1200.	3.07	34.460	27.47	1.495	=88.0	0.55	=88.0
				1300.	2.83	34.492	27.52	1.563	=88.0	0.69	=88.0
				1400.	2.76	34.502	27.53	1.629	=88.0	0.75	=88.0
				1430.	2.69	34.509	27.54	1.649	=88.0	0.78	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D106	LAT 47-32.0N LON 125-33.7W	DATE 3/10/80 TIME 945(+7)	DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μW/CM2)
				0.	15.37	32.293	23.83	0.000	=88.0	5.64	0.54
				10.	15.37	32.294	23.83	0.041	=88.0	5.65	0.00
				20.	15.33	32.294	23.84	0.082	=88.0	5.70	-0.36
				30.	12.83	32.489	24.50	0.120	=88.0	6.05	-0.68
				40.	10.47	32.624	25.04	0.152	=88.0	6.82	-1.12
				50.	9.72	32.634	25.17	0.181	=88.0	6.80	-1.55
				60.	8.99	32.629	25.29	0.209	=88.0	6.59	-1.94
				70.	8.58	32.641	25.36	0.235	=88.0	6.35	-2.27
				80.	8.38	32.699	25.43	0.262	=88.0	6.15	-2.54
				90.	8.26	32.855	25.57	0.287	=88.0	5.86	-2.73
				100.	8.21	32.966	25.67	0.311	=88.0	5.37	-2.90
				125.	7.89	33.439	26.09	0.365	=88.0	4.44	-3.41
				150.	7.77	33.771	26.36	0.411	=88.0	3.46	-3.91
				175.	7.57	33.874	26.47	0.452	=88.0	3.00	=88.0
				194.	7.21	33.911	26.55	0.482	=88.0	2.73	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.88	32.269	23.92	0.000	=88.0	5.64	0.27
10.	14.88	32.269	23.92	0.040	=88.0	5.64	0.27
20.	14.61	32.299	24.00	0.080	=88.0	5.78	-0.04
30.	11.39	32.594	24.86	0.115	=88.0	6.59	-0.49
40.	10.02	32.615	25.11	0.145	=88.0	6.72	-0.89
50.	9.27	32.625	25.24	0.174	=88.0	6.56	-1.40
60.	8.82	32.622	25.31	0.201	=88.0	6.35	-1.80
70.	8.59	32.631	25.35	0.228	=88.0	6.21	-1.99
80.	8.37	32.727	25.46	0.254	=88.0	6.00	-2.16
90.	8.18	32.980	25.68	0.278	=88.0	5.65	-2.39
100.	8.10	33.338	25.98	0.300	=88.0	4.73	-2.78
125.	7.73	33.616	26.25	0.349	=88.0	4.08	-3.14
150.	7.64	33.796	26.40	0.392	=88.0	3.40	-3.80
175.	7.39	33.868	26.49	0.433	=88.0	3.51	=88.0
194.	7.23	33.924	26.56	0.462	=88.0	3.13	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.18	32.273	23.86	0.000	=88.0	5.69	0.70
10.	15.17	32.274	23.86	0.041	=88.0	5.59	0.54
20.	13.26	32.408	24.36	0.079	=88.0	5.98	0.09
30.	10.90	32.594	24.94	0.112	=88.0	6.75	-0.38
40.	10.13	32.617	25.09	0.142	=88.0	6.65	-0.82
50.	9.29	32.629	25.24	0.170	=88.0	6.62	-1.23
60.	8.76	32.627	25.32	0.198	=88.0	6.38	-1.52
70.	8.58	32.640	25.36	0.224	=88.0	6.23	-1.85
80.	8.38	32.727	25.46	0.250	=88.0	6.04	-2.15
90.	8.13	33.068	25.76	0.274	=88.0	5.59	-2.41
100.	8.05	33.326	25.98	0.296	=88.0	4.70	-2.67
125.	7.75	33.701	26.31	0.344	=88.0	3.64	-3.30
150.	7.51	33.873	26.48	0.386	=88.0	3.01	-3.82
175.	7.22	33.938	26.57	0.424	=88.0	2.60	=88.0
191.	7.06	33.946	26.60	0.448	=88.0	2.93	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.21	32.275	23.85	0.000	=88.0	5.55	0.94
10.	15.21	32.274	23.85	0.041	=88.0	5.66	0.58
20.	15.04	32.280	23.89	0.082	=88.0	5.65	0.04
30.	11.70	32.555	24.77	0.118	=88.0	6.50	-0.45
40.	10.10	32.624	25.10	0.148	=88.0	6.85	-0.93
50.	8.89	32.615	25.29	0.176	=88.0	6.60	-1.32
60.	8.52	32.633	25.36	0.203	=88.0	6.21	-1.42
70.	8.40	32.668	25.41	0.229	=88.0	6.05	-1.85
80.	8.28	32.862	25.58	0.255	=88.0	5.82	-2.10
90.	8.08	33.227	25.89	0.278	=88.0	5.20	-2.33
100.	7.99	33.416	26.05	0.298	=88.0	4.53	-2.56
125.	7.84	33.612	26.23	0.346	=88.0	3.72	-3.17
150.	7.55	33.837	26.45	0.389	=88.0	2.92	-3.75
175.	7.28	33.925	26.55	0.428	=88.0	2.53	=88.0
195.	7.05	33.962	26.62	0.459	=88.0	2.54	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.76	32.312	23.97	0.000	=88.0	5.80	0.48
10.	14.76	32.314	23.98	0.040	=88.0	5.77	-0.13
20.	13.00	32.342	24.36	0.077	=88.0	6.12	-0.59
30.	9.69	32.561	25.12	0.110	=88.0	6.65	-1.09
40.	8.60	32.624	25.34	0.137	=88.0	6.42	-1.45
50.	8.39	32.718	25.45	0.164	=88.0	6.07	-1.73
60.	8.29	32.831	25.55	0.189	=88.0	5.75	-2.01
70.	8.20	32.952	25.66	0.213	=88.0	5.53	-2.23
80.	8.09	33.094	25.79	0.236	=88.0	5.21	-2.47
90.	7.98	33.301	25.97	0.257	=88.0	4.48	-2.73
100.	7.85	33.467	26.11	0.278	=88.0	4.04	-3.00
125.	7.59	33.825	26.43	0.322	=88.0	2.16	-3.84
150.	7.41	33.876	26.50	0.362	=88.0	1.79	=88.0
175.	7.28	33.908	26.54	0.401	=88.0	1.49	=88.0
183.	7.28	33.910	26.54	0.413	=88.0	1.45	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.07	32.315	24.12	0.000	=88.0	5.99	-0.27
10.	13.86	32.337	24.18	0.038	=88.0	6.02	-0.91
20.	11.95	32.416	24.62	0.074	=88.0	6.01	-1.65
30.	9.30	32.639	25.25	0.104	=88.0	6.12	-2.30
40.	8.73	32.795	25.46	0.131	=88.0	5.65	-2.69
50.	8.26	33.012	25.70	0.155	=88.0	4.82	-3.02
60.	8.02	33.266	25.93	0.177	=88.0	4.20	-3.30
70.	8.00	33.400	26.04	0.198	=88.0	3.61	-3.60
80.	7.84	33.582	26.21	0.217	=88.0	3.21	-3.87
90.	7.73	33.714	26.33	0.235	=88.0	2.66	-4.13
100.	7.62	33.805	26.41	0.252	=88.0	2.14	=88.0
125.	7.60	33.818	26.43	0.293	=88.0	1.63	=88.0
150.	7.49	33.855	26.47	0.333	=88.0	1.52	=88.0
153.	7.48	33.858	26.47	0.338	=88.0	1.52	=88.0

INTERPOLATED AND COMPUTED VALUES

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.16	32.166	24.19	0.000	=88.0	6.07	-2.76
10.	13.14	32.164	24.19	0.038	=88.0	6.09	-3.53
20.	12.41	32.280	24.42	0.074	=88.0	5.82	=88.0
30.	8.91	33.127	25.69	0.103	=88.0	5.04	=88.0
40.	8.11	33.356	25.99	0.125	=88.0	3.70	=88.0
50.	7.99	33.492	26.11	0.145	=88.0	3.45	=88.0
60.	7.75	33.616	26.25	0.164	=88.0	2.51	=88.0
70.	7.73	33.686	26.30	0.181	=88.0	1.99	=88.0
80.	7.71	33.713	26.33	0.199	=88.0	1.77	=88.0
90.	7.69	33.741	26.35	0.216	=88.0	1.57	=88.0
100.	7.64	33.798	26.40	0.233	=88.0	1.51	=88.0
104.	7.62	33.807	26.41	0.239	=88.0	1.56	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009	LAT	47-32.0N	DATE	3/10/80	
STATION		D113	LON	124-38.1W	TIME	2044(+7)	
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	12.88	32.177	24.25	0.000	=88.0	5.71	-3.11
10.	12.88	32.184	24.26	0.037	=88.0	5.65	-4.08
20.	11.87	32.470	24.67	0.072	=88.0	5.48	=88.0
30.	8.51	33.202	25.81	0.099	=88.0	3.89	=88.0
40.	8.05	33.415	26.04	0.121	=88.0	3.22	=88.0
50.	7.92	33.535	26.16	0.140	=88.0	3.00	=88.0
60.	7.74	33.655	26.28	0.158	=88.0	2.31	=88.0
67.	7.74	33.664	26.28	0.171	=88.0	1.77	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE	W8009	LAT	47-32.0N	DATE	3/10/80		
STATION	D114	LON	124-32.0W	TIME	2207(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HIT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	13.71	30.047	22.45	0.000	=88.0	5.75	-2.80
10.	13.51	30.436	22.79	0.053	=88.0	5.57	=88.0
20.	13.08	31.771	23.90	0.098	=88.0	5.30	=88.0
30.	9.54	32.998	25.49	0.131	=88.0	4.40	=88.0
40.	8.10	33.466	26.08	0.153	=88.0	2.25	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE		W8009	LAT	47-32.0N	DATE	3/10/80	
STATION		D115	LON	124-27.0W	TIME	2305(+7)	
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	13.85	29.910	22.32	0.000	=88.0	6.02	-4.15
10.	13.87	29.834	22.25	0.056	=88.0	6.07	=88.0
20.	12.63	31.407	23.71	0.105	=88.0	5.61	=88.0
24.	10.44	32.453	24.91	0.121	=88.0	4.93	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009		LAT 47-23.3N	DATE 3/10/80				
STATION D116	LON 124-32.8W	TIME 2353(+7)					
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.79	29.987	22.39	0.000	=88.0	5.84	-3.11
10.	13.59	30.326	22.69	0.053	=88.0	5.92	=39.4
20.	13.11	31.847	23.95	0.099	=88.0	5.55	=88.0
30.	9.62	33.085	25.54	0.132	=88.0	5.02	=88.0
39.	8.10	33.469	26.08	0.153	=88.0	2.31	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D117	LAT LON	47-29.5N 124-31.5W	DATE TIME	4/10/80 102(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.19	29.650	22.05	0.000	=88.0	5.81	-2.26
10.	13.98	29.911	22.29	0.057	=88.0	5.78	=88.0
20.	11.42	31.857	24.28	0.103	=88.0	5.77	=88.0
30.	8.25	33.411	26.01	0.132	=88.0	2.70	=88.0
37.	8.14	33.447	26.06	0.147	=88.0	2.19	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE	W8009	LAT	47-26.8N	DATE	4/10/80		
STATION	D118	LON	124-30.8W	TIME	211(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	13.66	30.251	22.62	0.000	=88.0	6.24	-3.13
10.	13.45	31.476	23.60	0.048	=88.0	6.27	=88.0
20.	12.95	32.205	24.26	0.088	=88.0	6.30	=88.0
30.	8.37	33.401	25.99	0.117	=88.0	4.48	=88.0
33.	8.32	33.397	25.99	0.124	=88.0	3.21	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE	W8009	LAT	47-23.9N	DATE	4/10/80		
STATION	D119	LON	124-28.7W	TIME	314(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	13.67	29.880	22.33	0.000	=88.0	6.13	-2.49
10.	13.39	31.279	23.46	0.050	=88.0	6.18	-4.13
20.	12.83	32.231	24.30	0.091	=88.0	6.04	=88.0
30.	9.04	33.156	25.69	0.120	=88.0	3.67	=88.0
31.	8.88	33.207	25.75	0.122	=88.0	3.08	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D120	LAT LON	47-21.2N 124-27.2W	DATE TIME	4/10/80 424(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.95	29.427	21.93	0.000	=88.0	6.17	-3.25
10.	13.22	30.601	22.97	0.054	=88.0	5.98	=88.0
20.	13.20	32.056	24.10	0.098	=88.0	5.97	=88.0
30.	9.65	32.871	25.37	0.131	=88.0	4.63	=88.0
35.	8.78	33.234	25.79	0.142	=88.0	3.04	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D121	LAT LON	47-18.2N 124-25.8W	DATE TIME	4/10/80 552(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.18	31.463	23.64	0.000	=88.0	5.70	-3.32
10.	13.48	31.955	23.96	0.041	=88.0	5.79	=88.0
20.	13.51	31.846	23.87	0.081	=88.0	6.01	=88.0
30.	11.11	32.565	24.88	0.117	=88.0	5.14	=88.0
40.	8.37	33.374	25.96	0.143	=88.0	2.21	=88.0
43.	8.34	33.375	25.97	0.150	=88.0	1.90	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D122	LAT LON	47-15.4N 124-24.5W	DATE TIME	4/10/80 649(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.31	32.082	24.10	0.000	=88.0	6.12	-3.42
10.	13.06	32.077	24.14	0.038	=88.0	6.17	=88.0
20.	10.90	32.647	24.98	0.072	=88.0	5.63	=88.0
30.	9.15	33.063	25.60	0.099	=88.0	3.02	=88.0
40.	8.26	33.398	26.00	0.122	=88.0	1.68	=88.0
41.	8.26	33.400	26.00	0.124	=88.0	1.63	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D123	LAT LON	47-12.6N 124-23.0W	DATE TIME	4/10/80 750(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.45	32.158	24.13	0.000	=88.0	6.00	-0.60
10.	13.33	32.168	24.16	0.038	=88.0	5.96	-1.89
20.	12.44	32.275	24.41	0.075	=88.0	5.76	-3.16
30.	10.42	32.748	25.15	0.107	=88.0	5.11	-3.95
40.	8.25	33.398	26.00	0.132	=88.0	1.89	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D124	LAT LON	47-09.8N 124-21.6W	DATE TIME	4/10/80 843(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.55	31.055	23.26	0.000	=88.0	6.01	0.40
10.	13.60	32.226	24.15	0.042	=88.0	5.94	-0.72
20.	12.15	32.370	24.54	0.078	=88.0	5.47	-1.77
30.	9.14	33.007	25.56	0.108	=88.0	4.01	-2.50
40.	8.23	33.400	26.01	0.130	=88.0	2.45	-3.79
41.	8.22	33.405	26.01	0.132	=88.0	2.02	-3.93

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D125	LAT LON	47-07.0N 124-20.3W	DATE TIME	4/10/80 929(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.01	30.227	22.72	0.000	=88.0	5.59	0.01
10.	13.01	30.725	23.11	0.050	=88.0	5.48	-1.31
20.	13.05	32.236	24.27	0.092	=88.0	5.81	-2.29
30.	9.04	33.113	25.66	0.122	=88.0	3.66	-3.47
40.	8.43	33.332	25.92	0.145	=88.0	2.13	=88.0
43.	8.42	33.338	25.93	0.151	=88.0	1.89	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D126	LAT LON	47-07.1N 124-58.0W	DATE TIME	4/10/80 1223(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.32	32.337	23.87	0.000	=88.0	5.37	1.11
10.	15.32	32.341	23.88	0.041	=88.0	5.30	0.67
20.	15.26	32.338	23.89	0.081	=88.0	5.33	0.22
30.	11.15	32.535	24.85	0.117	=88.0	6.28	-0.24
40.	9.71	32.601	25.15	0.147	=88.0	6.39	-0.67
50.	8.79	32.620	25.31	0.175	=88.0	6.15	-1.09
60.	8.30	32.671	25.42	0.201	=88.0	6.00	-1.42
70.	8.21	32.710	25.47	0.227	=88.0	5.90	-1.68
80.	8.06	32.832	25.59	0.252	=88.0	5.69	-1.92
90.	7.96	33.060	25.78	0.275	=88.0	5.42	-2.18
100.	7.87	33.210	25.91	0.297	=88.0	5.14	-2.43
125.	7.83	33.710	26.31	0.345	=88.0	3.61	-3.04
150.	7.42	33.886	26.50	0.387	=88.0	2.66	-3.76
175.	7.33	33.909	26.54	0.426	=88.0	2.19	=88.0
195.	7.25	33.927	26.56	0.456	=88.0	2.04	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D127	LAT LON	47-13.5N 124-52.1W	DATE TIME	4/10/80 1351(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.92	32.294	23.93	0.000	=88.0	5.34	1.63
10.	14.86	32.299	23.94	0.040	=88.0	5.37	0.77
20.	14.60	32.300	24.00	0.080	=88.0	5.44	0.13
30.	10.71	32.484	24.89	0.115	=88.0	5.84	-0.42
40.	9.19	32.602	25.23	0.144	=88.0	5.83	-1.06
50.	8.55	32.703	25.41	0.171	=88.0	5.70	-1.41
60.	8.29	32.890	25.60	0.196	=88.0	5.28	-1.81
70.	8.27	33.049	25.72	0.220	=88.0	4.69	-2.14
80.	8.11	33.284	25.93	0.242	=88.0	4.31	-2.40
90.	8.04	33.419	26.05	0.262	=88.0	4.11	-2.63
100.	7.93	33.573	26.19	0.282	=88.0	3.85	-2.84
125.	7.59	33.832	26.44	0.325	=88.0	2.82	-3.50
150.	7.38	33.895	26.52	0.365	=88.0	2.49	-4.12
175.	7.30	33.914	26.54	0.404	=88.0	2.18	=88.0
197.	7.17	33.938	26.58	0.422	=88.0	2.25	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D128	LAT LON	47-17.7N 124-45.0W	DATE TIME	4/10/80 1508(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.73	32.314	23.98	0.000	=88.0	5.49	0.96
10.	14.50	32.311	24.03	0.039	=88.0	5.39	0.37
20.	12.61	32.320	24.42	0.077	=88.0	5.67	-0.34
30.	9.57	32.716	25.26	0.108	=88.0	4.96	-1.04
40.	8.77	32.781	25.44	0.135	=88.0	4.85	-1.51
50.	8.55	33.012	25.65	0.159	=88.0	4.37	-1.88
60.	8.03	33.183	25.87	0.182	=88.0	4.04	-2.26
70.	8.04	33.420	26.05	0.203	=88.0	4.06	-2.58
80.	7.96	33.573	26.18	0.222	=88.0	3.73	-2.84
90.	7.91	33.643	26.24	0.240	=88.0	3.36	-3.14
100.	7.69	33.765	26.37	0.258	=88.0	2.96	-3.44
125.	7.43	33.889	26.51	0.298	=88.0	2.36	-4.12
150.	7.38	33.902	26.52	0.337	=88.0	2.06	=88.0
175.	7.37	33.905	26.53	0.376	=88.0	2.04	=88.0
180.	7.37	33.905	26.53	0.384	=88.0	2.04	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D129	LAT LON	47-26.0N 124-48.1W	DATE TIME	4/10/80 1637(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.87	32.321	24.17	0.000	=88.0	5.47	0.49
10.	13.74	32.328	24.20	0.038	=88.0	5.44	-0.02
20.	12.28	32.398	24.54	0.074	=88.0	5.50	-0.75
30.	10.43	32.718	25.12	0.105	=88.0	5.20	-1.44
40.	9.16	33.040	25.58	0.132	=88.0	4.22	-2.05
50.	8.31	33.254	25.88	0.154	=88.0	3.64	-2.51
60.	7.95	33.380	26.03	0.175	=88.0	3.67	-2.86
70.	7.84	33.556	26.19	0.195	=88.0	3.56	-3.17
80.	7.81	33.673	26.28	0.213	=88.0	2.93	-3.49
90.	7.73	33.744	26.35	0.230	=88.0	2.54	-3.84
100.	7.51	33.847	26.46	0.247	=88.0	2.25	-4.15
125.	7.43	33.888	26.50	0.286	=88.0	1.85	=88.0
150.	7.41	33.895	26.51	0.325	=88.0	1.74	=88.0
175.	7.40	33.898	26.52	0.364	=88.0	1.78	=88.0
200.	7.38	33.902	26.52	0.403	=88.0	1.76	=88.0
232.	7.37	33.904	26.53	0.454	=88.0	1.73	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D130	LAT LON	47-31.6N 124-58.3W	DATE TIME	4/10/80 1803(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.90	32.315	23.95	0.000	=88.0	5.35	-0.07
10.	14.79	32.317	23.97	0.040	=88.0	5.47	-0.72
20.	12.95	32.373	24.39	0.077	=88.0	5.60	-1.30
30.	11.10	32.497	24.83	0.111	=88.0	5.81	-1.92
40.	9.30	32.608	25.22	0.141	=88.0	5.73	-2.43
50.	8.70	32.776	25.45	0.167	=88.0	5.30	-2.82
60.	8.40	32.962	25.64	0.192	=88.0	4.73	-3.15
70.	8.00	33.189	25.87	0.215	=88.0	4.35	-3.43
80.	7.90	33.509	26.14	0.235	=88.0	3.74	-3.67
90.	7.78	33.661	26.28	0.254	=88.0	3.06	-3.97
100.	7.64	33.794	26.40	0.271	=88.0	2.44	=88.0
125.	7.53	33.855	26.46	0.312	=88.0	1.64	=88.0
150.	7.40	33.884	26.51	0.351	=88.0	1.46	=88.0
175.	7.37	33.893	26.52	0.390	=88.0	1.43	=88.0
193.	7.32	33.900	26.53	0.418	=88.0	1.46	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D131	LAT LON	47-07.2N 124-58.1W	DATE TIME	5/10/80 2327(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.56	32.330	23.82	0.000	0.552	5.77	-2.97
10.	15.49	32.325	23.83	0.041	0.551	5.83	-3.78
20.	14.88	32.317	23.95	0.082	0.567	5.88	-4.20
30.	10.70	32.567	24.96	0.117	0.645	7.05	=88.0
40.	9.57	32.609	25.18	0.146	0.502	6.81	=88.0
50.	8.95	32.612	25.28	0.174	0.482	6.48	=88.0
60.	8.63	32.645	25.36	0.200	0.445	6.29	=88.0
70.	8.37	32.716	25.45	0.227	0.426	6.00	=88.0
80.	7.83	32.995	25.75	0.251	0.410	5.78	=88.0
90.	8.01	33.206	25.89	0.273	0.410	5.17	=88.0
100.	8.01	33.436	26.07	0.294	0.431	4.18	=88.0
125.	7.70	33.792	26.39	0.339	0.590	2.34	=88.0
150.	7.41	33.898	26.52	0.380	0.691	1.84	=88.0
175.	7.34	33.916	26.54	0.418	0.626	1.83	=88.0
188.	7.34	33.916	26.54	0.439	0.639	1.82	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D131A	LAT LON	47-07.7N 124-57.9W	DATE TIME	6/10/80 144(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.50	32.329	23.83	0.000	0.550	5.69	-3.00
10.	15.49	32.333	23.83	0.041	0.551	5.51	-3.76
20.	14.87	32.316	23.95	0.081	0.560	5.77	-4.16
30.	11.14	32.556	24.87	0.117	0.651	6.82	=88.0
40.	9.68	32.602	25.16	0.147	0.546	7.07	=88.0
50.	8.94	32.618	25.29	0.175	0.475	6.51	=88.0
60.	8.45	32.676	25.41	0.201	0.439	6.22	=88.0
70.	8.16	32.838	25.58	0.226	0.420	5.86	=88.0
80.	7.89	32.926	25.68	0.249	0.414	5.60	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-07.3N DATE 6/10/80
STATION D132 LON 124-57.4W TIME 551(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.71	32.346	23.80	0.000	0.500	5.61	-2.94
10.	15.71	32.347	23.80	0.041	0.502	5.61	-3.69
20.	15.56	32.339	23.82	0.083	0.506	5.53	-4.06
30.	13.40	32.389	24.32	0.121	0.547	5.92	=88.0
40.	9.95	32.595	25.11	0.154	0.529	6.65	=88.0
50.	9.20	32.627	25.25	0.182	0.475	6.49	=88.0
60.	8.51	32.676	25.40	0.209	0.439	6.01	=88.0
70.	8.13	32.829	25.57	0.234	0.419	5.70	=88.0
80.	7.87	32.973	25.72	0.258	0.414	5.43	=88.0
90.	8.00	33.189	25.87	0.280	0.417	4.98	=88.0
100.	8.00	33.453	26.08	0.301	0.450	3.90	=88.0
125.	7.65	33.811	26.41	0.346	0.556	2.62	=88.0
150.	7.44	33.892	26.51	0.386	0.681	1.88	=88.0
175.	7.41	33.899	26.52	0.426	0.674	1.79	=88.0
193.	7.37	33.908	26.53	0.454	0.681	1.81	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-07.3N DATE 6/10/80
STATION D132A LON 124-57.4W TIME 835(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.69	32.344	23.80	0.000	0.498	5.53	0.06
10.	15.69	32.344	23.80	0.041	0.499	5.54	-0.43
20.	15.49	32.335	23.84	0.083	0.509	5.55	-0.77
30.	12.33	32.453	24.57	0.120	0.623	6.22	-1.15
40.	9.98	32.602	25.11	0.151	0.553	6.78	-1.66
50.	8.98	32.624	25.28	0.179	0.468	6.51	-2.05
60.	8.54	32.658	25.38	0.206	0.445	6.08	-2.34
70.	8.22	32.754	25.50	0.232	0.424	5.88	-2.56
80.	7.98	32.895	25.65	0.256	0.417	5.62	-2.80
90.	8.04	33.094	25.79	0.279	0.416	5.42	-3.00
100.	8.04	33.292	25.95	0.301	0.419	4.63	-3.22
125.	7.72	33.775	26.38	0.348	0.570	2.65	-3.85
150.	7.48	33.881	26.49	0.389	0.636	1.92	=88.0
156.	7.48	33.883	26.49	0.399	0.621	1.91	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-07.4N DATE 6/10/80
STATION D133 LON 124-58.0W TIME 1135(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.75	32.350	23.79	0.000	0.506	5.37	0.67
10.	15.74	32.349	23.79	0.041	0.504	5.46	0.18
20.	15.65	32.342	23.81	0.083	0.510	5.55	-0.17
30.	13.48	32.395	24.30	0.122	0.593	5.96	-0.52
40.	10.13	32.561	25.05	0.155	0.570	6.70	-1.08
50.	9.36	32.608	25.21	0.183	0.497	6.62	-1.44
60.	8.60	32.658	25.37	0.210	0.445	6.23	-1.76
70.	8.36	32.749	25.48	0.236	0.434	5.71	-2.01
80.	8.05	32.850	25.60	0.261	0.426	5.59	-2.26
90.	7.93	32.987	25.73	0.285	0.424	5.60	-2.48
100.	8.08	33.283	25.94	0.307	0.429	5.17	-2.71
125.	7.78	33.730	26.33	0.355	0.569	2.68	-3.36
150.	7.44	33.891	26.51	0.396	0.679	1.93	=88.0
175.	7.40	33.900	26.52	0.435	0.659	1.86	=88.0
194.	7.36	33.910	26.53	0.465	0.678	1.80	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-07.9N DATE 6/10/80
STATION D133A LON 124-58.0W TIME 1252(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.76	32.349	23.79	0.000	0.503	5.50	0.74
10.	15.73	32.349	23.79	0.041	0.505	5.51	0.17
20.	15.17	32.273	23.86	0.083	0.523	5.70	-0.21
30.	13.08	32.411	24.40	0.121	0.636	6.19	-0.68
40.	9.99	32.535	25.09	0.153	0.541	6.77	-1.21
50.	9.39	32.599	25.20	0.182	0.496	6.66	-1.57
52.	9.28	32.602	25.22	0.188	0.489	6.67	-1.62

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-08.3N DATE 6/10/80
STATION D134 LON 124-58.2W TIME 1645(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.83	32.343	23.77	0.000	0.514	5.64	0.51
10.	15.77	32.342	23.78	0.042	0.517	5.65	-0.11
20.	15.74	32.344	23.79	0.083	0.520	5.54	-0.44
30.	13.94	32.349	24.17	0.123	0.584	5.95	-0.74
40.	10.57	32.562	24.98	0.157	0.648	7.00	-1.32
50.	9.21	32.592	25.22	0.186	0.495	6.74	-1.71
60.	8.63	32.644	25.35	0.213	0.451	6.46	-2.05
70.	8.35	32.808	25.52	0.239	0.435	5.87	-2.27
80.	7.95	33.029	25.76	0.262	0.425	5.49	-2.52
90.	8.06	33.265	25.93	0.284	0.432	4.87	-2.73
100.	8.00	33.483	26.11	0.305	0.445	3.75	-2.99
125.	7.63	33.821	26.42	0.349	0.599	2.21	-3.71
150.	7.44	33.891	26.51	0.389	0.669	1.86	=88.0
175.	7.38	33.907	26.53	0.428	0.660	1.80	=88.0
194.	7.35	33.913	26.54	0.457	0.690	1.80	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-07.2N	DATE	6/10/80	
STATION		D135	LON	124-58.0W	TIME	1812(+7)	
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	15.86	32.339	23.76	0.000	0.510	5.57	-0.53
10.	15.83	32.340	23.76	0.042	0.513	5.54	-0.99
20.	15.74	32.343	23.79	0.083	0.511	5.67	-1.36
30.	13.86	32.338	24.18	0.123	0.572	5.89	-1.71
40.	10.52	32.568	24.99	0.157	0.626	6.83	-2.28
50.	9.59	32.610	25.18	0.186	0.513	6.63	-2.72
60.	8.65	32.610	25.32	0.213	0.451	6.48	-2.99
70.	8.50	32.701	25.42	0.240	0.435	6.13	-3.26
80.	7.92	32.956	25.70	0.264	0.418	5.59	-3.45
90.	8.08	33.265	25.92	0.287	0.427	4.61	-3.68
100.	8.00	33.424	26.06	0.307	0.428	3.99	-3.86
125.	7.62	33.820	26.42	0.352	0.505	2.67	=88.0
150.	7.43	33.892	26.51	0.392	0.683	1.94	=88.0
175.	7.39	33.903	26.52	0.431	0.707	1.79	=88.0
189.	7.34	33.915	26.54	0.453	0.720	1.79	=88.0

INTERPOLATED AND COMPUTED VALUES

	CRUISE STATION	WS009 D136	LAT LON	47-06.6N 124-59.3W	DATE TIME	6/10/80 2019(+7)	
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.82	32.329	23.76	0.000	0.509	5.64	-2.96
10.	15.82	32.327	23.76	0.042	0.504	5.62	-3.62
20.	15.75	32.330	23.77	0.083	0.507	5.65	-4.00
30.	15.41	32.327	23.85	0.125	0.508	5.72	=88.0
40.	12.33	32.470	24.59	0.162	0.636	6.51	=88.0
50.	9.93	32.592	25.11	0.193	0.571	6.99	=88.0
60.	9.01	32.608	25.27	0.222	0.464	6.60	=88.0
70.	8.60	32.661	25.37	0.248	0.441	6.22	=88.0
80.	8.00	32.886	25.64	0.274	0.419	5.80	=88.0
90.	8.11	33.130	25.81	0.297	0.417	5.40	=88.0
100.	8.06	33.324	25.97	0.318	0.434	4.42	=88.0
125.	7.68	33.788	26.39	0.365	0.525	2.58	=88.0
150.	7.47	33.877	26.49	0.406	0.605	2.03	=88.0
175.	7.38	33.904	26.52	0.445	0.660	1.79	=88.0
200.	7.32	33.917	26.54	0.483	0.658	1.76	=88.0
250.	7.17	33.938	26.58	0.560	0.601	1.89	=88.0
300.	6.71	33.993	26.69	0.633	0.508	1.96	=88.0
350.	6.34	34.015	26.75	0.702	0.484	1.82	=88.0
400.	5.93	34.040	26.82	0.768	0.494	1.54	=88.0
450.	5.36	34.080	26.93	0.830	0.477	1.15	=88.0
495.	5.19	34.099	26.96	0.883	0.464	0.97	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE		WS009	LAT	47-06.8N	DATE	6/10/80	
STATION		D137	LON	124-57.2W	TIME	2319(+7)	
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	15.81	32.331	23.76	0.000	0.498	5.64	-3.11
10.	15.80	32.333	23.76	0.042	0.501	5.58	-3.64
20.	15.75	32.342	23.78	0.083	0.503	5.59	-4.07
30.	13.70	32.343	24.22	0.123	0.575	5.99	=88.0
40.	11.38	32.527	24.80	0.157	0.646	6.86	=88.0
50.	9.91	32.586	25.11	0.188	0.549	6.92	=88.0
60.	8.95	32.603	25.27	0.216	0.460	6.64	=88.0
70.	8.66	32.630	25.34	0.243	0.447	6.53	=88.0
80.	8.25	32.778	25.52	0.269	0.427	5.97	=88.0
90.	7.97	32.977	25.71	0.293	0.417	5.59	=88.0
100.	8.09	33.196	25.87	0.315	0.428	4.82	=88.0
125.	7.79	33.715	26.32	0.364	0.532	2.97	=88.0
150.	7.46	33.883	26.50	0.406	0.641	1.93	=88.0
175.	7.38	33.903	26.52	0.445	0.634	1.95	=88.0
191.	7.35	33.912	26.53	0.470	0.684	1.83	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION		WS009 D138	LAT LON	47-07.2N 124-58.2W	DATE TIME	7/10/80 548(+7)	
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.78	32.326	23.77	0.000	0.487	5.52	-3.24
10.	15.78	32.327	23.77	0.042	0.486	5.48	-3.77
20.	15.73	32.326	23.77	0.083	0.490	5.54	-4.15
30.	15.03	32.323	23.93	0.124	0.498	5.67	=88.0
40.	11.46	32.499	24.77	0.160	0.563	6.60	=88.0
50.	9.35	32.597	25.21	0.190	0.488	6.60	=88.0
60.	8.72	32.631	25.33	0.218	0.448	6.40	=88.0
70.	8.49	32.704	25.42	0.244	0.431	6.05	=88.0
80.	7.96	32.928	25.68	0.269	0.419	5.60	=88.0
90.	8.10	33.212	25.88	0.291	0.428	4.79	=88.0
100.	8.02	33.312	25.97	0.312	0.422	4.49	=88.0
125.	7.60	33.839	26.44	0.359	0.594	2.43	=88.0
150.	7.47	33.881	26.49	0.399	0.652	2.11	=88.0
175.	7.43	33.892	26.51	0.438	0.686	1.93	=88.0
200.	7.37	33.907	26.53	0.477	0.657	1.83	=88.0
215.	7.27	33.929	26.56	0.501	0.642	1.83	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-07.0N DATE 7/10/80
STATION D138A LON 124-58.2W TIME 842(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	15.77	32.327	23.77	0.000	0.488	5.56	0.09
10.	15.75	32.324	23.77	0.042	0.488	5.59	-0.38
20.	15.71	32.323	23.78	0.083	0.493	5.70	-0.71
30.	14.42	32.324	24.06	0.124	0.515	5.81	-1.02
40.	10.92	32.535	24.89	0.158	0.534	6.68	-1.49
50.	9.77	32.599	25.14	0.188	0.486	6.74	-1.95
60.	8.90	32.604	25.28	0.216	0.461	6.64	-2.32
70.	8.64	32.665	25.37	0.243	0.436	6.27	-2.57
80.	8.26	32.808	25.54	0.269	0.428	5.95	-2.80
90.	8.06	33.022	25.73	0.292	0.421	5.64	-3.02
100.	8.06	33.246	25.91	0.314	0.427	4.91	-3.23
125.	7.68	33.786	26.39	0.362	0.555	2.80	-3.80
150.	7.49	33.876	26.49	0.403	0.635	2.09	=88.0
175.	7.40	33.902	26.52	0.442	0.686	1.82	=88.0
200.	7.33	33.915	26.54	0.481	0.659	1.80	=88.0
250.	7.10	33.952	26.60	0.557	0.571	1.87	=88.0
273.	6.82	33.974	26.66	0.591	0.557	1.91	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-07.1N DATE 7/10/80
STATION D140 LON 124-57.8W TIME 1717(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	16.08	32.379	23.74	0.000	0.497	5.25	0.46
10.	15.88	32.344	23.76	0.042	0.506	5.26	-0.07
20.	15.79	32.336	23.77	0.084	0.519	5.23	-0.42
30.	15.22	32.327	23.89	0.125	0.530	5.39	-0.73
40.	11.37	32.542	24.82	0.161	0.670	6.26	-1.19
50.	10.05	32.560	25.06	0.191	0.564	6.37	-1.65
60.	9.14	32.599	25.24	0.220	0.487	6.26	-1.99
70.	8.71	32.644	25.34	0.247	0.453	6.07	-2.28
80.	8.26	32.789	25.52	0.273	0.443	5.68	-2.53
90.	8.02	32.910	25.65	0.297	0.429	5.51	-2.78
100.	7.96	33.310	25.98	0.319	0.429	4.89	-2.99
125.	7.73	33.750	26.35	0.366	0.550	3.34	-3.57
150.	7.51	33.864	26.47	0.408	0.642	2.39	=88.0
175.	7.44	33.888	26.50	0.447	0.710	2.13	=88.0
192.	7.43	33.891	26.51	0.474	0.768	2.01	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-07.2N DATE 7/10/80
STATION D139 LON 124-58.2W TIME 1111(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	15.80	32.320	23.76	0.000	=88.0	5.51	1.24
10.	15.78	32.318	23.76	0.042	0.525	5.47	0.06
20.	15.74	32.321	23.77	0.083	0.522	5.45	-0.17
30.	15.14	32.323	23.90	0.124	0.541	5.58	-0.36
40.	10.95	32.528	24.88	0.160	0.605	6.55	-0.73
50.	9.61	32.598	25.16	0.190	0.534	6.67	-1.17
60.	9.05	32.592	25.25	0.218	0.493	6.47	-1.48
70.	8.71	32.646	25.34	0.245	0.467	6.29	-1.78
80.	8.50	32.702	25.42	0.271	0.464	6.06	-2.02
90.	8.00	32.894	25.64	0.296	0.443	5.66	-2.26
100.	8.07	33.240	25.90	0.319	0.469	5.01	-2.49
116.	7.88	33.621	26.23	0.351	0.511	3.69	-2.88

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-07.3N DATE 7/10/80
STATION D141 LON 124-58.1W TIME 2311(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(μ W/CM2)
0.	16.08	32.356	23.72	0.000	0.483	5.33	-3.20
10.	16.06	32.363	23.73	0.042	0.481	5.29	-3.57
20.	15.98	32.403	23.78	0.084	0.481	5.40	-3.97
30.	14.77	32.324	23.98	0.124	0.510	5.57	=88.0
40.	11.74	32.433	24.67	0.161	0.648	6.23	=88.0
50.	10.13	32.589	25.07	0.192	0.589	6.34	=88.0
60.	9.23	32.602	25.23	0.220	0.491	6.30	=88.0
70.	8.74	32.642	25.33	0.248	0.445	6.18	=88.0
80.	8.26	32.776	25.51	0.274	0.429	5.87	=88.0
90.	8.08	32.924	25.65	0.298	0.424	5.61	=88.0
100.	8.07	33.097	25.79	0.321	0.420	5.17	=88.0
125.	7.82	33.682	26.29	0.371	0.521	3.63	=88.0
150.	7.50	33.868	26.48	0.413	0.628	2.62	=88.0
175.	7.39	33.900	26.52	0.453	0.675	2.27	=88.0
194.	7.34	33.912	26.54	0.482	0.698	2.11	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-13.4N DATE 8/10/80
STATION D142 LON 124-30.5W TIME 319(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.77	31.182	23.11	0.000	1.250	6.29	=88.0
10.	13.58	32.031	24.00	0.044	1.216	6.42	=88.0
20.	10.69	32.683	25.05	0.078	0.755	5.79	=88.0
30.	8.42	33.184	25.81	0.104	0.505	4.03	=88.0
40.	7.96	33.421	26.06	0.125	0.448	3.85	=88.0
45.	7.92	33.544	26.16	0.134	0.474	3.57	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-13.4N DATE 8/10/80
STATION D142A LON 124-30.5W TIME 319(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.67	31.044	23.02	0.000	1.234	6.25	-2.46
10.	13.43	32.120	24.10	0.044	0.851	5.95	-3.98
20.	12.25	32.309	24.48	0.080	0.817	5.74	=88.0
30.	8.84	33.076	25.66	0.109	0.534	4.40	=88.0
40.	8.07	33.344	25.99	0.132	0.478	3.74	=88.0
50.	7.90	33.575	26.19	0.151	0.498	3.64	=88.0
60.	7.86	33.628	26.24	0.169	1.263	2.78	=88.0
65.	7.86	33.670	26.27	0.178	1.807	2.60	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-13.8N DATE 8/10/80
STATION D142B LON 124-30.0W TIME 420(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.75	31.203	23.13	0.000	1.248	6.34	-3.07
10.	13.49	32.025	24.02	0.044	1.213	6.48	=88.0
20.	12.18	32.369	24.54	0.080	0.795	5.70	=88.0
30.	8.85	33.074	25.66	0.109	0.528	4.22	=88.0
40.	7.98	33.390	26.04	0.131	0.456	3.75	=88.0
45.	7.95	33.432	26.07	0.140	0.454	3.68	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-13.6N DATE 8/10/80
STATION D142C LON 124-29.8W TIME 856(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.39	31.441	23.38	0.000	1.263	6.20	0.34
10.	14.20	31.754	23.66	0.044	1.209	6.20	-0.67
20.	10.07	32.781	25.23	0.079	0.674	5.31	-1.72
30.	8.47	33.168	25.79	0.104	0.511	4.08	-2.34
40.	8.01	33.372	26.02	0.125	0.475	3.63	-2.75
50.	7.91	33.564	26.18	0.145	0.719	3.35	-3.18
60.	7.87	33.616	26.23	0.163	1.260	2.80	-3.76
62.	7.87	33.623	26.23	0.166	2.581	2.41	-3.87

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-07.2N DATE 8/10/80
STATION D143 LON 124-29.0W TIME 1143(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.19	31.477	23.45	0.000	1.118	5.75	1.05
10.	13.48	31.984	23.99	0.042	1.027	5.65	0.18
20.	12.80	32.227	24.31	0.080	0.855	5.49	-1.12
30.	8.91	33.071	25.64	0.110	0.564	4.46	-2.02
40.	8.00	33.393	26.03	0.132	0.506	3.70	-2.36
50.	7.87	33.554	26.18	0.151	0.541	3.74	-2.85
60.	7.86	33.657	26.26	0.170	1.306	3.15	-3.50
66.	7.85	33.662	26.27	0.180	1.923	3.04	-4.05

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 46-54.9N DATE 8/10/80
STATION D144 LON 124-31.5W TIME 1333(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.38	31.298	23.28	0.000	1.103	5.99	1.33
10.	14.56	32.150	23.89	0.043	0.923	5.91	-0.00
20.	11.62	32.512	24.75	0.080	0.673	5.63	-0.79
30.	8.49	33.133	25.76	0.107	0.510	4.30	-1.41
40.	8.06	33.368	26.01	0.129	0.480	3.94	-1.94
50.	8.01	33.586	26.18	0.148	0.467	3.61	-2.27
60.	7.90	33.744	26.32	0.166	0.750	3.25	-2.68
70.	7.88	33.757	26.34	0.183	0.978	2.88	-3.37
80.	7.86	33.760	26.34	0.200	1.402	2.67	-4.03
91.	7.85	33.760	26.34	0.219	1.809	2.49	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE W8009 LAT 47-13.2N DATE 9/10/80
STATION D145 LON 124-30.0W TIME 845(+7)

DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.73	30.424	22.74	0.000	1.322	6.14	0.20
10.	13.88	31.278	23.36	0.049	1.192	6.18	-1.08
20.	11.09	32.613	24.92	0.087	0.646	6.03	-2.14
30.	8.30	33.234	25.87	0.113	0.561	4.26	-2.87
40.	7.94	33.449	26.09	0.133	0.474	3.49	-3.39
50.	7.88	33.582	26.20	0.152	1.662	2.65	-3.74
58.	7.86	33.634	26.24	0.167	4.873	2.04	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE	W8009	LAT	47-20.5N	DATE	9/10/80		
STATION	D146	LON	124-45.9W	TIME	1312(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(uW/CM2)
0.	14.29	32.101	23.91	0.000	1.264	5.95	1.02
10.	14.26	32.142	23.95	0.040	1.205	6.12	0.29
20.	13.90	32.339	24.18	0.079	0.753	6.16	-0.50
30.	10.19	32.564	25.04	0.113	0.581	6.18	-1.18
40.	8.85	32.656	25.33	0.141	0.480	5.98	-1.59
50.	8.43	32.765	25.48	0.167	0.447	5.76	-2.00
60.	8.24	32.937	25.64	0.191	0.436	5.52	-2.48
70.	8.06	33.205	25.88	0.214	0.435	5.03	-2.71
80.	7.92	33.333	26.00	0.235	0.429	4.59	-2.95
90.	7.89	33.502	26.14	0.255	0.431	4.31	-3.29
100.	7.88	33.602	26.22	0.273	0.437	3.92	-3.48
125.	7.59	33.827	26.43	0.317	0.472	2.95	-4.06
150.	7.36	33.997	26.53	0.356	0.695	2.14	=88.0
175.	7.30	33.917	26.55	0.395	0.726	1.88	=88.0
184.	7.24	33.927	26.56	0.409	0.825	1.87	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	WS009 D147	LAT LON	47-20.6N 124-46.0W	DATE TIME	9/10/80 1905(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.23	32.136	23.95	0.000	1.391	6.30	-2.78
10.	14.23	32.156	23.97	0.040	1.373	6.34	-3.94
20.	13.08	32.386	24.38	0.078	0.722	6.14	-88.0
30.	9.35	32.604	25.21	0.109	0.512	6.29	-88.0
40.	8.68	32.620	25.38	0.136	0.468	5.80	-88.0
50.	8.37	32.833	25.58	0.162	0.440	5.49	-88.0
60.	8.07	33.157	25.84	0.185	0.431	4.65	-88.0
70.	7.91	33.336	26.00	0.206	0.416	4.53	-88.0
80.	7.91	33.491	26.12	0.226	0.419	4.34	-88.0
90.	7.81	33.709	26.31	0.244	0.439	3.48	-88.0
100.	7.68	33.779	26.38	0.261	0.450	3.07	-88.0
125.	7.44	33.882	26.50	0.302	0.474	2.53	-88.0
150.	7.33	33.913	26.54	0.341	0.692	1.94	-88.0
175.	7.25	33.927	26.56	0.379	0.689	1.87	-88.0
177.	7.24	33.928	26.56	0.382	0.701	1.84	-88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D148	LAT LON	47-20.9N 124-46.3W	DATE TIME	10/10/80 107(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.19	32.265	24.06	0.000	1.110	6.09	-2.96
10.	14.08	32.343	24.14	0.038	1.018	6.19	-3.92
20.	13.45	32.360	24.28	0.076	0.820	6.22	=88.0
30.	9.34	32.610	25.22	0.108	0.518	5.96	=88.0
40.	8.55	32.744	25.44	0.135	0.449	6.01	=88.0
50.	8.28	32.968	25.66	0.159	0.436	5.21	=88.0
60.	8.00	33.284	25.95	0.182	0.434	4.53	=88.0
70.	7.93	33.453	26.10	0.202	0.434	4.07	=88.0
80.	7.85	33.669	26.27	0.220	0.442	3.54	=88.0
90.	7.74	33.766	26.35	0.238	0.461	3.23	=88.0
100.	7.62	33.814	26.42	0.254	0.450	3.04	=88.0
125.	7.40	33.839	26.52	0.294	0.490	2.51	=88.0
150.	7.19	33.938	26.58	0.333	0.581	2.00	=88.0
175.	7.10	33.954	26.60	0.370	0.562	1.97	=88.0
200.	6.99	33.962	26.62	0.407	0.535	2.11	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D149	LAT LON	47-20.2N 124-45.1W	DATE TIME	10/10/80 721(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT	DYN-HT M2/S2	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.25	32.350	24.11	0.000	=88.0	4.91	-1.06
10.	14.26	32.348	24.11	0.038	0.833	5.72	-2.29
20.	14.00	32.348	24.16	0.077	0.889	5.81	-2.99
30.	9.74	32.623	25.16	0.110	0.566	5.51	-3.57
40.	8.50	32.800	25.50	0.136	0.472	5.27	-3.86
50.	8.27	33.020	25.70	0.161	0.464	4.87	-4.11
60.	8.05	33.319	25.97	0.182	0.470	4.06	=88.0
70.	7.89	33.550	26.17	0.202	0.445	3.69	=88.0
80.	7.88	33.602	26.22	0.221	0.444	3.76	=88.0
90.	7.76	33.735	26.34	0.238	0.490	3.26	=88.0
100.	7.65	33.795	26.40	0.255	0.476	2.98	=88.0
125.	7.39	33.898	26.52	0.295	0.509	2.39	=88.0
150.	7.36	33.907	26.53	0.334	0.602	2.11	=88.0
164.	7.24	33.928	26.56	0.356	0.748	1.87	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE	W8009	LAT	47-20.3N	DATE	10/10/80		
STATION	D150	LON	124-45.5W	TIME	1309(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(μ W/CM2)
0.	14.12	32.319	24.11	0.000	0.781	5.66	1.25
10.	14.12	32.337	24.13	0.038	0.777	5.64	0.44
20.	14.02	32.340	24.15	0.076	0.776	5.63	-0.35
30.	11.27	32.477	24.79	0.111	0.644	5.48	-0.97
40.	8.93	32.725	25.37	0.140	0.502	5.09	-1.50
50.	8.40	32.916	25.60	0.166	0.463	4.67	-1.88
60.	8.14	33.146	25.82	0.189	0.452	4.65	-2.22
70.	8.10	33.287	25.94	0.210	0.461	4.12	-2.56
80.	7.88	33.545	26.17	0.230	0.469	3.57	-2.77
90.	7.77	33.695	26.30	0.248	0.500	3.21	-3.11
100.	7.69	33.762	26.37	0.266	0.482	3.01	-3.50
125.	7.51	33.859	26.47	0.307	0.477	2.72	-4.12
150.	7.25	33.912	26.55	0.346	0.610	2.32	=88.0
175.	7.14	33.924	26.57	0.383	0.628	1.97	=88.0
193.	7.00	33.942	26.61	0.410	0.633	2.06	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE	W8009	LAT	47-20.5N	DATE	10/10/80		
STATION	D150A	LON	124-46.5W	TIME	1421(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(μ W/CM2)
0.	14.20	32.341	24.11	0.000	0.768	5.85	0.89
10.	14.07	32.337	24.14	0.038	0.762	5.82	0.10
20.	13.46	32.354	24.28	0.076	0.731	5.89	-0.55
30.	11.46	32.496	24.77	0.110	0.650	5.57	-1.25
40.	9.21	32.742	25.34	0.139	0.508	5.14	-1.81
50.	8.41	32.973	25.64	0.165	0.466	4.66	-2.23
60.	8.12	33.185	25.85	0.187	0.447	4.53	-2.53
70.	8.00	33.399	26.04	0.208	0.459	3.78	-2.85
80.	7.85	33.585	26.21	0.228	0.463	3.45	-3.15
90.	7.79	33.677	26.29	0.246	0.478	3.15	-3.45
100.	7.73	33.749	26.35	0.263	0.512	2.83	-3.71
125.	7.63	33.825	26.43	0.305	0.454	2.67	=88.0
150.	7.48	33.866	26.48	0.345	0.446	2.72	=88.0
175.	7.27	33.909	26.54	0.384	0.532	2.30	=88.0
200.	7.13	33.929	26.58	0.422	0.669	1.88	=88.0
221.	7.08	33.934	26.59	0.453	0.731	1.83	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE	WS009	LAT	47-20.9N	DATE	10/10/80		
STATION	D151	LON	124-45.6W	TIME	1915(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(μ W/CM2)
0.	14.82	32.318	23.97	0.000	0.674	5.60	-3.26
10.	14.61	32.322	24.01	0.039	0.679	5.64	-3.82
20.	14.02	32.344	24.16	0.078	0.741	5.72	=88.0
30.	11.16	32.519	24.84	0.113	0.644	5.63	=88.0
40.	9.55	32.720	25.27	0.142	0.501	4.79	=88.0
50.	8.41	32.990	25.66	0.168	0.460	4.48	=88.0
60.	8.13	33.270	25.92	0.190	0.452	4.20	=88.0
70.	7.98	33.431	26.07	0.210	0.457	3.70	=88.0
80.	7.93	33.493	26.12	0.230	0.461	3.47	=88.0
90.	7.82	33.641	26.26	0.249	0.465	3.27	=88.0
100.	7.65	33.787	26.39	0.266	0.473	3.01	=88.0
125.	7.59	33.816	26.43	0.307	0.471	2.83	=88.0
150.	7.38	33.886	26.51	0.347	0.794	2.33	=88.0
165.	7.34	33.896	26.52	0.370	1.306	2.09	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE	W8009	LAT	47-21.3N	DATE	11/10/80		
STATION	D152	LON	124-46.2W	TIME	102(+7)		
DEPTH	TEMP	SAL	SIGMAT	DYN-HT	ATTEN	OXYGEN	IRRADIANCE
M	C	0/00		M2/S2	/M	ML/L	LOG(μ W/CM2)
0.	13.94	32.340	24.17	0.000	0.774	5.61	-2.74
10.	13.90	32.342	24.18	0.038	0.775	5.60	-3.83
20.	13.68	32.354	24.23	0.075	0.761	5.63	=88.0
30.	10.62	32.541	24.95	0.109	0.583	5.62	=88.0
40.	9.44	32.687	25.26	0.138	0.507	5.00	=88.0
50.	8.65	32.984	25.62	0.164	0.465	4.64	=88.0
60.	8.30	33.087	25.75	0.187	0.459	4.39	=88.0
70.	8.11	33.282	25.93	0.209	0.458	4.02	=88.0
80.	7.93	33.508	26.13	0.229	0.458	3.72	=88.0
90.	7.81	33.662	26.27	0.247	0.455	3.47	=88.0
100.	7.78	33.709	26.31	0.265	0.453	3.36	=88.0
125.	7.51	33.861	26.47	0.307	0.453	2.89	=88.0
150.	7.34	33.897	26.52	0.346	0.441	2.88	=88.0
175.	7.24	33.910	26.55	0.384	0.708	2.18	=88.0
179.	7.24	33.911	26.55	0.390	0.715	2.05	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D153	LAT LON	47-20.5N 124-45.4W	DATE TIME	11/10/80 734(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT /M	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	14.86	32.319	23.96	0.000	=88.0	5.33	-1.37
10.	14.36	32.316	24.06	0.039	0.765	5.48	-1.89
20.	13.87	32.331	24.18	0.078	0.729	5.56	-2.44
30.	10.55	32.525	24.95	0.112	0.620	5.92	-3.00
40.	9.19	32.625	25.25	0.141	0.515	5.69	-3.41
50.	8.75	32.786	25.45	0.167	0.467	4.93	-3.68
60.	8.44	33.048	25.70	0.192	0.470	4.33	-3.95
70.	8.11	33.239	25.90	0.214	0.453	4.02	-4.15
80.	7.95	33.430	26.07	0.234	0.452	3.78	=88.0
90.	7.90	33.529	26.16	0.254	0.457	3.54	=88.0
100.	7.78	33.699	26.31	0.272	0.463	3.31	=88.0
125.	7.62	33.802	26.41	0.314	0.479	2.78	=88.0
150.	7.46	33.860	26.48	0.355	0.756	2.28	=88.0
163.	7.45	33.863	26.48	0.375	1.103	2.08	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D154	LAT LON	47-20.8N 124-46.1W	DATE TIME	11/10/80 1314(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT /M	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.99	32.256	24.09	0.000	0.819	5.46	0.17
10.	13.81	32.272	24.14	0.038	0.832	5.56	-0.62
20.	13.28	32.340	24.30	0.076	0.693	5.54	-1.43
30.	11.03	32.494	24.84	0.110	0.588	5.75	-2.03
40.	9.32	32.603	25.22	0.139	0.512	5.50	-2.50
50.	8.68	32.895	25.54	0.165	0.464	4.73	-2.91
60.	8.39	33.025	25.69	0.190	0.455	4.58	-3.19
70.	8.10	33.272	25.93	0.212	0.452	4.17	-3.54
80.	7.90	33.420	26.07	0.232	0.447	3.96	-3.78
90.	7.76	33.524	26.17	0.251	0.434	4.00	-4.01
100.	7.81	33.665	26.27	0.270	0.466	3.55	-4.20
125.	7.55	33.830	26.44	0.312	0.491	3.02	=88.0
150.	7.34	33.891	26.52	0.352	0.825	2.40	=88.0
175.	7.31	33.899	26.53	0.391	0.635	2.34	=88.0
178.	7.30	33.901	26.53	0.395	0.630	2.25	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D155	LAT LON	47-06.8N 124-40.4W	DATE TIME	11/10/80 1545(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT /M	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	15.14	32.302	23.89	0.000	0.674	5.28	0.63
10.	14.64	32.320	24.01	0.040	0.674	5.42	0.04
20.	13.77	32.355	24.21	0.078	0.794	5.53	-0.58
30.	10.56	32.501	24.93	0.112	0.584	5.57	-1.24
40.	8.70	32.686	25.38	0.141	0.482	5.57	-1.71
50.	8.43	32.844	25.54	0.166	0.455	5.21	-2.05
60.	8.26	33.020	25.70	0.190	0.446	4.94	-2.37
70.	8.09	33.160	25.84	0.213	0.434	4.64	-2.65
80.	8.04	33.303	25.96	0.234	0.445	4.22	-2.97
90.	8.00	33.413	26.05	0.254	0.430	4.10	-3.21
100.	7.82	33.632	26.25	0.273	1.367	3.64	-3.49
104.	7.81	33.638	26.25	0.281	1.785	3.19	-3.89

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D156	LAT LON	47-07.1N 124-17.0W	DATE TIME	12/10/80 823(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT /M	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.36	30.860	23.14	0.000	1.577	6.16	-0.54
10.	13.28	30.910	23.20	0.047	1.649	6.13	-2.50
20.	12.56	31.610	23.88	0.091	1.907	5.94	-3.94
30.	10.16	32.661	25.12	0.126	5.270	4.49	=88.0
33.	9.80	32.808	25.30	0.134	10.1	3.11	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D157	LAT LON	47-07.0N 124-29.0W	DATE TIME	12/10/80 1011(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT /M	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.85	30.785	22.99	0.000	1.050	6.33	0.97
10.	13.02	31.393	23.62	0.046	1.163	6.34	-0.81
20.	10.81	32.233	24.68	0.084	2.684	5.37	-2.61
30.	8.58	33.123	25.74	0.112	0.562	4.18	-3.76
40.	8.01	33.382	26.02	0.133	0.945	3.64	-4.13
50.	7.97	33.460	26.09	0.153	1.859	2.91	=88.0
60.	7.96	33.474	26.10	0.173	1.924	2.72	=88.0
64.	7.96	33.482	26.11	0.181	2.640	2.66	=88.0

INTERPOLATED AND COMPUTED VALUES

CRUISE STATION	W8009 D158	LAT LON	47-07.1N 124-17.3W	DATE TIME	13/10/80 840(+7)		
DEPTH M	TEMP C	SAL 0/00	SIGMAT M2/S2	DYN-HT /M	ATTEN /M	OXYGEN ML/L	IRRADIANCE LOG(uW/CM2)
0.	13.46	31.278	23.45	0.000	0.893	6.31	0.00
10.	13.42	31.289	23.46	0.045	0.882	6.26	-1.13
20.	12.32	31.502	23.84	0.087	1.996	6.01	-2.56
30.	11.60	31.895	24.28	0.126	3.244	5.25	-4.11
31.	11.43	31.982	24.37	0.129	4.212	5.11	=88.0

Phytoplankton Productivity

Phytoplankton production was measured at several stations using a variety of incubation techniques. In general, the ^{14}C -carbon assimilation method of Steemann-Nielsen (1952) was followed.

Simulated in situ incubations

Representative light depths were determined from continuous profiles of irradiance, or, infrequently, by using extinction coefficients derived from secchi disk measurements. Water was obtained from discrete depths using 5- or 50-l non-toxic plastic water samplers. Subsamples were drawn for replicate light and dark ^{14}C -carbon uptake measurements, and for determination of chlorophyll *a* and phaeopigments by fluorometry, dissolved nutrient concentrations, salinity (Paquette, 1958), and phytoplankton species identification. The productivity samples were incubated in 125-ml Pyrex reagent bottles on deck with running surface seawater for 24 h under conditions simulating in situ light intensities; neutral density screens were used to approximate 96, 50, 30, 15, 5, and 1% transmission. Following incubation, the samples were treated in the shipboard laboratory by routine methods (filtration through 0.45- μm pore size, 25-mm diameter Millipore HA filter, fuming over concentrated HCl, and liquid scintillation counting with a Packard Model 3310 Liquid Scintillation Spectrometer).

Photosynthetic rate versus light intensity data

Photosynthetic rate was measured as a function of 11 light intensities (P vs. I experiments) using ^{14}C -carbon assimilation (Steeman-Nielsen, 1952). Aliquots (125 ml) of the seawater sample were inoculated with 2.73 μCi ^{14}C - NaHCO_3 and incubated at 20°C for 2.5 h. Illumination was provided by quartz iodine lamps and was passed through blue filters. The appropriate light intensities were produced using a variety of neutral density nickel screens (Perforated Products); a Lambda quantum meter (Model LI-190S quantum sensor) was used to measure intensity. The experiments were terminated by filtering aliquots of the samples onto 0.45- μm Millipore filters, fuming the filters for 10-15 sec over concentrated HCl, and placing the wet filters in 10-ml aliquots of scintillation cocktail (5 g PPO [2,5-diphenyloxazole], 0.5 g dimethyl POPOP [1,4-bis (2-[4-methyl-5-phenyloxazolyl) benzene] and 100 ml Bio-solv per liter of toluene) for counting. Photosynthetic efficiencies were determined from the initial slopes of the P vs. I curves and were normalized either to chlorophyll *a* (" α " as used by Jassby and Platt 1976) or to P700 as grams carbon assimilated per gram chlorophyll *a* (or mole P700) per hour per $\mu\text{E m}^{-2} \text{ sec}^{-1}$ of incident light.

Photosynthetic unit size determination

Water samples were collected in a large non-toxic sampling bottle. Phytoplankton from 100 liters of water was concentrated by centrifugation in a high-speed centrifuge (SORVALL Model RC-3) with continuous flow adaptation. The resulting pellets were washed twice with 150 mM Tris-HCl (pH 8.0) with 4 mM MgCl_2 (hereafter called Tris-Mg buffer) and stored under Tris-Mg buffer in liquid N_2 until assayed for P700. Aliquots were also taken (prior to centrifugation) for phytoplankton species determination, chlorophyll concentration, and photosynthetic rate determinations (see above).

P700 measurements

In the laboratory, P700 was assayed as described by Shiozawa et al. (1974) and Perry et al. (1981) on an Aminco DW-2 dual beam spectrophotometer at 697 nm; a reference beam of 725, an isobestic point in the difference spectrum of P700, was used. Samples were oxidized by blue actinic light (Corning #5202) in the presence of methyl viologen (10 μM). P700 was fully reduced in the dark in the presence of 100 μM sodium ascorbate. A differential extinction coefficient of $64 \text{ mM}^{-1} \text{ cm}^{-1}$ (Hiyama and Ke, 1972) was used to calculate the concentration of P700. The kinetics of P700 oxidation and reduction were similar to those reported for higher plants (Shiozawa et al., 1974) and cyanobacteria (Dietrich and Thornber, 1971). The lower limit for accurate detection and quantitation of P700 in our preparations was approximately 3 nM. PSU size was calculated as the molar ratio of total chlorophyll to P700. The chlorophyll concentration was measured in the same samples on which P700 measurements were made using an extinction coefficient of $60 \text{ mM}^{-1} \text{ cm}^{-1}$ at the red absorption maximum (Shiozawa et al., 1974).

Measured ^{14}C uptake rates

The data from each of the above types of experiments are presented in the following pages. They are arranged in sections according to the type of experiment rather than in station order.

THIS PAGE
WAS INTENTIONALLY
LEFT BLANK

Simulated In Situ Incubations

**THIS PAGE
WAS INTENTIONALLY
LEFT BLANK**

Photosynthetic unit size, P700, and
photosynthetic rate versus light intensity data

W8009C STN142.2 2M 8 OCT 1980

W8009C STN142.2 2M 8 OCT 1980

-----CRUISE W8009 STATION 142-----

DATE 08 OCT 80 SECCHI 6.0M WIND SPD KT BAROMETER MB CLOUD TYPE:
 TIME 0805(+07) PHOTIC 16.0M DIR AIR DRY C AMOUNT: %
 LAT 47-13.6N SUN AM LY WAVE HGT M WET C WEATHER:
 LON 124-29.8W PM LY DIR REL HUMIDITY % VISIBILITY:
 DEPTH 66M TOTAL LY PER SEC SURF TEMP C TIDE: M

DEPTH TEMP SAL SIG-T ATTEN -----OXYGEN----- PHOS SIL NO3 NO2 NH3 CHLA PHAEO FC/FA
 M C 0/00 /M ML/L SAT ADU ---MICROGRAM-ATOMS/LITER--- ---MG/M3---
 2.0 31.657 2.33 .84 1.64

-----CRUISE W8009 STATION 142-----

PHOTOSYNTHESIS VS LIGHT INTENSITY EXPERIMENT

DATE 08 OCT 80 LATITUDE 47-13.6N
 TIME 0805 LONGITUDE 124-29.8W
 SECCHI DEPTH 6.0M WATER DEPTH 66M

SAMPLE DEPTH 2M
 CHLOROPHYLL-A 2.33MG/M3

INCIDENT LIGHT NES/M2-SEC	C-14 ASSIMILATION --MG/M3/HR--	ASSIM/CHLA MG/MG/HR
744.0	30.18	12.96
453.4	27.17	11.66
302.3	23.51	10.09
182.1	18.84	8.09
181.4	19.03	8.17
125.6	15.24	6.54
111.6	13.70	5.88
93.8	8.30	3.56
90.7	10.00	4.30
62.0	6.19	2.66
49.6	7.08	3.04
48.1	5.78	2.48
27.1	5.82	2.50
24.8	3.02	1.30
9.3	8.92	3.84
3.9	.91	.39

2M SAMPLE TAKEN FROM 50% LIGHT DEPTH; INCUBATOR TEMPERATURE = 17.0
 PHOTOSYNTHETIC UNIT SIZE (CHLA/P700) = 395

W8009C STN145 13M 9 OCT 1980

W8009C STN145 13M 9 OCT 1980

-----CRUISE W8009 STATION 145-----

DATE 09 OCT 80 SECCHI 5.0M WIND SPD KT BAROMETER MB CLOUD TYPE:
 TIME 0810(+07) PHOTIC 13.5M WAVE DIR M AIR DRY C AMOUNT: %
 LAT 47-13.5N SUN AM LY HGT M WET C WEATHER:
 LON 124-29.5W PM LY DIR REL HUMIDITY % VISIBILITY:
 DEPTH 61M TOTAL LY PER SEC SURF TEMP C TIDE: M

DEPTH TEMP SAL SIG-T ATTEN -----OXYGEN----- PHOS SIL NO3 NO2 NH3 CHLA PHAEO PO/FA
 M C 0/00 /M ML/L SAT ADU ---MICROGRAM-ATOMS/LITER--- ---MG/M3---
 13.0 31.944 2.39 1.07 1.60

-----CRUISE W8009 STATION 145-----

PHOTOSYNTHESIS VS LIGHT INTENSITY EXPERIMENT

DATE 09 OCT 80 LATITUDE 47-13.5N
 TIME 0810 LONGITUDE 124-29.5W
 SECCHI DEPTH 5.0M WATER DEPTH 61M

SAMPLE DEPTH 13M
 CHLOROPHYLL-A 2.39MG/M3

INCIDENT LIGHT MES/M2-SEC	C-14 ASSIMILATION --MG/M3/HR--	ASSIM/CHLA MG/MG/HR
744.0	27.97	11.71
453.4	25.43	10.64
302.3	19.84	8.30
182.1	18.47	7.73
181.4	15.12	6.33
125.6	14.22	5.94
111.6	11.88	4.97
93.8	9.95	4.16
90.7	10.52	4.40
62.0	8.47	3.54
49.6	6.13	2.56
48.1	4.58	1.92
27.1	3.94	1.65
24.8	3.48	1.46
9.3	2.53	1.06
8.5	.95	.40
3.9	.75	.31

13M SAMPLE TAKEN FROM 1% LIGHT DEPTH; INCUBATOR TEMPERATURE = 16.5
 PHOTOSYNTHETIC UNIT SIZE (CHLA/P700) = 645

W8009C STN149 4M 10 OCT 1980

W8009C STN149 4M 10 OCT 1980

-----CRUISE W8009 STATION 149-----

DATE 10 OCT 80	SECCHI 9.0M	WIND SPD	KT	BAROMETER	MB	CLOUD TYPE:
TIME 0815(+07)	PHOTIC 24.0M	DIR		AIR DRY	C	AMOUNT: %
LAT 47-20.2N	SUN AM	WAVE HGT	M	WET	C	WEATHER:
LON 124-45.2W	PM	DIR		REL HUMIDITY	%	VISIBILITY:
DEPTH 167M	TOTAL	PER	SEC	SURF TEMP	C	TIDE: M

DEPTH	TEMP	SAL	SIG-T	ATTEN	-----OXYGEN-----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	FC/FA
M	C	0/00		/M	ML/L SAT ADJ	---	---	---	---	---	MG/M3	---	---
4.0		32.349									.83	.20	1.71

-----CRUISE W8009 STATION 149-----

PHOTOSYNTHESIS VS LIGHT INTENSITY EXPERIMENT

DATE 10 OCT 80	LATITUDE 47-20.2N
TIME 0815	LONGITUDE 124-45.2W
SECCHI DEPTH 9.0M	WATER DEPTH 167M

SAMPLE DEPTH 4M
CHLOROPHYLL-A .83MG/M3

INCIDENT LIGHT MES/M2-SEC	C-14 ASSIMILATION --MG/M3/HR--	ASSIM/CHLA MG/MG/HR
744.0	7.18	8.66
453.4	7.02	8.46
302.3	6.16	7.42
182.1	4.96	5.98
181.4	4.96	5.98
125.6	4.22	5.09
111.6	3.51	4.24
93.8	2.83	3.40
90.7	2.92	3.52
62.0	1.48	1.78
49.6	1.44	1.74
48.1	1.56	1.88
27.1	.64	.76
24.8	1.00	1.21
9.3	.07	.10

4M SAMPLE TAKEN FROM 50% LIGHT DEPTH; INCUBATOR TEMPERATURE = 17.5
PHOTOSYNTHETIC UNIT SIZE (CHLA/P700) = 517

WB009C STN153 23M 11 OCT 1980

WB009C STN153 23M 11 OCT 1980

-----CRUISE W8009 STATION 153-----

DATE 11 OCT 80 SECCHI 14.0M WIND SPD KT BAROMETER MB CLOUD TYPE:
 TIME 0825(+07) PHOTIC 35.0M DIR MGT M AIR DRY C AMOUNT:
 LAT 47-20.5N SUN AM LY WAVE HGT M WET C WEATHER:
 LON 124-45.4W PM LY DIR SEC REL HUMIDITY % VISIBILITY:
 DEPTH 164M TOTAL LY PER SEC SURF TEMP C TIDE: M

DEPTH TEMP SAL SIG-T ATTEN ----OXYGEN---- PHOS SIL NO3 NO2 NH3 CHLA PHAEU FU/FA
 M C O/CO /M ML/L SAT AOU ---MICROGRAM-ATOMS/LITER--- ---MG/M3---
 23.0 32.357 .81 .23 1.65

-----CRUISE W8009 STATION 153-----

PHOTOSYNTHESIS VS LIGHT INTENSITY EXPERIMENT

DATE 11 OCT 80 LATITUDE 47-20.5N
 TIME 0825 LONGITUDE 124-45.4W
 SECCHI DEPTH 14.0M WATER DEPTH 164M

SAMPLE DEPTH 23M
 CHLOROPHYLL-A .81MG/M3

INCIDENT LIGHT MES/M2-SEC	C-14 ASSIMILATION --MG/M3/HR--	ASSIM/CHLA MG/MG/HR
744.0	6.84	8.44
453.4	6.72	8.30
302.3	6.93	8.55
182.1	5.72	7.13
181.4	5.34	6.59
125.6	4.77	5.89
111.6	4.21	5.20
93.8	3.12	3.84
90.7	3.58	4.42
62.0	2.42	3.00
49.6	2.22	2.76
48.1	1.94	2.38
27.1	1.70	2.10
24.8	1.04	1.28
9.3	1.06	1.31
8.5	.81	1.00
3.9	.12	.14

23M SAMPLE TAKEN FROM 5% LIGHT DEPTH; INCUBATOR TEMPERATURE = 15.5
 PHOTOSYNTHETIC UNIT SIZE (CHLA/P700) = 883

W8009C STN156 2M 12 OCT 1980

W8009C STN156 2M 12 OCT 1980

-----CRUISE W8009 STATION 156-----

DATE 12 OCT 80	SECCHI 4.0M	WIND SPD KT	BAROMETER	MB CLOUD TYPE:
TIME 0830(+07)	PHOTIC 10.5M	DIR	AIR DRY	C AMOUNT: %
LAT 47-07.1N	SUN AM	WAVE HGT M	WET	C WEATHER:
LOX 124-17.0W	PM	DIR	REL HUMIDITY	Z VISIBILITY:
DEPTH 33M	TOTAL	PER	SURF TEMP	C TIDE: M

DEPTH M	TEMP C	SAL 0/00	SIG-T	ATTEN /M	-----OXYGEN-----	PHOS	SIL	NO3	NO2	NH3	CHLA	PHAEO	PO/FA
					ML/L SAT	ADU	---	MICROGRAM-ATOMS/LITER---			---	MG/M3---	
2.0		30.943									7.25	1.32	1.74

-----CRUISE W8009 STATION 156-----

PHOTOSYNTHESIS VS LIGHT INTENSITY EXPERIMENT

DATE 12 OCT 80	LATITUDE 47-07.1N
TIME 0830	LONGITUDE 124-17.0W
SECCHI DEPTH 4.0M	WATER DEPTH 33M

SAMPLE DEPTH 2M		
CHLOROPHYLL-A		7.25MG/M3

INCIDENT LIGHT MES/M2-SEC	C-14 ASSIMILATION --MG/M3/HR--	ASSIM/CHLA MG/MG/HR
744.0	66.96	9.24
453.4	59.20	8.16
302.3	47.10	6.50
182.1	31.10	4.29
181.7	32.76	4.52
125.6	26.32	3.62
111.6	22.68	3.13
93.8	17.45	2.40
90.7	16.51	2.28
62.0	10.59	1.46
49.6	9.70	1.34
48.1	8.30	1.14
27.1	4.76	.66
24.8	5.10	.70
9.3	1.16	.16
8.5	.76	.10
3.9	.17	.02

2M SAMPLE TAKEN FROM 50% LIGHT DEPTH; INCUBATOR TEMPERATURE = 16.5
 PHOTOSYNTHETIC UNIT SIZE (CHLA/P700) = 640

W8009C STN158 12M 13 OCT 1980

W8009C STN158 12M 13 OCT 1980

-----CRUISE W8009 STATION 158-----

DATE 13 OCT 80 SECCHI 7.0M WIND SPD KT BAROMETER MB CLOUD TYPE:
 TIME 0801(+07) PHOTIC 15.0M DIR M AIR DRY C AMOUNT: %
 LAT 47-07.2N SUN AM LY WAVE HGT M WET C WEATHER:
 LON 124-17.0W PM LY DIR SEC REL HUMIDITY % VISIBILITY:
 DEPTH 33M TOTAL LY PER SEC SURF TEMP C TIDE: M

DEPTH TEMP SAL SIG-T ATTEN ----OXYGEN---- PHOS SIL NO3 NO2 NH3 CHLA PHAED FD/FA
 M C 0/00 /M ML/L SAT ADU ---MICROGRAM-ATOMS/LITER--- ---MG/M3---
 12.0 31.332 5.15 .28 1.83

-----CRUISE W8009 STATION 158-----

PHOTOSYNTHESIS VS LIGHT INTENSITY EXPERIMENT

DATE 13 OCT 80 LATITUDE 47-07.2N
 TIME 0801 LONGITUDE 124-17.0W
 SECCHI DEPTH 7.0M WATER DEPTH 33M

SAMPLE DEPTH 12M
 CHLOROPHYLL-A 5.15MG/M3

INCIDENT LIGHT MES/M2-SEC	C-14 ASSIMILATION --MG/M3/HR--	ASSIM/CHLA MG/MG/HR
744.0	47.67	9.26
453.4	41.33	8.02
302.3	32.56	6.32
182.1	25.21	4.90
181.4	21.76	4.22
125.6	17.86	3.47
111.6	14.84	2.88
93.8	10.84	2.10
90.7	13.26	2.58
62.0	7.88	1.53
49.6	7.10	1.38
48.1	5.50	1.07
27.1	2.84	.56
24.8	2.93	.56
9.3	4.07	.79
8.5	1.22	.24
3.9	.01	.00

12M SAMPLE TAKEN FROM 5% LIGHT DEPTH
 PHOTOSYNTHETIC UNIT SIZE (CHLA/P700) = 777

Particle Size Distributions

Particle size distributions were measured with an electronic particle sizer using 100 μm and 200 μm apertures. The small aperture measured particles with spherical equivalent diameters between 3.4 and 15.8 μm . The large aperture covers the range from 5.6 to 40 μm . Each data window includes particles with volumes between half powers of 2 μm^3 . For example, the first window of the small aperture covers particles with volumes between $16\sqrt{2}$ and 32 μm^3 . There are nine windows of overlap between the two apertures. Discrepancies between the two were resolved for each of the overlapping windows in one of the following ways, in order of preference: (1) averaging the two values; (2) choosing the value from one or the other aperture; or (3) replace both values with the missing data indicator.

Volume concentrations (ppm) were computed by multiplying the particle concentration in each window by the average of the delimiting volumes for that window. Assuming a hyperbolic distribution, this method of computing volume concentrations gives a value 0.5 to 2% high for a reasonable range of slopes.

The cumulative hyperbolic slopes were computed by finding the slope of the linear regression of the logarithm of the particle number concentrations in each window versus the logarithm of the central diameter of each window. This is numerically equivalent to 1.0 less than the differential slope and would be identical to the cumulative slope if the particle size distribution followed the hyperbolic distribution exactly.

The cumulative exponential slopes were computed by forming the cumulative size distribution starting at the large end and then finding the slope of the linear regression of the logarithm of the cumulative size distribution versus the lower diameter of each window. The correlation coefficients for both slopes are given after the corresponding values of slope. These correlation coefficients should not be used to determine the type of size distribution unless one is below 0.98 and the other is above 0.99. The exponential distribution generally fits the smaller end of the size distribution well while the hyperbolic is better for the larger end or for size distributions with a wide range of diameters (Kitchen, 1978).

In the following table the reported depths (DPTH) are actually pressure readings (dbar) from the CTD digital display recorded at the time samples were taken. Actual sample depths are slightly shallower than the listed values; they can be found in the CTD plots and data tables section of this report along with ancillary data (salinity, nutrients, etc.) collected with these samples. Other column headings specific to this section are VOL (volume concentrations, ppm), HSLP (cumulative hyperbolic slope), ESLP (cumulative exponential slope), and CORR (the respective correlation coefficients for each slope).

At station 157 a time course experiment was performed by C. Weimer to monitor changes in the particle distribution of a sample over a 12 h period. These data appear on the last page of this section.

CRUISE	STA	DPTH	VOL	HSLP	CORR	ESLP	CORR
W8009C	044	0009	.044	3.57	.9816	.321	.9675
W8009C	044	0144	.027	3.55	.9852	.340	.9887
W8009C	044	0185	.021	3.11	.9893	.228	.9552
W8009C	044	0225	.046	4.13	.9863	.444	.9955
W8009C	044	0504	.024	3.50	.9833	.408	.9929
W8009C	044	0799	.058	3.39	.9787	.302	.9682
W8009C	045	0012	.210	4.54	.9839	.318	.9560
W8009C	045	0206	.136	4.24	.9827	.331	.9753
W8009C	045	1006	.016	4.52	.9872	.495	.9894
W8009C	045	1499	.058	4.16	.9749	.361	.9741
W8009C	046	0005	.181	4.87	.9847	.532	.9890
W8009C	046	0180	.072	4.86	.9770	.455	.9850
W8009C	046	1000	.029	2.98	.9874	.249	.9598
W8009C	046	1643	.023	3.63	.9824	.414	.9936
W8009C	047	0015	.156	4.86	.9824	.511	.9929
W8009C	047	0047	.043	3.78	.9660	.307	.9562
W8009C	047	0230	.050	4.71	.9813	.530	.9949
W8009C	047	0355	.026	4.29	.9849	.493	.9861
W8009C	047	0486	.013	3.96	.9828	.497	.9967
W8009C	047	0855	.014	3.27	.9533	.283	.9217
W8009C	047	1692	.025	3.52	.9838	.445	.9953
W8009C	048	0285	.020	3.44	.9739	.235	.9150
W8009C	048	0384	.025	4.28	.9873	.500	.9897
W8009C	048	0903	.014	2.69	.9737	.227	.9451
W8009C	048	1364	.050	3.06	.9790	.223	.9560
W8009C	048	1673	.025	3.76	.9858	.391	.9808
W8009C	049	0012	.187	4.37	.9869	.318	.9565
W8009C	049	0181	.027	4.17	.9817	.393	.9801
W8009C	049	0253	.033	4.04	.9894	.434	.9845
W8009C	049	0989	.013	3.57	.9796	.331	.9620
W8009C	049	1728	.015	4.41	.9702	.539	.9947
W8009C	050	0014	.216	4.23	.9783	.303	.9479
W8009C	050	0035	.068	3.84	.9783	.307	.9555
W8009C	050	0055	.032	3.58	.9909	.317	.9747
W8009C	050	0155	.016	4.16	.9802	.474	.9936
W8009C	052	0155	.053	4.11	.9778	.530	.9937
W8009C	053	0075	.017	3.06	.9810	.311	.9709
W8009C	056	0010	.215	4.88	.9692	.392	.9445
W8009C	058	0009	.371	5.43	.9907	.468	.9752
W8009C	058	0015	.392	5.31	.9901	.461	.9771
W8009C	058	0033	.072	4.48	.9895	.394	.9764
W8009C	058	0053	.071	3.86	.9874	.292	.9717
W8009C	059	0009	.388	5.12	.9854	.456	.9882
W8009C	059	0030	.056	4.06	.9800	.333	.9645
W8009C	059	0041	.038	3.74	.9959	.331	.9771
W8009C	059	0066	.156	4.26	.9772	.410	.9928
W8009C	066	0005	.367	4.84	.9878	.354	.9585
W8009C	066	0014	.393	4.94	.9926	.373	.9531
W8009C	066	0024	.068	4.51	.9871	.372	.9619

CRUISE	STA	DPTH	VOL	HSLP	CORR	ESLP	CORR
WB009C	066	0059	.058	3.88	.9867	.331	.9790
WB009C	066	0078	.308	4.35	.9836	.350	.9845
WB009C	066	0099	.298	4.13	.9859	.318	.9786
WB009C	067	0010	.131	5.02	.9905	.430	.9709
WB009C	067	0052	.031	4.10	.9823	.477	.9966
WB009C	067	0074	.022	3.37	.9885	.271	.9522
WB009C	067	0150	.130	4.87	.9773	.383	.9509
WB009C	069	0000	.222	4.02	.9858	.329	.9637
WB009C	069	0021	.172	3.86	.9889	.285	.9505
WB009C	069	0030	.197	4.39	.9925	.312	.9555
WB009C	070	0010	.172	4.49	.9759	.342	.9417
WB009C	070	0037	.042	4.20	.9881	.442	.9907
WB009C	070	0049	.219	4.58	.9849	.417	.9820
WB009C	070	0061	.335	4.23	.9791	.394	.9943
WB009C	071	0010	.137	5.09	.9800	.410	.9459
WB009C	071	0033	.049	4.39	.9893	.413	.9794
WB009C	071	0062	.023	4.02	.9900	.426	.9932
WB009C	071	0077	.224	4.38	.9819	.396	.9920
WB009C	071	0097	.219	4.28	.9751	.431	.9961
WB009C	072	0010	.093	4.93	.9927	.460	.9788
WB009C	072	0040	.026	3.60	.9970	.378	.9861
WB009C	072	0076	.031	3.01	.9691	.334	.9831
WB009C	072	0100	.056	4.51	.9876	.513	.9959
WB009C	072	0120	.035	3.90	.9918	.338	.9716
WB009C	072	0200	.145	4.08	.9869	.359	.9680
WB009C	072	0269	.157	4.45	.9842	.407	.9933
WB009C	074	0013	.110	4.67	.9926	.463	.9867
WB009C	074	0093	.063	4.40	.9893	.429	.9913
WB009C	074	0182	.075	4.69	.9851	.485	.9896
WB009C	074	0300	.022	3.88	.9924	.396	.9871
WB009C	074	0773	.041	3.88	.9914	.337	.9707
WB009C	074	0878	.037	3.93	.9921	.373	.9762
WB009C	074	1097	.058	4.74	.9755	.537	.9959
WB009C	076	0015	.109	4.73	.9923	.483	.9865
WB009C	076	0105	.038	4.26	.9847	.393	.9737
WB009C	076	0208	.056	4.58	.9818	.418	.9708
WB009C	076	0356	.020	3.96	.9893	.418	.9775
WB009C	076	0607	.027	3.99	.9875	.360	.9601
WB009C	076	1005	.019	3.95	.9594	.296	.9092
WB009C	076	1283	.102	4.51	.9892	.432	.9822
WB009C	077	0010	.109	4.69	.9857	.391	.9674
WB009C	077	0200	.012	3.43	.9717	.274	.9237
WB009C	077	0325	.019	3.97	.9661	.293	.9229
WB009C	077	0706	.008	4.01	.9896	.574	.9946
WB009C	077	0753	.029	4.24	.9875	.388	.9688
WB009C	077	1000	.016	3.90	.9753	.374	.9495
WB009C	077	1346	.041	4.24	.9700	.311	.9451

CRUISE	STA	DPTH	VOL	HSLP	CORR	ESLP	CORR
W8009C	079	0014	.097	4.21	.9769	.290	.9423
W8009C	079	0104	.016	3.38	.9936	.402	.9882
W8009C	079	0260	.033	4.67	.9893	.544	.9922
W8009C	079	0508	.022	3.47	.9752	.245	.9209
W8009C	079	0706	.012	3.88	.9678	.360	.9438
W8009C	079	1204	.016	4.45	.9875	.503	.9823
W8009C	079	1558	.031	4.38	.9842	.392	.9648
W8009C	082	0011	.131	4.07	.9816	.275	.9456
W8009C	082	0031	.097	4.08	.9923	.331	.9697
W8009C	082	0051	.040	3.66	.9920	.329	.9776
W8009C	082	0078	.018	3.29	.9766	.258	.9461
W8009C	082	0152	.032	3.90	.9821	.342	.9623
W8009C	083	0013	.127	3.98	.9788	.264	.9232
W8009C	083	0032	.141	3.40	.9793	.252	.9860
W8009C	083	0053	.029	3.77	.9910	.393	.9886
W8009C	083	0077	.015	3.05	.9841	.224	.9459
W8009C	083	0153	.012	3.71	.9813	.503	.9959
W8009C	084	0009	.155	3.50	.9886	.238	.9410
W8009C	084	0031	.091	4.36	.9882	.335	.9588
W8009C	084	0051	.029	3.41	.9911	.274	.9674
W8009C	084	0076	.015	3.56	.9879	.325	.9735
W8009C	084	0152	.011	3.88	.9887	.445	.9939
W8009C	085	0009	.116	4.13	.9877	.284	.9388
W8009C	085	0030	.144	4.23	.9863	.299	.9531
W8009C	085	0051	.021	3.90	.9767	.455	.9970
W8009C	085	0076	.012	3.23	.9892	.322	.9810
W8009C	085	0152	.017	3.42	.9815	.365	.9921
W8009C	086	0009	.109	4.14	.9772	.271	.9273
W8009C	086	0060	.017	3.32	.9930	.319	.9845
W8009C	086	0101	.017	3.91	.9893	.431	.9904
W8009C	086	0130	.033	4.67	.9850	.522	.9952
W8009C	086	0152	.036	4.32	.9886	.472	.9914
W8009C	087	0014	.088	4.39	.9916	.350	.9587
W8009C	087	0031	.149	4.60	.9836	.343	.9499
W8009C	087	0051	.026	3.68	.9841	.281	.9530
W8009C	087	0078	.012	3.46	.9795	.312	.9683
W8009C	087	0151	.024	3.49	.9864	.305	.9696
W8009C	088	0015	.162	5.10	.9848	.450	.9770
W8009C	088	0035	.068	4.13	.9892	.346	.9728
W8009C	088	0056	.040	4.57	.9919	.442	.9797
W8009C	088	0083	.013	3.52	.9829	.406	.9943
W8009C	088	0156	.015	3.16	.9714	.237	.9302
W8009C	089	0015	.166	5.19	.9918	.488	.9828
W8009C	089	0035	.057	4.18	.9883	.366	.9736
W8009C	089	0056	.014	3.39	.9902	.301	.9623
W8009C	089	0081	.012	3.16	.9647	.244	.9377
W8009C	089	0156	.059	4.17	.9803	.328	.9432
W8009C	090	0016	.162	5.06	.9853	.400	.9590
W8009C	090	0037	.026	4.19	.9890	.414	.9762
W8009C	090	0058	.015	3.84	.9891	.441	.9949

CRUISE	STA	DPTH	VOL	HSLP	CORR	ESLP	CORR
WB009C	090	0081	.062	4.39	.9915	.387	.9809
WB009C	090	0157	.111	4.10	.9887	.297	.9631
WB009C	091	0010	.227	5.39	.9923	.465	.9690
WB009C	091	0027	.045	4.06	.9810	.310	.9473
WB009C	091	0070	.031	4.40	.9860	.456	.9917
WB009C	091	0097	.205	4.40	.9905	.377	.9834
WB009C	092	0003	.217	3.62	.9940	.263	.9742
WB009C	092	0016	.141	4.49	.9761	.298	.9315
WB009C	092	0026	.162	4.59	.9886	.378	.9583
WB009C	092	0041	.078	4.31	.9897	.373	.9737
WB009C	092	0059	.164	4.41	.9890	.392	.9878
WB009C	093	0004	.202	3.60	.9932	.255	.9653
WB009C	093	0011	.239	4.12	.9943	.299	.9687
WB009C	093	0022	.172	4.48	.9928	.387	.9671
WB009C	093	0028	.101	4.85	.9811	.373	.9517
WB009C	093	0032	1.095	5.62	.9872	.483	.9791
WB009C	094	0004	.304	3.81	.9867	.287	.9831
WB009C	094	0016	.420	4.68	.9881	.331	.9598
WB009C	094	0021	.275	4.71	.9864	.373	.9689
WB009C	094	0027	.744	5.50	.9874	.464	.9700
WB009C	095	0018	.319	4.75	.9924	.443	.9765
WB009C	095	0020	.160	4.17	.9915	.298	.9512
WB009C	096	0016	.237	4.54	.9937	.372	.9795
WB009C	096	0029	.465	4.79	.9859	.398	.9869
WB009C	097	0011	.336	5.35	.9923	.463	.9771
WB009C	097	0026	.125	5.13	.9896	.461	.9463
WB009C	097	0044	.027	3.83	.9868	.406	.9913
WB009C	097	0056	.120	4.89	.9827	.436	.9803
WB009C	098	0011	.203	5.57	.9962	.520	.9776
WB009C	098	0063	.017	3.51	.9840	.351	.9817
WB009C	098	0089	.075	4.22	.9833	.344	.9511
WB009C	098	0104	.116	4.79	.9758	.506	.9977
WB009C	099	0010	.234	5.01	.9953	.458	.9737
WB009C	099	0046	.040	4.22	.9885	.409	.9884
WB009C	099	0086	.032	3.66	.9888	.365	.9826
WB009C	099	0133	.083	4.23	.9882	.429	.9891
WB009C	099	0152	.152	4.22	.9834	.336	.9824
WB009C	100	0010	.233	4.94	.9809	.361	.9227
WB009C	100	0037	.237	5.43	.9763	.453	.9295
WB009C	100	0237	.129	5.18	.9892	.490	.9541
WB009C	100	0258	.382	5.78	.9785	.477	.9223
WB009C	100	0333	.075	4.49	.9715	.333	.9090
WB009C	100	0349	.124	5.74	.9911	.580	.9632
WB009C	101	0015	.087	3.95	.9962	.299	.9673
WB009C	101	0054	.024	3.99	.9899	.355	.9634
WB009C	101	0185	.042	3.55	.9877	.245	.9489
WB009C	101	0401	.014	3.77	.9893	.438	.9937
WB009C	101	0526	.152	5.79	.9761	.603	.9467
WB009C	102	0010	.098	4.23	.9887	.315	.9480
WB009C	102	0161	.013	3.16	.9738	.229	.9099

CRUISE	STA	DEPTH	VOL	HSLF	CORR	ESLF	CORR
WB009C	102	0431	.013	3.69	.9913	.397	.9742
WB009C	102	0878	.014	3.70	.9949	.420	.9891
WB009C	103	0008	.059	4.06	.9843	.276	.9330
WB009C	103	0103	.012	3.48	.9892	.355	.9934
WB009C	103	0154	.038	3.72	.9897	.258	.9621
WB009C	103	0404	.009	3.75	.9842	.322	.9427
WB009C	103	0708	.009	3.46	.9792	.325	.9599
WB009C	103	0732	.007	3.72	.9678	.344	.9538
WB009C	104	0018	.044	3.94	.9947	.326	.9666
WB009C	104	0207	.013	3.61	.9866	.280	.9564
WB009C	104	0504	.008	3.03	.9889	.318	.9944
WB009C	104	0805	.008	3.61	.9959	.414	.9936
WB009C	104	1057	.006	3.66	.9966	.388	.9872
WB009C	104	1330	.013	3.91	.9826	.325	.9627
WB009C	104	1362	.020	3.74	.9897	.372	.9716
WB009C	105	0015	.046	3.09	.9784	.241	.9611
WB009C	105	0035	.088	3.66	.9923	.393	.9891
WB009C	105	0055	.056	3.28	.9774	.230	.9595
WB009C	106	0011	.062	4.25	.9938	.518	.9959
WB009C	106	0030	.074	3.75	.9841	.263	.9255
WB009C	106	0051	.055	3.50	.9932	.304	.9784
WB009C	106	0076	.018	3.46	.9881	.347	.9869
WB009C	106	0150	.020	3.17	.9941	.269	.9674
WB009C	107	0015	.109	3.99	.9915	.285	.9581
WB009C	107	0031	.110	4.33	.9946	.321	.9632
WB009C	107	0052	.052	3.51	.9900	.249	.9578
WB009C	107	0075	.023	3.15	.9806	.227	.9488
WB009C	107	0150	.018	2.98	.9590	.218	.9167
WB009C	108	0011	.094	4.39	.9919	.352	.9656
WB009C	108	0030	.077	4.17	.9935	.343	.9670
WB009C	108	0052	.068	3.41	.9878	.270	.9827
WB009C	108	0076	.029	2.77	.9943	.204	.9680
WB009C	108	0149	.042	3.82	.9923	.313	.9732
WB009C	109	0010	.086	4.04	.9872	.295	.9562
WB009C	109	0031	.160	4.05	.9925	.299	.9531
WB009C	109	0051	.059	3.39	.9929	.250	.9713
WB009C	109	0076	.025	2.88	.9934	.217	.9683
WB009C	109	0152	.019	2.96	.9932	.220	.9544
WB009C	110	0010	.147	4.09	.9850	.304	.9671
WB009C	110	0033	.078	4.48	.9848	.395	.9834
WB009C	110	0053	.033	2.66	.9815	.196	.9631
WB009C	110	0079	.019	2.76	.9885	.199	.9661
WB009C	110	0151	.065	4.03	.9887	.370	.9917
WB009C	111	0010	.213	4.23	.9919	.292	.9536
WB009C	111	0031	.072	3.67	.9907	.294	.9735
WB009C	111	0050	.049	3.56	.9926	.330	.9858
WB009C	111	0076	.042	3.61	.9944	.357	.9868
WB009C	111	0151	.166	3.79	.9924	.316	.9874
WB009C	112	0011	.283	4.52	.9891	.307	.9346
WB009C	112	0029	.083	4.04	.9929	.330	.9735

CRUISE	STA	DPTH	VOL	HSLP	CORR	ESLP	CORR
W8009C	112	0050	.044	3.59	.9915	.305	.9847
W8009C	112	0104	.133	4.01	.9913	.288	.9704
W8009C	113	0011	.235	4.38	.9914	.300	.9438
W8009C	113	0027	.062	4.07	.9820	.341	.9409
W8009C	113	0057	.079	4.15	.9797	.336	.9556
W8009C	113	0066	.227	3.95	.9901	.306	.9808
W8009C	114	0009	.304	4.03	.9938	.284	.9654
W8009C	114	0026	.148	4.12	.9909	.347	.9869
W8009C	114	0040	.276	4.23	.9888	.378	.9899
W8009C	115	0014	.261	3.84	.9953	.273	.9606
W8009C	115	0024	.637	4.32	.9898	.311	.9833
W8009C	126	0012	.080	4.50	.9844	.375	.9658
W8009C	126	0102	.019	2.95	.9909	.312	.9933
W8009C	126	0181	.070	3.70	.9842	.282	.9763
W8009C	126	0191	.131	3.95	.9781	.311	.9850
W8009C	127	0011	.125	4.52	.9836	.328	.9483
W8009C	127	0105	.021	3.45	.9875	.268	.9568
W8009C	127	0165	.080	4.05	.9795	.337	.9765
W8009C	127	0184	.069	3.72	.9910	.289	.9581
W8009C	128	0012	.126	4.44	.9957	.416	.9775
W8009C	128	0099	.028	3.74	.9867	.388	.9914
W8009C	128	0156	.119	4.16	.9864	.325	.9730
W8009C	128	0176	.139	3.91	.9872	.334	.9883
W8009C	129	0012	.149	4.67	.9929	.386	.9598
W8009C	129	0104	.052	3.90	.9891	.383	.9907
W8009C	129	0213	.134	3.91	.9851	.326	.9673
W8009C	129	0232	.120	4.34	.9839	.395	.9923
W8009C	130	0016	.165	4.49	.9953	.360	.9718
W8009C	130	0106	.064	4.45	.9824	.452	.9912
W8009C	130	0170	.116	4.19	.9878	.413	.9936
W8009C	131	0019	.081	4.09	.9880	.287	.9435
W8009C	131	0037	.110	3.71	.9874	.281	.9687
W8009C	131	0071	.044	3.61	.9835	.365	.9939
W8009C	131	0080	.016	2.97	.9875	.220	.9590
W8009C	131	0102	.032	3.17	.9877	.291	.9879
W8009C	131	0135	.059	4.33	.9876	.418	.9901
W8009C	131	0155	.101	4.30	.9867	.484	.9910
W8009C	131	0174	.063	3.93	.9896	.304	.9719
W8009C	131	174R	.085	4.00	.9901	.308	.9685
W8009C	131	0187	.077	4.22	.9902	.418	.9934
W8009C	131	187R	.074	4.31	.9872	.424	.9932
W8009C	132	0021	.047	3.62	.9883	.272	.9579
W8009C	132	0043	.051	3.58	.9848	.314	.9908
W8009C	132	043R	.055	3.28	.9817	.240	.9551
W8009C	132	0067	.017	2.72	.9821	.311	.9963
W8009C	132	0085	.033	3.32	.9914	.313	.9889
W8009C	132	0095	.022	3.31	.9820	.284	.9652
W8009C	132	0106	.046	3.44	.9768	.240	.9486
W8009C	132	0145	.088	4.50	.9859	.477	.9943
W8009C	132	0184	.058	3.69	.9892	.401	.9946

CRUISE	STA	DPTH	VOL	HSLP	CORR	ESLP	CORR
WB009C	132	0193	.090	3.84	.9859	.309	.9822
WB009C	133	0020	.047	3.76	.9876	.287	.9645
WB009C	133	0043	.069	3.76	.9747	.298	.9773
WB009C	133	0066	.028	3.02	.9918	.268	.9904
WB009C	133	0090	.016	3.08	.9908	.251	.9671
WB009C	133	0120	.024	4.17	.9911	.481	.9744
WB009C	133	0139	.057	4.37	.9811	.443	.9909
WB009C	133	0160	.069	4.15	.9899	.340	.9765
WB009C	133	0179	.082	3.96	.9787	.361	.9897
WB009C	133	0197	.041	3.85	.9875	.362	.9614
WB009C	135	0019	.062	3.86	.9927	.320	.9669
WB009C	135	0045	.097	3.45	.9778	.244	.9590
WB009C	135	0065	.032	3.05	.9951	.226	.9682
WB009C	135	0090	.022	3.27	.9883	.320	.9858
WB009C	135	0122	.043	3.42	.9840	.340	.9802
WB009C	135	0141	.067	3.97	.9944	.357	.9812
WB009C	135	0161	.108	4.44	.9786	.417	.9900
WB009C	135	0175	.096	4.03	.9864	.470	.9967
WB009C	135	0185	.117	4.32	.9811	.385	.9857
WB009C	137	0020	.054	3.80	.9922	.265	.9558
WB009C	137	0049	.073	3.66	.9877	.279	.9719
WB009C	137	0080	.037	3.06	.9851	.272	.9842
WB009C	137	0106	.018	3.14	.9799	.261	.9639
WB009C	137	0122	.030	3.67	.9741	.437	.9933
WB009C	137	0141	.070	4.09	.9800	.278	.9508
WB009C	137	0167	.081	3.90	.9910	.445	.9928
WB009C	137	0171	.089	4.04	.9735	.407	.9970
WB009C	137	0187	.086	4.03	.9912	.323	.9710
WB009C	138	0015	.049	3.32	.9870	.238	.9523
WB009C	138	0045	.062	3.77	.9936	.273	.9498
WB009C	138	0065	.039	3.16	.9923	.251	.9700
WB009C	138	0095	.021	3.13	.9852	.272	.9690
WB009C	138	0120	.056	3.71	.9717	.346	.9928
WB009C	138	0150	.086	4.08	.9870	.421	.9913
WB009C	138	0180	.087	4.22	.9869	.404	.9870
WB009C	138	0200	.083	4.20	.9894	.418	.9940
WB009C	138	0214	.088	4.28	.9887	.424	.9927
WB009C	139	0016	.036	3.83	.9868	.294	.9693
WB009C	139	0045	.087	3.92	.9857	.333	.9772
WB009C	139	0060	.036	3.18	.9920	.247	.9680
WB009C	139	0090	.019	3.13	.9771	.234	.9505
WB009C	139	0123	.029	3.20	.9888	.305	.9791
WB009C	139	0143	.064	3.62	.9850	.261	.9469
WB009C	139	0163	.082	3.93	.9802	.347	.9880
WB009C	139	0184	.073	3.72	.9707	.313	.9672
WB009C	139	0199	.061	3.93	.9881	.360	.9886
WB009C	140	0021	.037	3.48	.9860	.275	.9618
WB009C	140	0050	.074	3.74	.9876	.308	.9901
WB009C	140	0067	.039	3.32	.9862	.239	.9660
WB009C	140	0097	.014	2.60	.9939	.248	.9735

CRUISE	STA	DPTH	VOL	HSLP	CORR	ESLP	CORR
WB009C	140	0120	.040	3.85	.9740	.268	.9535
WB009C	140	0140	.069	3.74	.9787	.253	.9647
WB009C	140	0160	.068	4.17	.9925	.389	.9934
WB009C	140	0177	.080	4.27	.9773	.364	.9917
WB009C	140	0188	.085	4.00	.9871	.294	.9562
WB009C	141	0015	.031	3.46	.9885	.281	.9725
WB009C	141	0045	.083	3.68	.9880	.270	.9773
WB009C	141	0065	.037	3.18	.9897	.290	.9949
WB009C	141	0105	.018	3.23	.9868	.322	.9968
WB009C	141	0120	.015	3.17	.9854	.259	.9845
WB009C	141	0140	.052	3.84	.9826	.452	.9925
WB009C	141	0160	.073	4.16	.9885	.459	.9908
WB009C	141	0173	.070	4.34	.9824	.386	.9909
WB009C	141	0189	.080	4.17	.9793	.381	.9844
WB009C	146	0011	.189	4.44	.9940	.311	.9494
WB009C	146	0027	.101	4.38	.9887	.386	.9823
WB009C	146	0041	.031	3.50	.9853	.384	.9959
WB009C	146	0066	.013	3.57	.9805	.424	.9977
WB009C	146	0119	.033	2.96	.9600	.230	.9711
WB009C	146	0145	.064	3.98	.9828	.283	.9444
WB009C	146	0160	.074	3.92	.9864	.411	.9938
WB009C	146	0176	.095	3.72	.9853	.344	.9914
WB009C	146	0182	.101	4.01	.9895	.354	.9877
WB009C	147	0010	.173	4.57	.9975	.432	.9806
WB009C	147	0025	.075	4.57	.9830	.395	.9710
WB009C	147	0039	.053	3.17	.9919	.320	.9896
WB009C	147	0063	.021	3.08	.9905	.324	.9873
WB009C	147	0105	.033	3.33	.9498	.302	.9864
WB009C	147	0140	.058	3.99	.9886	.324	.9628
WB009C	147	0160	.165	4.05	.9841	.306	.9749
WB009C	147	0170	.205	3.92	.9767	.328	.9799
WB009C	147	0178	.108	3.72	.9828	.379	.9963
WB009C	148	0010	.189	4.63	.9934	.406	.9806
WB009C	148	0026	.090	3.91	.9926	.305	.9660
WB009C	148	0040	.037	3.71	.9911	.339	.9875
WB009C	148	0104	.029	3.20	.9750	.336	.9952
WB009C	148	0142	.051	4.01	.9774	.388	.9917
WB009C	148	0162	.068	3.63	.9718	.261	.9509
WB009C	148	0180	.054	4.00	.9886	.332	.9726
WB009C	148	0190	.055	4.23	.9874	.453	.9960
WB009C	148	0200	.035	4.14	.9751	.388	.9828
WB009C	149	0014	.126	4.32	.9966	.323	.9681
WB009C	149	0025	.124	4.77	.9922	.419	.9843
WB009C	149	0042	.037	3.62	.9863	.338	.9827
WB009C	149	0100	.028	3.16	.9591	.324	.9941
WB009C	149	0132	.065	3.63	.9884	.293	.9696
WB009C	149	0144	.080	3.75	.9853	.269	.9544
WB009C	149	0154	.094	3.90	.9832	.304	.9607
WB009C	149	0164	.165	3.89	.9833	.386	.9947
WB009C	149	0166	.196	3.62	.9885	.279	.9850

				473				
CRUISE	STA	DEPTH	VOL	HSLP	CORR	ESLP	CORR	
WB009C	150	0025	.062	4.69	.9928	.400	.9699	
WB009C	150	0041	.039	4.00	.9865	.384	.9861	
WB009C	150	0097	.026	3.19	.9610	.309	.9930	
WB009C	150	0140	.016	3.35	.9911	.369	.9905	
WB009C	150	0158	.106	4.22	.9805	.320	.9798	
WB009C	150	0179	.108	3.74	.9868	.287	.9766	
WB009C	150	0188	.094	3.78	.9800	.312	.9800	
WB009C	150	0193	.084	3.70	.9835	.353	.9955	
WB009C	151	0012	.093	4.39	.9921	.429	.9930	
WB009C	151	0032	.045	3.77	.9890	.278	.9405	
WB009C	151	0048	.029	3.66	.9854	.370	.9948	
WB009C	151	048R	.032	3.50	.9890	.317	.9836	
WB009C	151	0105	.022	2.91	.9426	.369	.9906	
WB009C	151	0140	.098	4.13	.9861	.409	.9932	
WB009C	151	0148	.187	4.18	.9860	.337	.9846	
WB009C	151	0154	.204	4.22	.9838	.364	.9761	
WB009C	151	0159	.189	4.20	.9829	.452	.9971	
WB009C	151	0162	.207	4.36	.9841	.367	.9891	
WB009C	152	0010	.083	4.12	.9889	.334	.9721	
WB009C	152	0032	.077	3.91	.9919	.267	.9537	
WB009C	152	0048	.028	3.57	.9820	.266	.9309	
WB009C	152	0100	.023	3.15	.9970	.270	.9694	
WB009C	152	0134	.022	3.21	.9814	.245	.9315	
WB009C	152	0162	.083	3.91	.9857	.322	.9777	
WB009C	152	0168	.078	3.92	.9864	.332	.9775	
WB009C	152	0173	.091	3.56	.9907	.332	.9848	
WB009C	152	0178	.077	4.43	.9810	.366	.9760	
WB009C	153	0010	.078	3.81	.9910	.286	.9577	
WB009C	153	0030	.094	4.00	.9809	.269	.9520	
WB009C	153	030R	.103	4.25	.9842	.367	.9844	
WB009C	153	0050	.034	3.55	.9961	.262	.9697	
WB009C	153	0080	.036	3.59	.9949	.311	.9831	
WB009C	153	0120	.027	3.02	.9591	.302	.9798	
WB009C	153	0141	.056	3.81	.9834	.395	.9959	
WB009C	153	0151	.182	4.24	.9718	.386	.9945	
WB009C	153	0156	.240	4.16	.9839	.328	.9895	
WB009C	153	0162	.254	4.16	.9788	.399	.9968	
WB009C	154	0011	.113	4.34	.9680	.371	.9737	
WB009C	154	0030	.059	4.27	.9853	.361	.9688	
WB009C	154	0050	.036	3.84	.9901	.316	.9826	
WB009C	154	0085	.021	3.41	.9852	.289	.9857	
WB009C	154	0138	.110	4.03	.9684	.447	.9966	
WB009C	154	0148	.111	4.30	.9721	.432	.9978	
WB009C	154	0158	.167	3.77	.9723	.386	.9977	
WB009C	154	0167	.078	4.09	.9853	.394	.9922	
WB009C	154	0178	.098	4.04	.9726	.394	.9980	

CRUISE	STA	DPTH	VOL	HSLP	CORR	ESLP	CORR
W8009C	157	060A	.469	4.13	.9859	.385	.9946
W8009C	157	060B	.417	4.51	.9801	.404	.9937
W8009C	157	060C	.534	4.38	.9747	.339	.9875
W8009C	02HRS	#A	.377	4.48	.9911	.407	.9907
W8009C	02HRS	#B	.397	4.75	.9826	.334	.9721
W8009C	02HRS	#C	.341	4.61	.9907	.414	.9887
W8009C	04HRS	#A	.382	4.57	.9920	.334	.9689
W8009C	04HRS	#B	.399	4.62	.9827	.458	.9970
W8009C	04HRS	#C	.395	4.53	.9874	.413	.9915
W8009C	06HRS	#A	.439	4.50	.9915	.345	.9820
W8009C	06HRS	#B	.420	4.49	.9850	.306	.9651
W8009C	06HRS	#C	.405	4.47	.9883	.323	.9777
W8009C	08HRS	#A	.355	4.55	.9882	.401	.9915
W8009C	08HRS	#B	.480	4.26	.9868	.361	.9905
W8009C	08HRS	#C	.411	4.57	.9848	.387	.9929
W8009C	10HRS	#A	.440	4.62	.9842	.391	.9935
W8009C	10HRS	#B	.440	4.73	.9837	.398	.9930
W8009C	10HRS	#C	.303	4.47	.9942	.393	.9807
W8009C	12HRS	#A	.503	4.37	.9936	.318	.9767
W8009C	12HRS	#B	.500	4.59	.9815	.390	.9942
W8009C	12HRS	#C	.434	4.40	.9851	.324	.9825

Nitrifying Bacteria Abundances

Table 1 shows the abundances of nitrifying bacteria at selected stations occupied during this cruise. Cells were identified using fluorescence microscopy techniques (Ward and Perry, 1980). Rods are cells stained by *Nitrosomanas marinus* antiserum, but they should not be interpreted to be solely that species. Similarly, cocci are cells stained by *Nitrosococcus oceanus* antiserum, but are not solely that species.

Table 1. Nitrifying bacteria abundances at selected stations occupied during cruise W8009c. Cells were identified using fluorescence microscopy (Ward & Perry, 1980). Rods are cells stained by Nitrosomonas marinus antiserum; cocci are cells stained by Nitrosococcus oceanus antiserum.

Sta	Depth m	10 ³ cells/l		Sta	Depth m	10 ³ cells/l	
		Rods	Cocci			Rods	Cocci
37	5	20.4	9.7	143	0	24.6	11.9
	10	19.5	9.7		5	20.7	11.4
	22	13.3	7.1		10	15.1	7.2
	34	18.9	2.4		15	19.7	10.3
	41	24.8	8.0		20	28.8	14.6
	49	17.0	7.1		30	21.3	10.6
68				147	40	20.4	8.6
	0	22.2	9.0		50	25.7	8.9
	10	21.3	9.5				
	20	12.1	3.5		0	25.3	9.7
	30	14.2	7.1		5	21.7	13.3
	40	14.2	7.1		10	23.1	8.8
131.1	50	22.2	5.3		15	25.7	9.5
					20	23.1	9.7
	0	23.1	3.5		30	17.7	10.6
	5	24.8	7.1		40	24.8	8.9
	10	19.5	10.6		50	30.1	8.8
	15	17.7	3.5	155			
	20	12.4	3.5		5	20.4	13.3
	25	17.7	3.5		20	23.1	11.21
142.1	35	31.9	10.6		30	25.7	3.5
	50	21.3	10.6		40	21.5	8.8
					50	24.8	10.6
	5	20.8	6.9		70	21.3	12.4
	10	22.2	9.3		90	33.7	19.5
	15	13.1	7.7				
	20	19.5	6.4				
	30	17.7	8.9				
	40	16.8	16.5				

Zooplankton Data

Vertical net hauls were taken at 19 stations using a bongo-type net frame with $\frac{1}{2}$ -m nets of 60 μ m and 216 μ m mesh. Hauls were made from 100 m to the surface, or, in shallower water, from close to the bottom to the surface. The nets were closed on descent. Contents of the net cod ends were preserved in 10% v/v sodium acetate-buffered formalin for later laboratory analysis. Only collections made with the 60 μ m mesh net were counted.

In the laboratory, the preserved samples were suspended in a total volume of 400 ml. After agitation to provide homogeneous distribution of plankton, subsamples were taken with either a 5-ml or a 10-ml Stempel pipette and rinsed into counting trays for microscopic analysis. Counts of adult copepods and copepodid stages were made under a dissecting microscope. An inverted microscope was used for enumeration of nauplii and tintinnids.

Adult copepods were identified to species when possible. Copepodid and naupliar stages were either identified to species or combined in similar functional groups, e.g., *Acartia* spp., *Oithona* spp., or small calanoids (*Clausocalanus*, *Paracalanus*, and *Pseudocalanus*). We assumed that copepodid stages placed in these combined groupings feed in a similar manner and therefore exert similar feeding effects on the available food.

Counts were expressed as numbers $\cdot \text{m}^{-2}$.

Table 2. Results of zooplankton net hauls (copepods/m²) taken during W8009, September - October 1980.

Station number:	50	52	55	60	65	66	67	87	88	89	90	91	92	93	106	110	111	112	113
Time of Day:	1500	1830	1015	0550	1230	1500	1730	1330	1940	2055	2130	0000	0130	0300	1030	1630	1750	1930	2110
Depth of Haul:	100 m	100 m	100 m	35 m	40 m	90 m	100 m	100 m	100 m	100 m	100 m	85 m	50 m	27 m	100 m	100 m	100 m	80 m	50 m
Species/stages																			
<i>Acartia clausii</i> - females	-	-	-	-	-	-	-	-	-	-	-	-	-	25,500	-	-	10,200	-	-
- males	-	-	-	-	-	-	-	-	-	-	-	-	-	10,200	-	-	-	-	-
<i>Acartia longiremis</i> - females	35,700	45,800	56,000	71,300	107,000	443,000	102,000	36,600	30,600	81,500	81,500	102,000	117,000	76,400	-	20,400	143,000	117,000	107,000
- males	5,100	30,600	127,000	71,300	71,300	280,000	56,000	20,400	40,700	40,700	17,800	96,800	122,000	40,700	15,300	17,900	40,800	66,200	117,000
- copepodids	15,300	107,000	76,000	102,000	214,000	372,000	25,500	122,000	25,500	10,200	20,400	81,500	204,000	326,000	20,400	-	71,300	35,700	148,000
- nauplii	76,400	351,000	210,000	10,200	178,000	234,000	214,000	132,000	234,000	81,500	127,000	45,800	219,000	637,000	56,000	71,300	194,000	35,700	132,000
<i>Calanus marshallae</i> - females	-	-	-	10,200	-	5,100	-	-	5,100	-	-	-	5,100	-	-	-	-	5,100	-
- males	-	-	-	-	-	-	5,100	-	-	-	-	-	-	-	-	-	-	-	-
- copepodids	-	5,100	5,100	10,200	25,500	188,000	10,200	-	10,200	15,300	10,200	61,100	5,100	20,400	-	-	15,300	81,500	50,800
<i>Calanus pacificus</i> - females	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- males	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- copepodids	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Calanus tenuicornis</i> - females	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- males	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- copepodids	5,100	-	-	-	-	-	-	-	-	-	-	-	5,100	-	-	-	-	-	-
<i>Clausocalanus</i> spp. - females	-	5,100	10,200	5,100	-	-	10,200	-	-	-	2,500	-	-	-	-	-	10,200	-	-
- males	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Corycaeus</i> - females	-	-	-	-	-	-	-	-	5,100	-	-	-	-	-	-	-	-	-	-
- males	5,100	-	-	-	-	-	5,100	-	5,100	-	-	-	5,100	-	-	5,100	-	-	-
- copepodids	-	-	-	-	-	-	-	-	-	-	-	-	10,200	-	-	-	-	-	-
- nauplii	-	-	-	-	-	-	20,400	35,700	-	-	-	-	-	-	-	-	-	-	-
<i>Microsetella</i> spp. - females	40,700	117,000	-	-	-	-	30,600	15,300	132,000	300,000	132,000	-	-	-	718,000	5,100	50,900	-	-
- males	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- copepodids	56,000	255,000	-	-	-	-	255,000	56,000	555,000	194,000	-	-	-	-	957,000	84,000	219,000	-	-
- nauplii	127,300	66,200	-	-	-	-	-	86,600	10,200	91,700	45,800	-	-	-	250,000	250,000	25,500	-	-
<i>Oithona similis</i> - females	173,000	295,000	56,000	96,800	138,000	341,000	188,000	163,000	127,000	56,000	73,800	138,000	112,000	45,800	122,000	102,000	188,000	40,700	40,700
- males	50,900	81,500	25,500	20,400	20,400	40,700	56,000	10,200	15,300	10,200	2,500	20,400	5,100	-	5,100	20,400	35,700	5,100	-
- copepodids	805,000	728,000	107,000	61,100	244,000	453,000	404,000	667,000	241,000	158,000	130,000	112,000	300,000	280,000	255,000	150,000	260,000	25,500	107,000
- nauplii	341,000	407,000	255,000	178,000	290,000	463,000	458,000	382,000	443,000	418,000	255,000	173,000	265,000	357,000	204,000	604,000	459,000	127,000	194,000
<i>Oithona spinirostris</i> - females	-	15,300	-	-	-	5,100	-	15,300	-	5,100	5,100	10,200	-	-	-	7,600	20,400	-	-
- males	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- nauplii	5,100	35,700	35,700	10,200	86,600	20,400	35,700	45,800	10,200	20,400	56,000	5,100	-	96,800	-	5,100	40,700	-	15,300
<i>Paracalanus parvus</i> - females	-	25,500	-	5,100	-	-	5,100	-	-	5,100	2,500	-	5,100	10,200	-	12,700	20,400	-	10,200
- males	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
* <i>Paracalanus parvus</i> } - nauplii	158,000	45,800	35,700	5,100	-	-	20,400	91,700	66,200	10,200	20,400	-	-	255,000	-	122,000	-	-	-
<i>Clausocalanus</i> }																			
* <i>Pseudocalanus</i> spp. } - copepodids	321,000	275,000	209,000	306,000	392,000	810,000	382,000	407,000	76,400	81,000	227,000	418,000	723,000	474,000	143,000	186,000	168,000	351,000	402,000
<i>Paracalanus parvus</i> }																			
<i>Clausocalanus</i> }																			
<i>Pseudocalanus</i> spp. - females	5,100	45,800	382,000	209,000	209,000	937,000	163,000	86,600	10,200	25,500	45,800	311,000	463,000	76,400	-	12,700	15,300	448,000	438,000
- males	-	20,400	66,200	76,400	30,600	132,000	10,200	5,100	-	10,200	5,100	112,000	112,000	5,100	5,100	5,100	-	138,000	40,800
- nauplii	280,000	158,000	723,000	387,000	688,000	917,000	178,000	117,000	102,000	117,000	148,000	1,370,000	1,120,000	458,000	76,400	117,000	153,000	1,060,000	1,250,000
<i>Tintinnids</i>	3,000,000	968,000	-	-	-	-	300,000	1,630,000	886,000	744,000	178,000	-	43,500,000	-	178,000	2,040,000	606,000	-	-

* denotes dominant species

Fig. . Distribution of *Acartia longiremis* (adults/m²) during September-October 1980.

Fig. . Distribution of *Acartia longiremis* (combined copepodid stages/m²) during September-October 1980.

Fig. . Distribution of *Acartia longiremis* (combined naupliar stages/m²) during September-October 1980.

Fig. . Distribution of *Micrositella* sp. (females/m²) during September-October 1980.

Fig. . Distribution of *Micrositella* sp. (combined copepodid stages/m²) during September-October 1980.

Fig. . Distribution of *Micrositella* sp. (combined naupliar stages/m²) during September-October 1980.

Fig. . Distribution of *Oithona similis* (adults/m²) during September-October 1980.

Fig. . Distribution of *Oithona similis*. (combined copepodid stages/m²) during September-October 1980.

Fig. . Distribution of *Oithona similis* (combined naupliar stages/m²) during September-October 1980.

Fig. . Distribution of *Pseudocalanus* spp. (adults/m²) during September-October 1980.

Fig. . . Distribution of combined copepodid stages of *Pseudocalanus*, *Paracalanus*, and *Clausocalanus* species during September-October 1980. *Pseudocalanus* spp. predominated in all samples.

◆ <5000	● 300,000 - 600,000
● 5000 - 50,000	▲ 600,000 - 1,000,000
▲ 50,000 - 300,000	>1,000,000

Fig. . Distribution of *Pseudocalanus* spp. (combined naupliar stages/m²) during September-October 1980.

◆ <5000	● 300,000 - 600,000
● 5000 - 50,000	▲ 600,000 - 1,000,000
▲ 50,000 - 300,000	>1,000,000

Fig. . Distribution of tintinnids (numbers/m²) during September-October 1980.

◆ <100,000	● 1,000,000 - 5,000,000
● 100,000 - 500,000	▲ 5,000,000 - 40,000,000
▲ 500,000 - 1,000,000	● >40,000,000

References

- Carpenter, J.H. 1965. The Chesapeake Bay Institute technique for the Winkler dissolved oxygen method. *Limnol. Oceanogr.* 10: 141-143.
- Dietrich, W.W., Jr., and J.P. Thornber. 1971. The P700-chlorophyll α -protein of a blue-green alga. *Biochim. Biophys. Acta* 245: 482-493.
- Fofonoff, N.P. 1962. Dynamics of ocean currents. In: M.N. Hill (ed.) *The Sea. Vol. I. Physical Oceanography.* Interscience Publishers, New York. pp. 323-395.
- Hiyama, T., and B. Ke. 1972. Difference spectra and extinction coefficients of P700. *Biochim. Biophys. Acta* 267: 160-171.
- Holm-Hansen, O., C.J. Lorenzen, R.W. Holmes, and J.D.H. Strickland. 1965. Fluorometric determination of chlorophyll. *J. Cons. Perm. int. Explor. Mer* 30: 3-15.
- Jassby, A.D., and T. Platt. 1976. Mathematical formulation of the relationship between photosynthesis and light for phytoplankton. *Limnol. Oceanogr.* 21: 540-547.
- Kitchen, J.C. 1978. Particle size distributions and the vertical distribution of suspended matter in the upwelling region off Oregon. M.S. Thesis, School of Oceanography, Oregon State Univ. 118 pp.
- Lorenzen, C.J. 1967. Determination of chlorophyll and phaeopigments: Spectrophotometric equations. *Limnol. Oceanogr.* 12: 343-346.
- Paquette, R.G. 1958. A modification of the Wenner-Smith-Soule salinity bridge for the determination of salinity in seawater. Univ. Wash., Dept. Oceanogr. Tech. Rept. No. 61, Ref. M58-14. 57 pp.
- Pavlou, S.P. 1972. Phytoplankton growth dynamics. Tech. Series 1: Chemostat methodology and chemical analyses. Special Rept. No. 52, Dept. Oceanogr., Univ. Wash., Seattle. 130 pp.
- Perry, M.J., M.C. Larsen, and R.S. Alberte. 1981. Photoadaptation in marine phytoplankton: Response of the photosynthetic unit. *Mar. Biol.* 62: 91-101.
- Shiozawa, J.A., R.S. Alberte, and J.P. Thornber. 1974. The P700-chlorophyll α -protein: Isolation and some characteristics of the complex in higher plants. *Arch. Biochem. Biophys.* 165: 388-397.

- Steemann Nielsen, E. 1952. The use of radioactive carbon (C^{14}) for measuring organic production in the sea. J. Cons. Int. Explor. Mer 18: 117-140.
- Strickland, J.D.H., and T.R. Parsons. 1972. A practical handbook of seawater analysis. Fish. Res. Bd. Canada Bull. 167. 2nd edition, Ottawa. 310 pp.
- UNESCO. 1974. A review of methods used for quantitative phytoplankton studies: Final report of SCOR working group 33. Unesco Technical Papers in Marine Science 18. 27 pp.
- Ward, B.B., and M.J. Perry. 1980. Immunofluorescent assay for the marine ammonium-oxidizing bacterium *Nitrosococcus oceanus*. Appl. Envir. Microbiol. 39: 913-918.
- Weiss, R.F. 1970. The solubility of nitrogen, oxygen, and argon in water and seawater. Deep-Sea Res. 17: 721-735.
- Yentsch, C.S., and D.W. Menzel. 1963. A method for the determination of phytoplankton chlorophyll and phaeophytin by fluorescence. Deep-Sea Res. 10: 221-231.

Appendix 1

Continuous oxygen profile

The algorithm for oxygen includes terms for pressure, salinity, and temperatures of the water and of the oxygen probe. There is a fast response sensor in the CTD to measure water temperature, but a slow response sensor in the oxygen probe itself. The algorithm uses the difference between these two measurements as part of the equation. The algorithm was based on one developed by Stan Hayes (Pacific Marine Environmental Lab/NOAA, Seattle, Washington), with coefficients empirically determined (OSU) from titrated oxygen data (Carpenter, 1965) from W8009 and other cruises in the study area.

$$O_2 \text{ (ml l}^{-1}\text{)} = O_{2\text{satn}} \times O_{2\text{rel}}$$

where $O_{2\text{satn}}$ is the saturation value of dissolved oxygen at the measured temperature and salinity, based on Weiss (1970),

and $O_{2\text{rel}}$ is the relative oxygen concentration at depth, related to the sensor signal by the following algorithm

$$= \left(\frac{C_1}{0.350} \right) e^{(-0.0360T + 0.000167P)}$$

$$C_1 = O_2 \text{ sensor reading} = 0.000402 (\text{sensor frequency}) + 0.005522$$

$$T = T_{\text{CTD}} + 0.75 (T_{\text{OXY}} - T_{\text{CTD}})$$

$$P = \text{pressure in decibars}$$

$$T_{\text{CTD}} = \text{temperature from fast response sensor}$$

$$T_{\text{OXY}} = \text{temperature from slow response sensor}$$

Because the algorithm includes a term based on the difference between the two sensors which have markedly different response times, the algorithm is sensitive to passage of the CTD through a thermocline in either direction.

On a normal downcast, O_2 sensor agrees well with dissolved oxygen titration values in the mixed layer, overestimates concentration within and below the thermocline, and again shows better agreement deeper in the water column as the slow response sensor "catches up" with the fast response one. Thus, the oxygen traces presented in this report should be interpreted with caution. They should be considered to represent trends rather than absolute concentrations.

Appendix 2

Participating personnel and contacts for data

The following table lists the scientific personnel that participated in this cruise, the institutions with which they were affiliated at the time, and duties with which they were principally involved during cruise W8009. The institutions have been abbreviated as follows:

UW = School of Oceanography, WB-10
University of Washington
Seattle, Washington 98195

OSU = School of Oceanography
Oregon State University
Corvallis, Oregon 97331

Following the list of participating personnel is a section identifying whom to contact regarding specific types of data. Although much of the data collected on W8009 is compiled in this report, some had not been reduced in time for publication.

Scientific Personnel

Name	Institution	Duties	Dates aboard
Barbara Hickey	UW	Sr. Scientist Leg I	24-27 Sept
Carl Lorenzen	UW	Sr. Scientist Leg II	24 Sept - 5 Oct
Mike Landry	UW	Sr. Scientist Leg III	5-14 Oct
Will Peterson	UW	Cruise Leader, Legs I, II	24 Sept - 5 Oct
Jim Postel	UW	Cruise Leader, Leg III	24 Sept - 14 Oct
Dale Ripley	UW	Current meters	24-27 Sept
Brion Therioalt	UW	Current meters	24-27 Sept
Nancy Pola	UW	CTD watch	24-27 Sept
Francisco Werner	UW	CTD watch	24-27 Sept
Marco Venturi	UW	CTD watch	24-27 Sept
Alan Cantos-Figuerola	UW	CTD watch	24-27 Sept
Fred Prahl	UW	Sediment traps, nets, box cores	24-27 Sept, 5-14 Oct
Pat Hassett	UW	Deck watch, nets	27 Sept - 14 Oct
Bess Ward	UW	Deck watch, nitrifier bacteria	24 Sept - 14 Oct
Kathy Krogsland	UW	Autoanalyzer	27 Sept - 5 Oct
Mary Kay Talbot	UW	Deck watch, P vs. I, P700	27 Sept - 14 Oct
Andrea Copping	UW	Sediment traps, in situ ¹⁴ C	5-14 Oct
Sandy Moore	OSU	Autoanalyzer	24 Sept - 14 Oct
Chris Weimer	OSU	Nepheloid layer	24 Sept - 14 Oct
Dave Menzies	OSU	CTD	24 Sept - 5 Oct
Jack Trowbridge	OSU	Computer	24-27 Sept
Larry Small	OSU	Nepheloid layer	27 Sept - 5 Oct
Hasong Pak	OSU	CTD	27 Sept - 5 Oct
Rick Spinrad	OSU	Optics	27 Sept - 5 Oct
Jim Kitchen	OSU	Optics	27 Sept - 14 Oct
Mark Brzezinski	OSU	Deck watch	27 Sept - 5 Oct
Wallace Leake	OSU	Deck watch	27 Sept - 5 Oct
Ruberto Millan	OSU	Nepheloid layer	5-14 Oct
Barbara Dexter	OSU	Nepheloid layer	5-14 Oct

Contacts for Data

Name	Institution	Data
Dr. Mary Jane Perry	UW	General hydrographic and CTD data; P700, P vs. I, phytoplankton species, simulated in situ productivity, microbiology.
Ms. Bess Ward	UW	Nitrifier activity.
Dr. Roy Carpenter	UW	Box cores, hydrocarbons
Dr. Carl Lorenzen	UW	Sediment traps; pigments.
Dr. Michael Landry	UW	Microzooplankton, zooplankton, microzooplankton grazing.
Dr. Barbara Hickey	UW	Current meter moorings.
Dr. Ronald Zaneveld Dr. Hasong Pak	OSU	Particle size distribution, irradiance, and water transparency.
Dr. Lawrence Small Ms. Chris Weimer	OSU	Nepheloid layer experiments