UNIVERSITY OF CALIFORNIA, SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 0307
17 - 31 July 2003

CC Reference 06-03
24 January 2006

UNIVERSITY OF CALIFORNIA, SAN DIEGO

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093-0227

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 0307
17 - 31 July 2003

CC Reference 06-05
January 2006

CONTENTS

Introduction 3

Literature Cited 7

CalCOFI Cruise 0307

List of Figures 8

Personnel 19

Tabulated Rosette Cast Data 20

Tabulated Primary Productivity Data 49

Tabulated Macrozooplankton Data 53

CalCOFI Cruise 0307 Avifauna

List of Figures 54

INTRODUCTION

The data presented in this report were collected during the cruise 0307 of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the aboard the RV *New Horizon* of Scripps Institution of Oceanography, University of California, San Diego. The CalCOFI program was organized in the late 1940's to study the causes of variations in population size of fishes of importance to the State of California. It is carried out by NOAA's National Marine Fisheries Service Southwest Fisheries Science Center, the California Department of Fish and Game, and the Integrative Oceanography Division (IOD) at Scripps Institution of Oceanography (SIO). IOD contributes to this program by investigations of the physical, chemical and biological structure of the California Current. Data from the cruises were collected and processed by personnel of the Integrative Oceanography Division and the Southwest Fisheries Science Center. Other SIO staff members and volunteers also assisted in the collection of data and chemical analyses at sea. CalCOFI data presented in this report and collected on previous cruises can be accessed at http://www.calcofi.org.

STANDARD PROCEDURES

CTD/Rosette Cast Data

A Sea-Bird Electronics, Inc., Conductivity-Temperature-Depth (CTD) instrument (Seabird 911, Serial number 1049) with a rosette was deployed at each station on these cruises. The rosette was equipped with 24 ten-liter plastic (PVC) bottles equipped with epoxy-coated springs and Viton O-rings. Each CTD/rosette cast usually sampled 20 depths to a maximum sampling depth of 525 meters, bottom depth permitting. Occasional stations have multiple bottles tripped at the same depth to provide more water for ancillary programs. The sample spacing was designed to sample depth intervals as close as 10 meters around the sharp upper thermocline features such as the chlorophyll, oxygen, nitrite maxima and the shallow salinity minimum. Salinity, oxygen and nutrients were determined at sea for all depths sampled. Chlorophyll-*a* and phaeopigments were determined at sea on samples from the top 200 meters, bottom depth permitting.

Pressures and temperatures assigned to the water sample data were derived from the CTD signals recorded just prior to the bottle trip. Pressures have been converted to depths by the Saunders (1981) pressure-to-depth conversion technique. CTD temperatures reported with the bottle data have been rounded to the nearest hundredth of a degree Celsius.

Salinity samples were collected from all rosette bottles and analyzed at sea using a Guildline model 8410 Portasal salinometer. Salinity samples were drawn into 200 ml Kimax high-alumina borosilicate bottles that were rinsed three times with sample prior to filling. The results were compared with the CTD salinity to verify that the rosette bottle did not mis-trip or leak. The salinometer was standardized before and after each group of samples with standardized seawater. Periodic checks on the conductivity of the standardized seawater were made by comparison with IAPSO Standard Seawater batch P140. Salinity values were calculated using the algorithms for the Practical Salinity Scale, 1978 (UNESCO, 1981a) and are reported to three decimal places, provided that accepted standards were met.

Dissolved oxygen samples were collected in calibrated 100 ml iodine flasks, allowing at least 200% overflow. The dissolved oxygen samples were analyzed at sea by the Winkler method, as modified by Carpenter (1965), using the equipment and procedure outlined by Anderson (1971). Percent oxygen saturation was calculated from the equations of Weiss (1970).

Nutrient samples were analyzed at sea by the Scripps Ocean Data Facility for dissolved silicate, phosphate, nitrate and nitrite using procedures similar to those described in Gordon et al., 1993. Samples were collected in 45 ml high-density polypropylene screw-capped tubes which were rinsed three times prior to filling. Standardizations were done at the beginning and end of each group of samples with a set of mid-concentration range standards prepared fresh for each run. Samples not analyzed immediately after collection were refrigerated and run the

* The first two digits represent the year and the last digits the month of the cruise.

following day. Sets of six different concentration standards were analyzed periodically to determine the deviation from linearity as a function of concentration, for the silicate, nitrate and phosphate analyses. Final sample concentrations were corrected for deviations from linearity using a second order polynomial.

Samples for chlorophyll-*a* and phaeopigments were collected in calibrated 138 ml polyethylene bottles and filtered onto Whatman GF/F filters. The pigments were extracted in cold 90% acetone (Venrick and Hayward, 1984) for a minimum of 24 hours. Chlorophyll a and phaeopigment concentrations were determined from fluorescence readings before and after acidification with a Turner Designs Fluorometer Model 10-AU-005-CE (Yentsch and Menzel, 1963; Holm-Hansen *et al*., 1965).

Evaluation of the water sample data involved comparisons with the CTD data, adjacent stations and consideration of the variation of a property as a function of density or depth and the relationships with other properties (Klein, 1973). Precision estimates for routine analyses were made on CalCOFI cruise 9003 and are reported in SIO Ref. 91-4.

Primary Productivity Sampling

Primary productivity samples were taken each day shortly before local apparent noon (LAN). Primary production was estimated from ^{14}C uptake using a simulated *in situ* technique. Light penetration was estimated from the Secchi depth (assuming that the 1% light level is three times the Secchi depth). The depths with ambient light intensities corresponding to light levels simulated by the on-deck incubators were identified and sampled on the rosette up-cast. Occasionally an extra bottle or two were tripped in addition to the usual 20 levels sampled in the combined rosette-productivity cast in order to maintain the normal sampling depth resolution. Triplicate samples (two light and one dark control) were drawn from each productivity sample depth into 250 ml polycarbonate incubation bottles. Samples were inoculated with 10 µCi of ^{14}C as $NaHCO_3$ (200 µl of 50 µCi/ml stock) prepared in a 0.3 g/liter solution of sodium carbonate (Fitzwater *et al*., 1982). Samples were incubated from LAN to civil twilight in seawater-cooled incubators with neutral-density screens which simulate *in situ* light levels. At the end of the incubation, the samples were filtered onto Millipore HA filters and placed in scintillation vials. One half ml of 10% HCl was added to each sample. The sample was then allowed to sit, without a cap, at room temperature for 12 hours (after Lean and Burnison, 1979). Following this, 10 ml of scintillation cocktail were added to each sample and the samples were returned to SIO where the radioactivity was determined with a scintillation counter. Salinity, oxygen, nutrients, chlorophyll-*a* and phaeopigments were determined from all rosette productivity bottles.

Macrozooplankton Net Tows

Macrozooplankton was sampled with a 71 cm mouth diameter paired net (bongo net) equipped with 0.505mm plankton mesh. Bottom depth permitting, the nets were towed obliquely from 210 meters to the surface. The tow time for a standard tow was 21.5 minutes. Volumes filtered were determined from flowmeter readings and the mouth area of the net. Only one sample of each pair was retained and preserved. The biomass, as wet displacement volume, after removal of large (>5 ml) organisms, was determined in the laboratory ashore. These procedures are summarized in greater detail in Kramer *et al*. (1972). An Optical Plankton Counter (OPC, Dave Checkley, SIO) was routinely used in one side of the paired bongo net frame. The purpose of the OPC is to obtain information on the vertical distributions of size categories of zooplankton, using data from the counter, without affecting the ongoing time series of data obtained from the catches of the integrative bongo net.

Avifauna Observations (Point Reys Bird Observatory)

Sea birds were counted within a 300-meter wide strip off to one side of the ship. Counts were made while underway between stations during periods of daylight. These counts were summed over 20 nautical mile (nm) intervals, or the distance between consecutive stations, whichever was less. Included at the end of this report are individual maps of the most numerous bird species (individuals/nm).

Ancillary Programs

Several ancillary programs produced data on these cruises that are not presented in this report. These programs include:

1) *Underway Data*. Continuous near surface measurements of temperature, salinity and *in vivo* chlorophyll fluorescence were recorded from seawater pumped through the ship's uncontaminated seawater system. Water was drawn from a depth of approximately 3 meters. The data were logged in one-minute averages using a Sea-Bird Electronics, Inc., SBE 45 MicroTSG Thermosalinograph and a Wetlabs Wetstar fluorometer.

2) *ADCP*. Continuous profiles of ocean currents and acoustic backscatter between 20 and 500 meters deep were measured along the shiptrack from a hull-mounted 150 kHz Acoustic Doppler Current Profiler (ADCP). The ADCP data were averaged over 3-minute intervals. Sixty 8-meter depth bins were recorded. (T. Chereskin, SIO)

3) *Taxon-specific pigments*. Water samples were collected from a depth of 10 m for the analysis of taxon-specific pigments (chlorophylls and carotenoids) by high-pressure liquid chromatography (R. Goericke, SIO).

4) *Trace metals*. Surface seawater samples were obtained for iron analysis (dissolved and total iron) at approximately 30 stations using trace metal-clean GO-flo bottles and a trace metal-clean pole sampler. Iron addition incubations were also performed at several stations to assay for iron limitation in the phytoplankton community. (K. Barbeau, SIO).

5) *Particulate Calcium*. Samples were taken from prodo bottles and filtered for particulate calcium. Calcium determined by Flame Atomic Absorption Spectroscopy of acidified samples and normalized to light levels. (V. Fabry, CSUSM)

TABULATED DATA

CTD/Rosette Cast Data

The time reported is the Coordinated Universal Time (UTC) of the first rosette bottle trip on the up cast. The rosette bottles tripped on the up cast are reported as cast 2, where cast 1 is considered to be the down CTD profile. The sample number reported is the cast number followed by a two-digit rosette bottle number. Bottom depths, determined acoustically, have been corrected using British Admiralty Tables (Carter, 1980) and are reported in meters. Weather conditions have been coded using WMO code 4501. Secchi depths are reported for most daylight stations.

Data values from discreet sampled CTD rosette were interpolated and are reported for standard depths. Interpolated or extrapolated standard level data are noted by the footnote "ISL" printed after the depth. Multiple bottles tripped at the same depth to provide water for ancillary programs are not used in the calculation of standard depth data. Density-related parameters have been calculated from the International Equation of State of Seawater 1980 (UNESCO, 1981b). Computed values of potential temperature, sigma-theta, specific volume anomaly (SVA), and dynamic height or geopotential anomaly are included with both observed and interpolated standard depth levels.

On stations where primary productivity samples were drawn a footnote appears after each productivity depth sampled. The corresponding primary productivity data are reported in a separate section following the tabulated rosette cast data.

Primary Productivity Data

In addition to the normal hydrographic data that are reported in the rosette cast data section, the tabulated data include: the *in situ* light levels at which the samples were collected, the uptake from each of the replicate light bottles, uptake 1 and uptake 2 (which have been corrected for dark uptake by subtracting the dark value), the mean of the two uptake values and the dark uptake. The uptake values are totals for the incubation period. Also shown are the times of LAN, civil twilight, and the value of the mean uptake integrated from the surface to the deepest sample, assuming the shallowest value continues to the surface and that negative values (when dark uptake exceeds

light uptake) are zero. The uptake data are reported to two significant digits (values <1.00) or one decimal (values >1.00). Incubation time, LAN, and civil twilight are given in local Pacific Standard Time (PST); to convert to UTC, add eight hours to the PST time. Incubation light intensities are listed in a footnote at the bottom of each page.

Macrozooplankton Data

Macrozooplankton biomass volumes are tabulated as total biomass volume ($cm^3/1000m^3$ strained) and as the total volume minus the volume of larger organisms under the heading "Small." Tow times are given in local PST (+8) time.

FOOTNOTES

In addition to footnotes, special notations are used without footnotes because the meaning is always the same:

D: CTD salinity value listed in place of normal shipboard salinity analysis.
ISL: After a depth value indicates that this is an interpolated or extrapolated standard level.
U: Uncertain value. Values which are not used in interpolation because they seem to be in error without apparent reason.

LITERATURE CITED

Anderson, G. C., compiler, 1971. "Oxygen Analysis," Marine Technician's Handbook, SIO Ref. No. 71-8, Sea Grant Pub. No. 9.

Carpenter, J. H., 1965. The Chesapeake Bay Institute technique for the Winkler dissolved oxygen method. *Limnol. Oceanogr., 10*: 141-143.

Carter, D. J. T., 1980. Echo-sounding correction tables. Third Edition. Hydrographic Department, Ministry of Defence, Taunton, U.K., NP 139: 150 pp.

Culberson, C. H. 1991. Dissolved oxygen. WHP Operations and Methods -- July 1991.

Fitzwater, S. E., G. A. Knauer and J. H. Martin, 1982. Metal contamination and its effect on primary production measurements. *Limnol. Oceanogr., 27*: 544-551.

Gordon, L. I., J. C. Jennings, Jr., A. A. Ross, and J. M. Krest, 1993. A suggested protocol for continuous flow automated analysis of seawater nutrients (phosphate, nitrate, nitrite and silicic acid) in the WOCE Hydrographic Program and the Joint Global Ocean Fluxes Study. WOCE Operations Manual, Part 3.1.3 "WHP Operations and Methods," *WHP Office Report WHPO 91-1*.

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.

Klein, H. T., 1973. A new technique for processing physical oceanographic data. SIO Ref. No. 73-14.

Kramer, D., M. J. Kalin, E. G. Stevens, J. R. Thrailkill and J. R. Zweifel, 1972. Collecting and processing data on fish eggs and larvae in the California Current region. *NOAA Technical Report NMFS CIRC-370:* 38 pp.

Lean, D. R. S. and B. K. Burnison, 1979. An evaluation of errors in the ^{14}C method of primary production measurement. *Limnol. Oceanogr., 24*: 917-928.

Reid, J. L. and A. W. Mantyla, 1976. The effect of the geostrophic flow upon coastal sea elevations in the northern North Pacific Ocean. *J. Geophys. Res., 81:* 3100-3110.

Parsons, T. R., Y. Maita, C. M. Lalli, 1984. *A Manual of Chemical and Biological Methods for Seawater Analysis*. Pergamon Press Ltd., 3-28.

Saunders, P. M., 1981. Practical conversion of pressure to depth. *J. Phys. Oceanogr., 11*: 573-574.

Scripps Institution of Oceanography, University of California, 1991. Physical, Chemical and Biological Data, CalCOFI Cruises 9003 and 9004. SIO Ref. 91-4, 96 pp.

UNESCO, 1981, a. Background papers and supporting data on the Practical Salinity Scale, 1978. *UNESCO Tech. Pap. in Mar. Sci., No. 37*.

UNESCO, 1981, b. Background papers and supporting data on the International Equation of State 1980. *UNESCO Tech. Pap. in Mar. Sci., No. 38.*

Venrick, E. L. and T. L. Hayward, 1984. Determining chlorophyll on the 1984 CalCOFI surveys. *CalCOFI Rep., Vol. XXV*: 74-79.

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.

FIGURES

Cruise 0307

1. CalCOFI Cruise 0307 track and station positions.

2. Horizontal distribution of dynamic height anomaly (0 over 500m). In areas shallower than 500 m, the dynamic heights were extrapolated on the basis of the offshore deeper steric height as described in Reid and Mantyla (1976).

3. Horizontal distributions at 10 meters: A) chlorophyll-*a*; B) potential density; C) temperature; and D) salinity.

4. Horizontal distributions at 200 meters: A) dynamic height anomaly (200 over 500 m); B) potential density; C) temperature; and D) salinity.

5. Sections along CalCOFI line 90 (vertical exaggeration, 1000): A) potential density; B) temperature; C) salinity; D) silicate; E) nitrate; F) phosphate; G) chlorophyll-*a*; H) oxygen saturation; I) oxygen; J) nitrite; and K) phaeopigments.

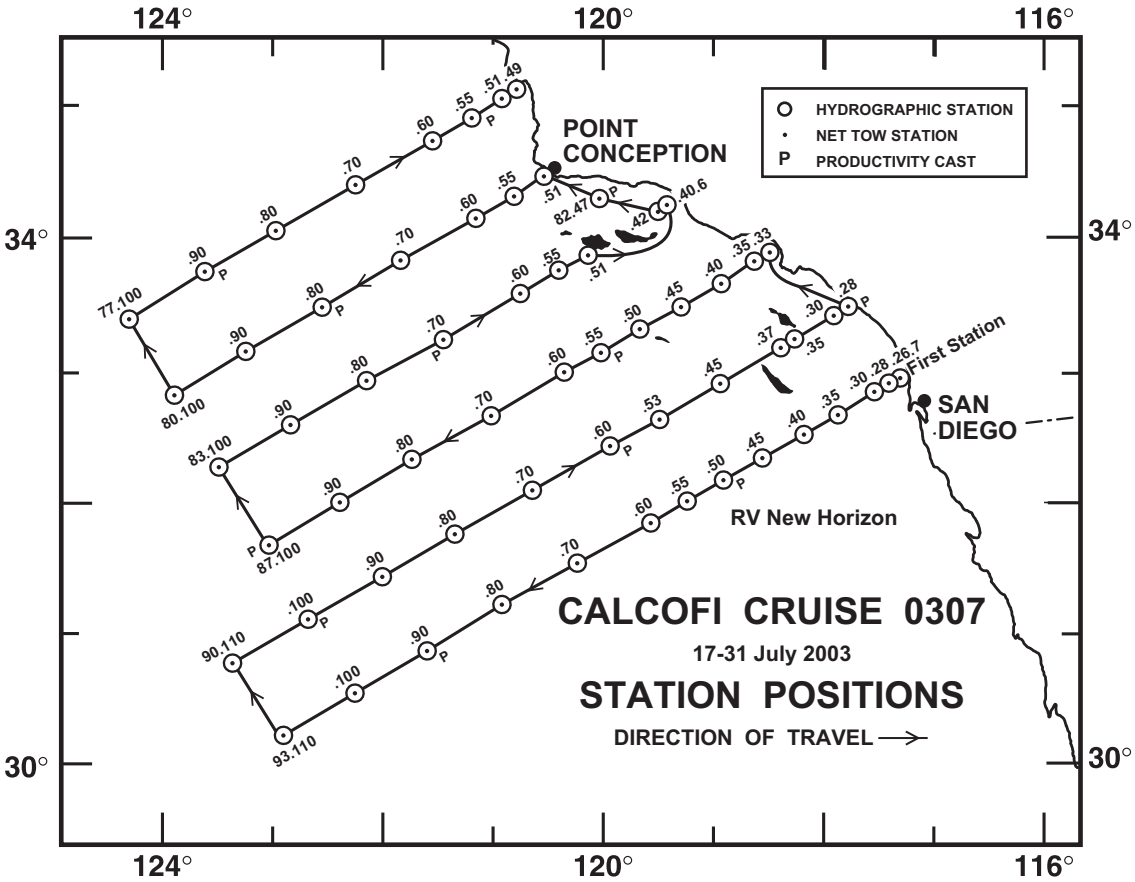


FIGURE 1

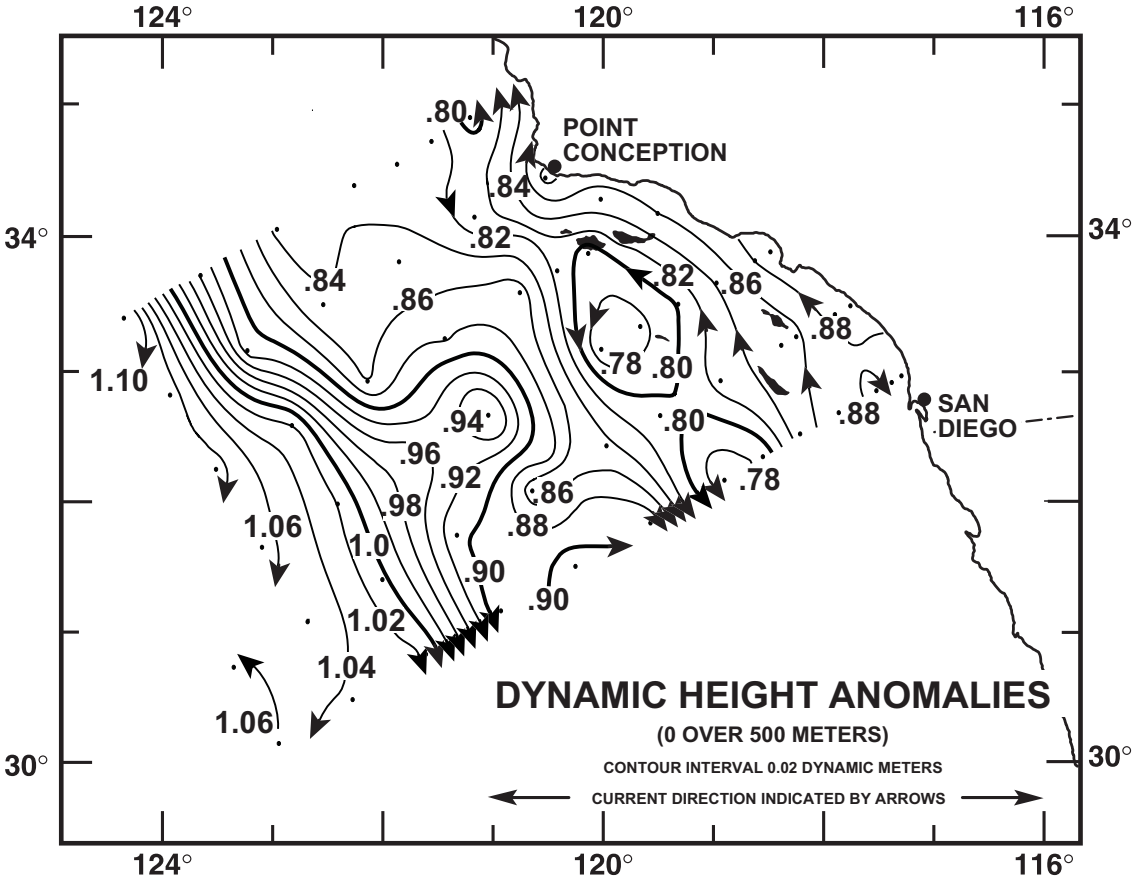


FIGURE 2

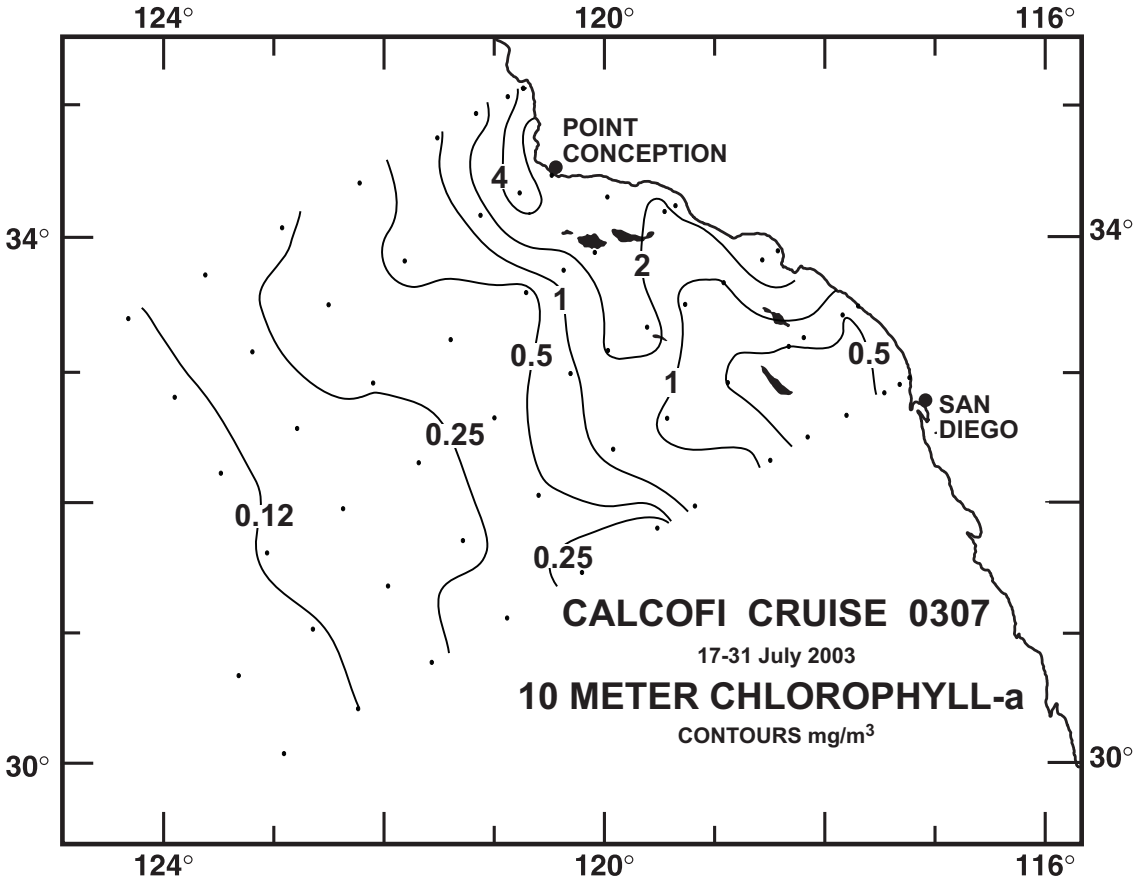


FIGURE 3A

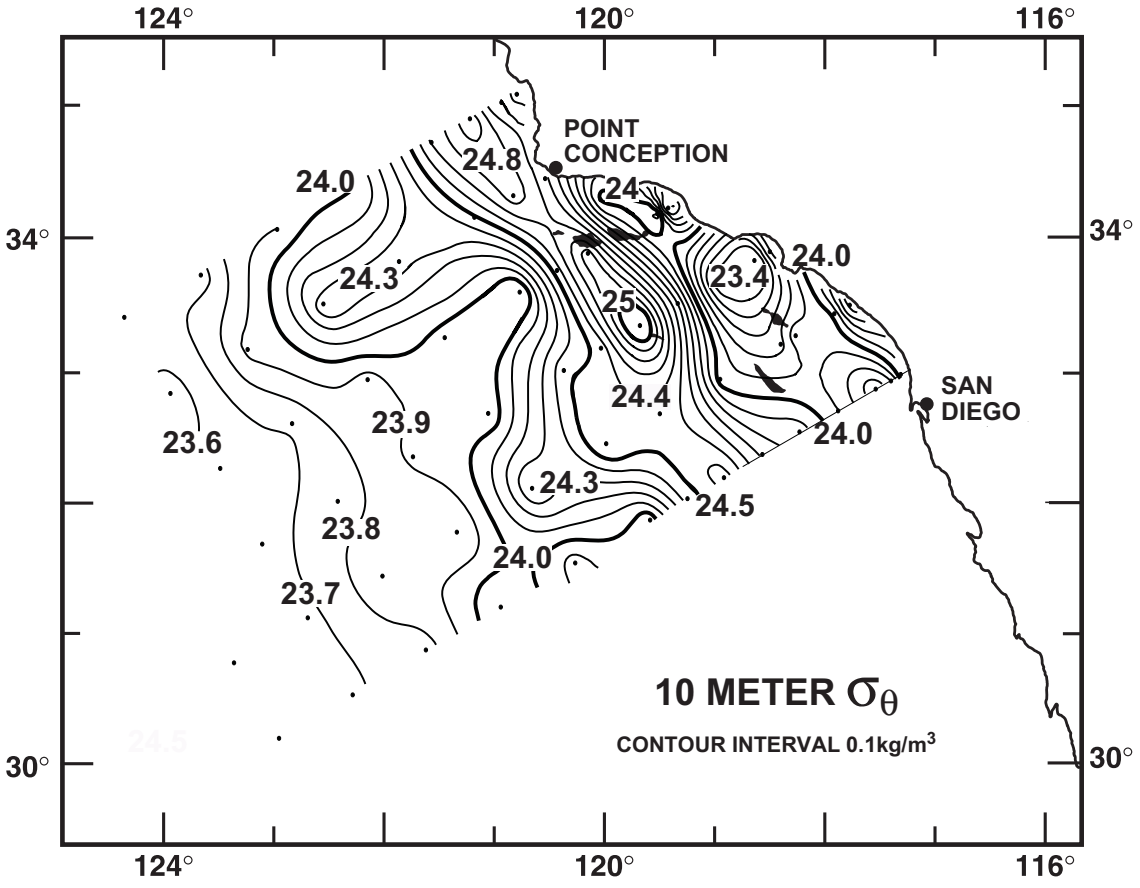


FIGURE 3B

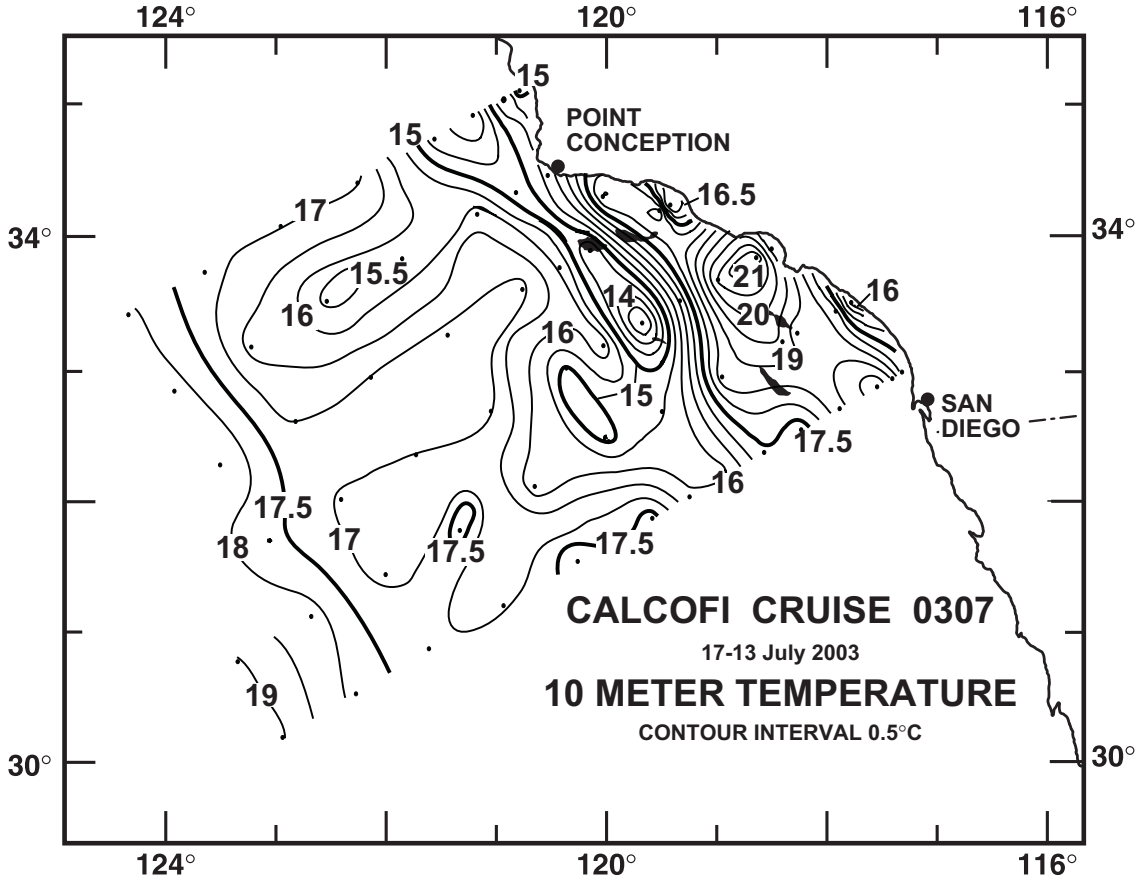


FIGURE 3C

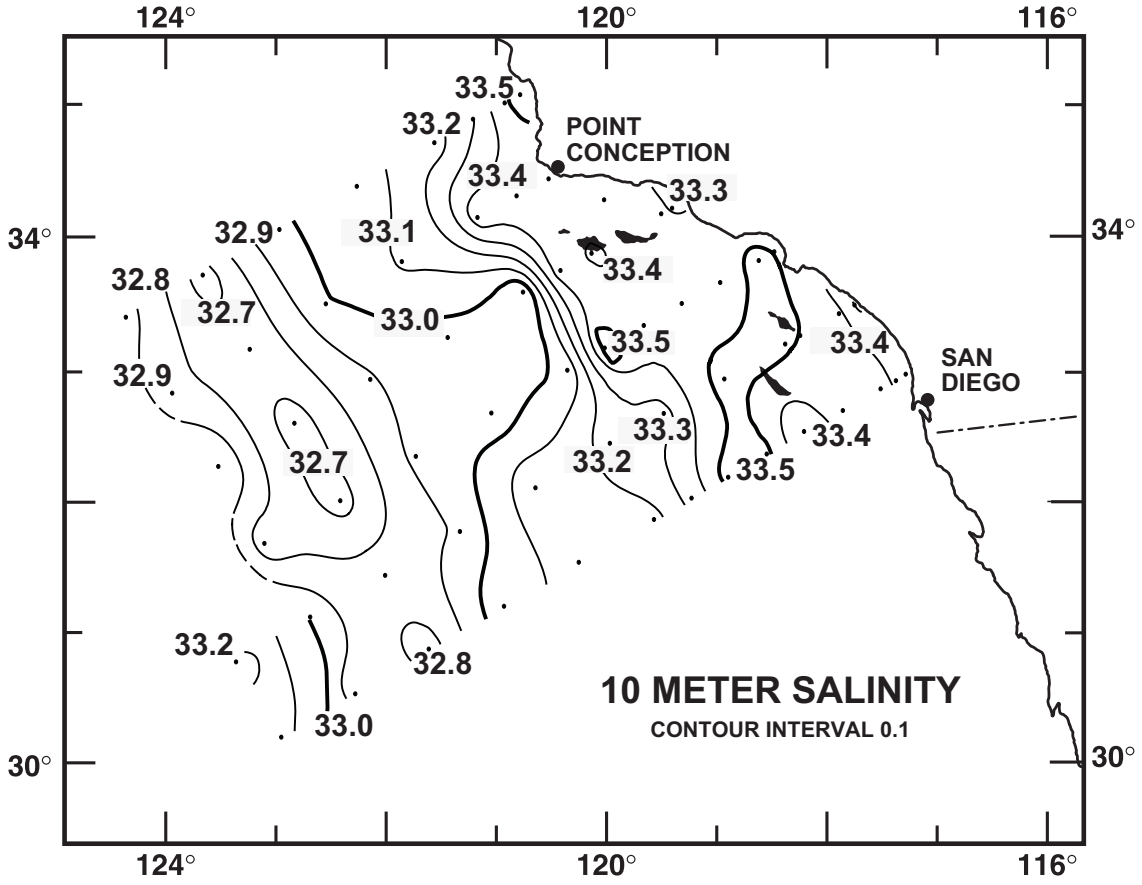


FIGURE 3D

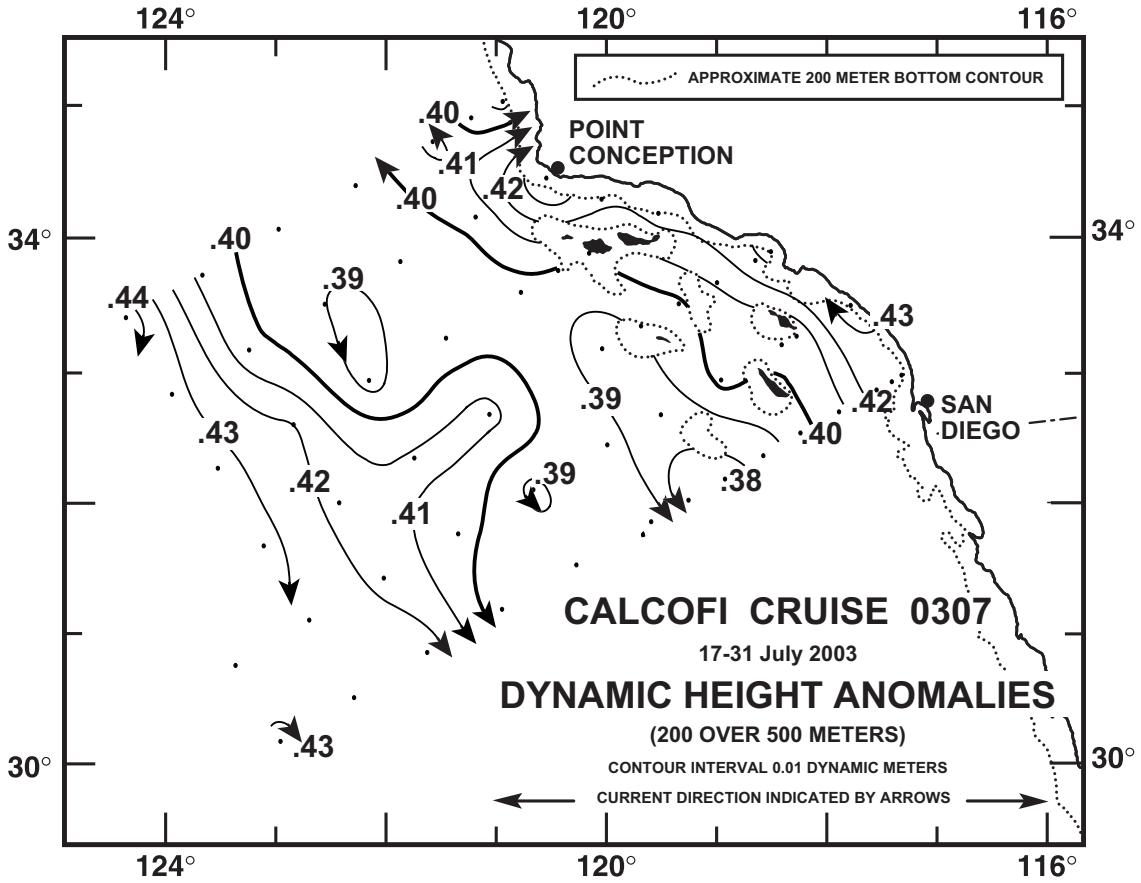


FIGURE 4A

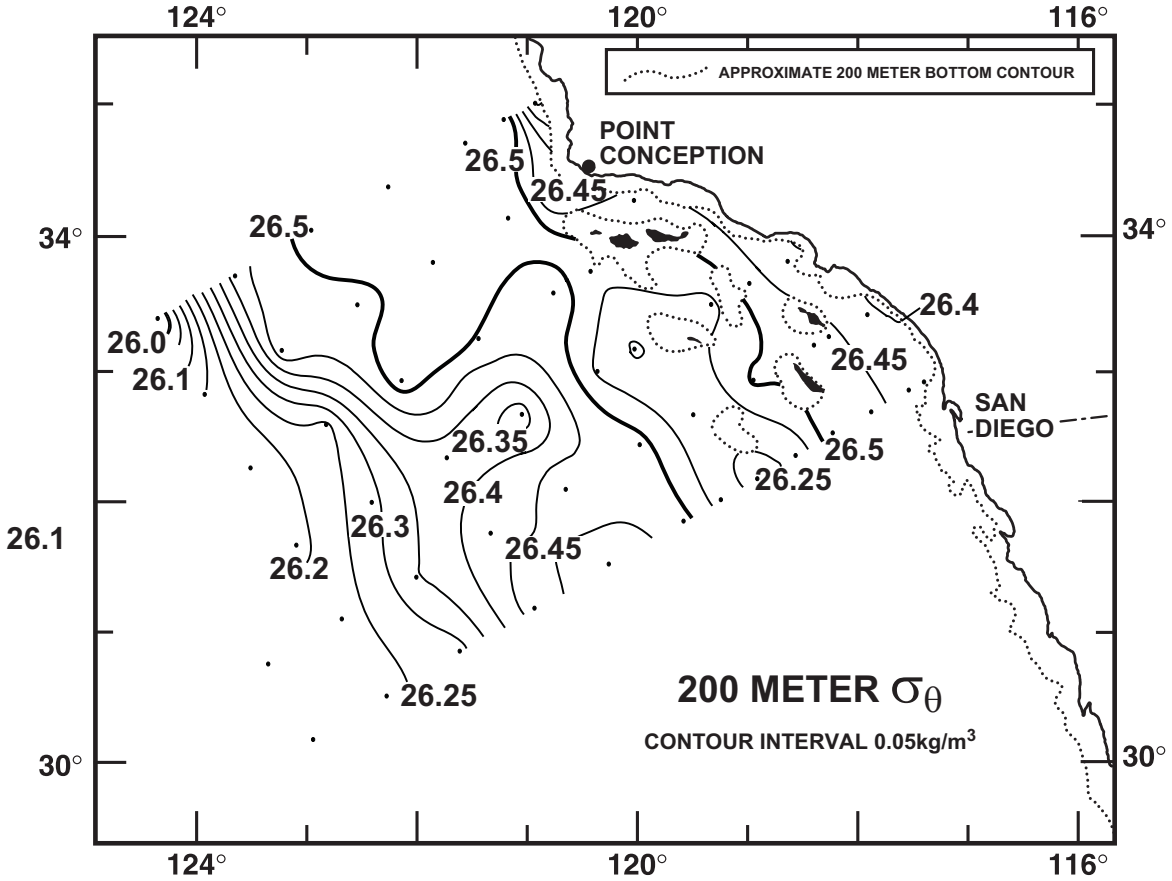


FIGURE 4B

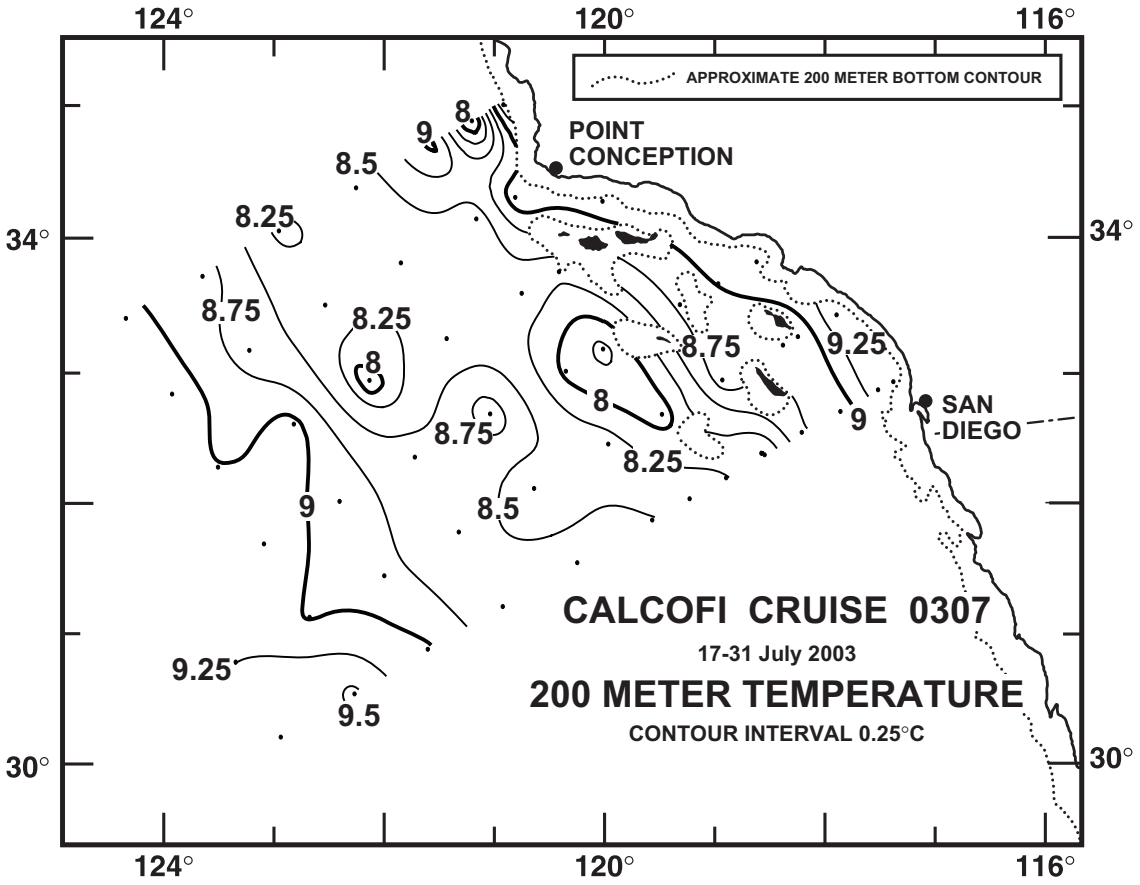


FIGURE 4C

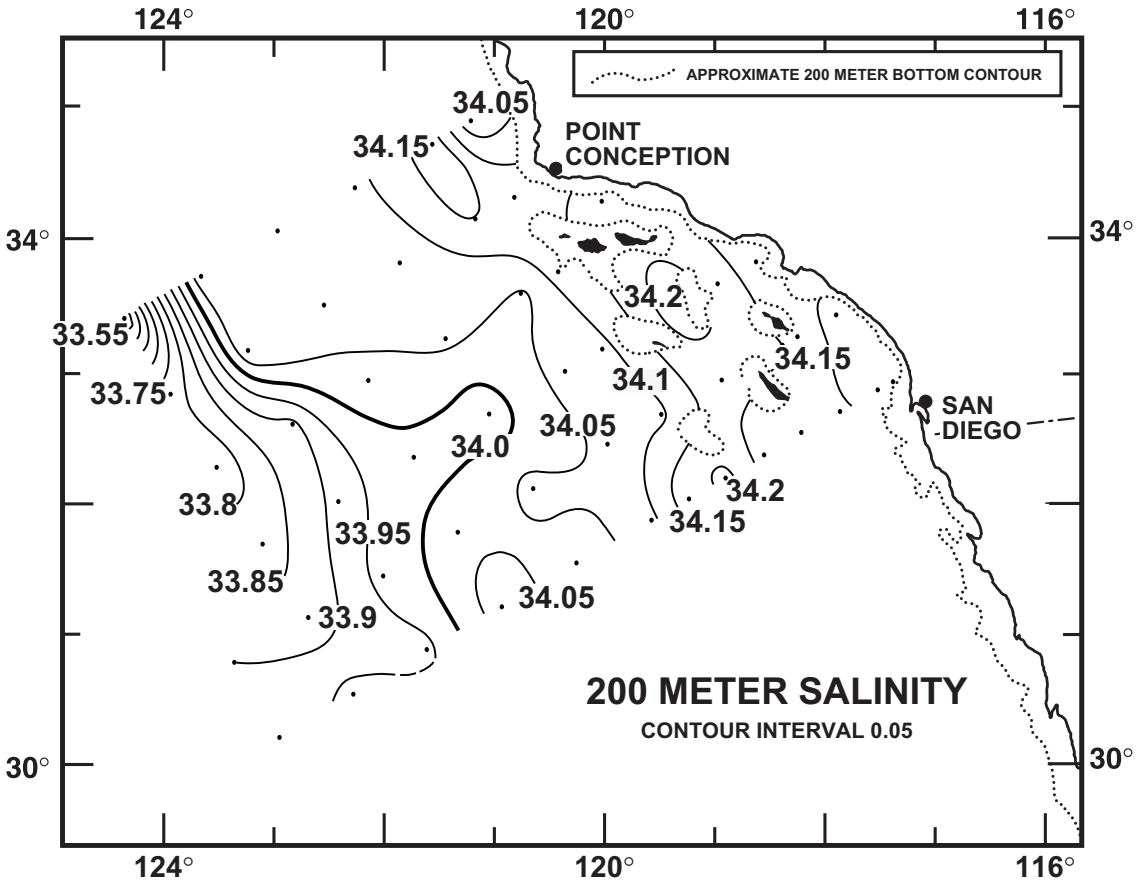


FIGURE 4D

CALCOFI CRUISE 0307

20-22 July 2003

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

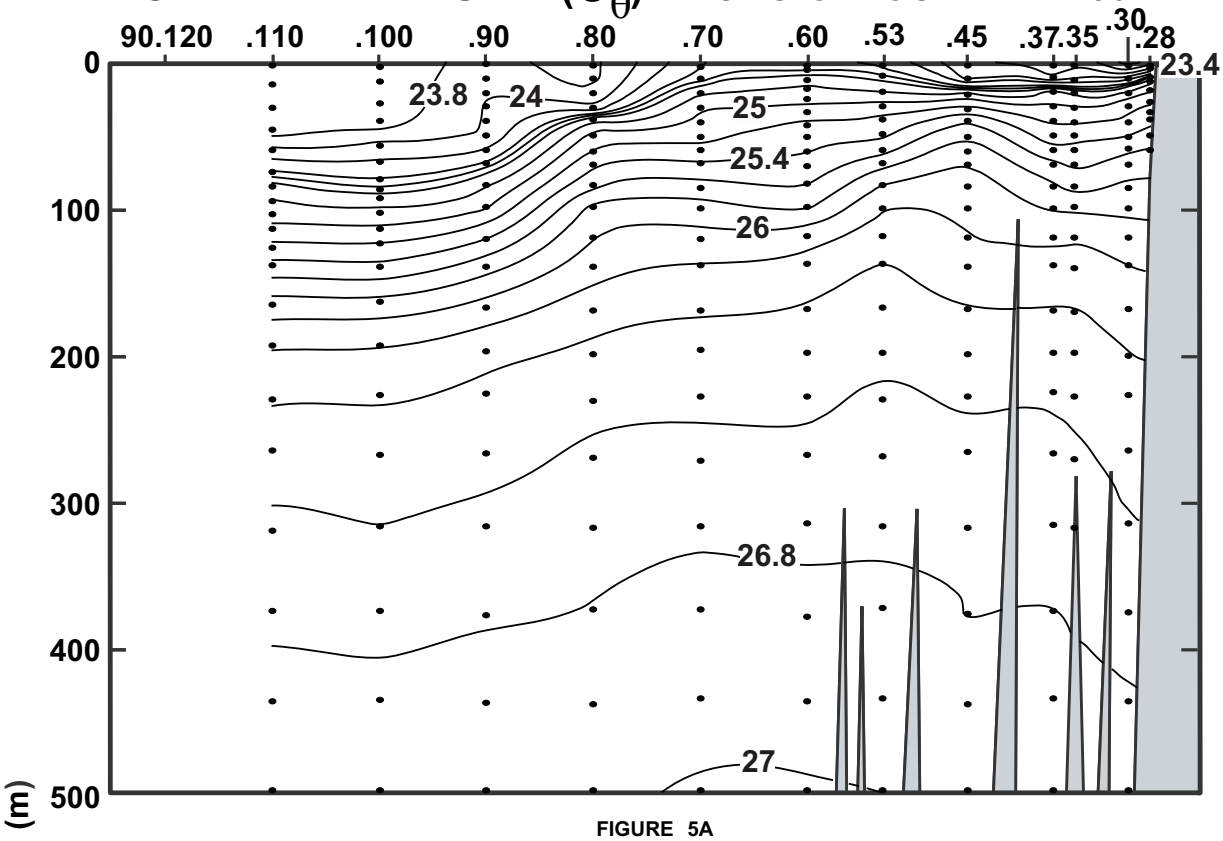


FIGURE 5A

TEMPERATURE (°C) ALONG CALCOFI LINE 90

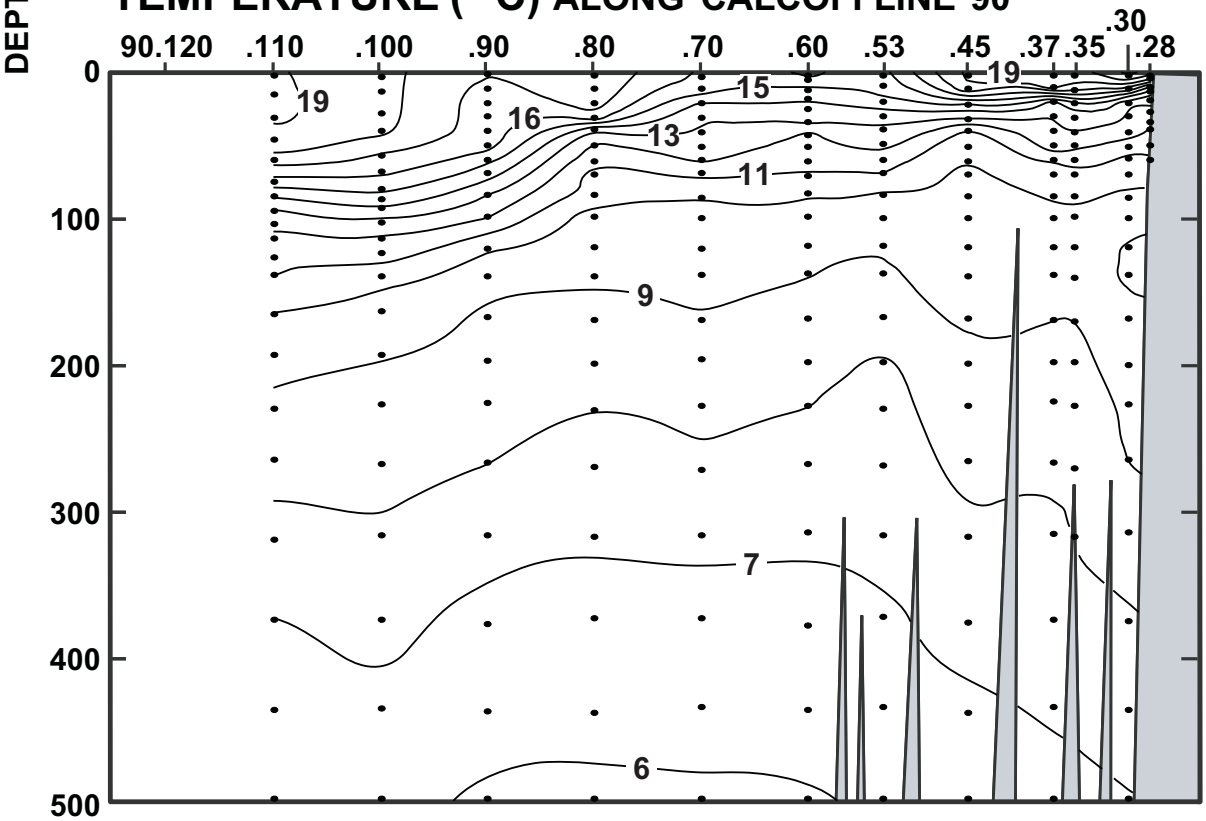


FIGURE 5B

CALCOFI CRUISE 0307

20-22 July 2003

SALINITY ALONG CALCOFI LINE 90

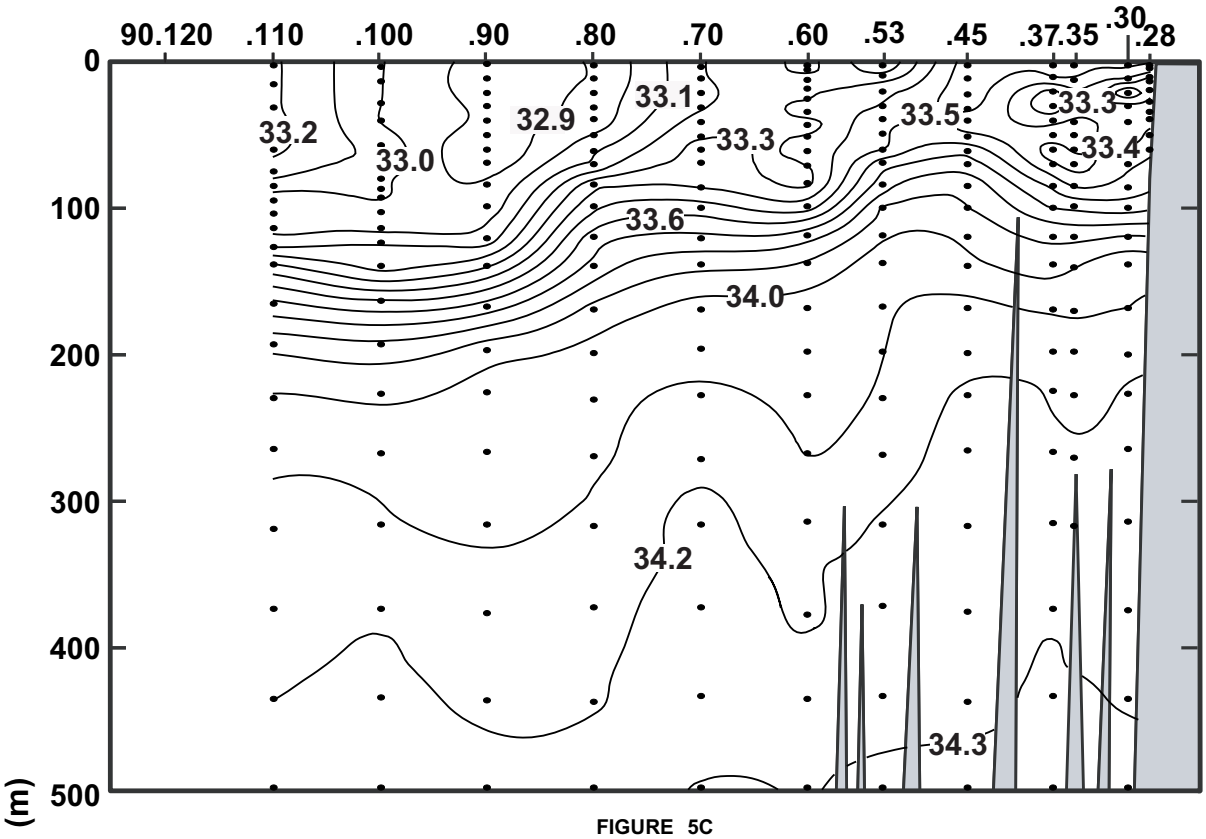


FIGURE 5C

SILICATE (μM/L) ALONG CALCOFI LINE 90

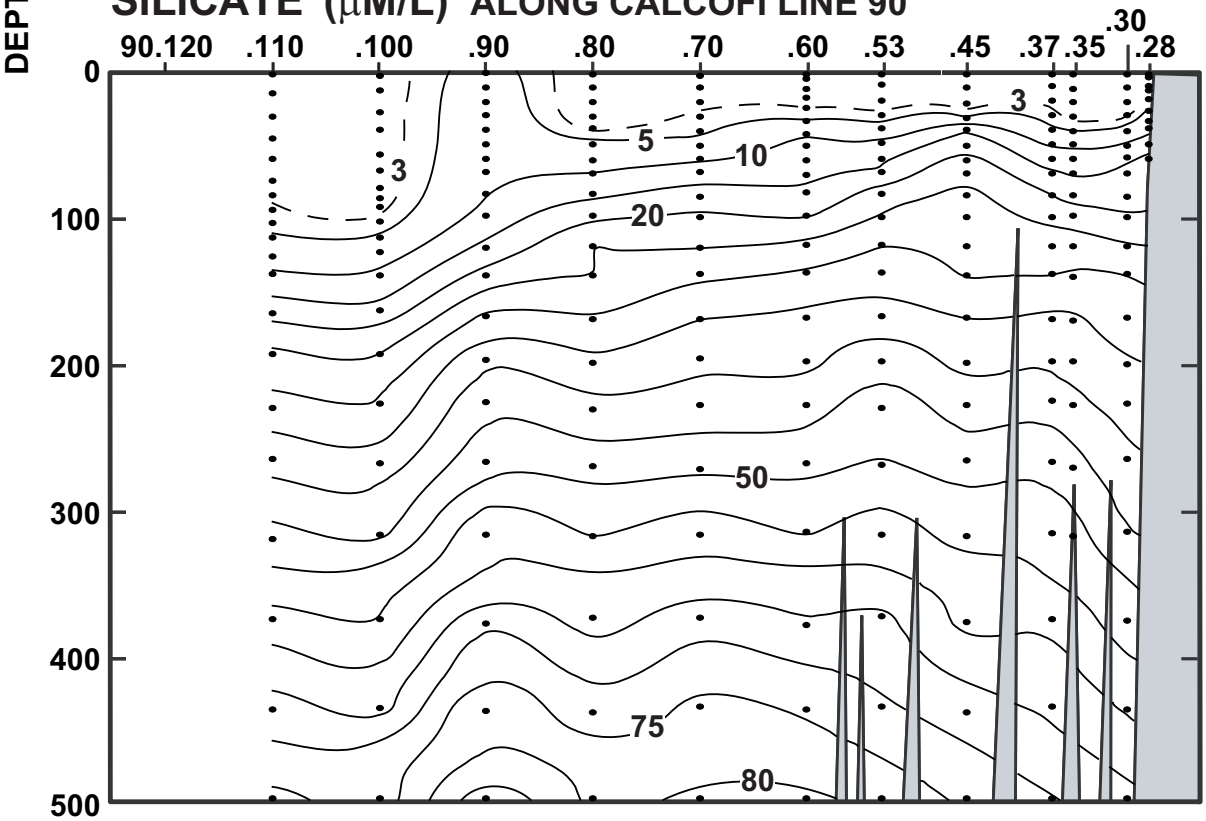


FIGURE 5D

CALCOFI CRUISE 0307

20-22 July 2003

NITRATE (μM/L) ALONG CALCOFI LINE 90

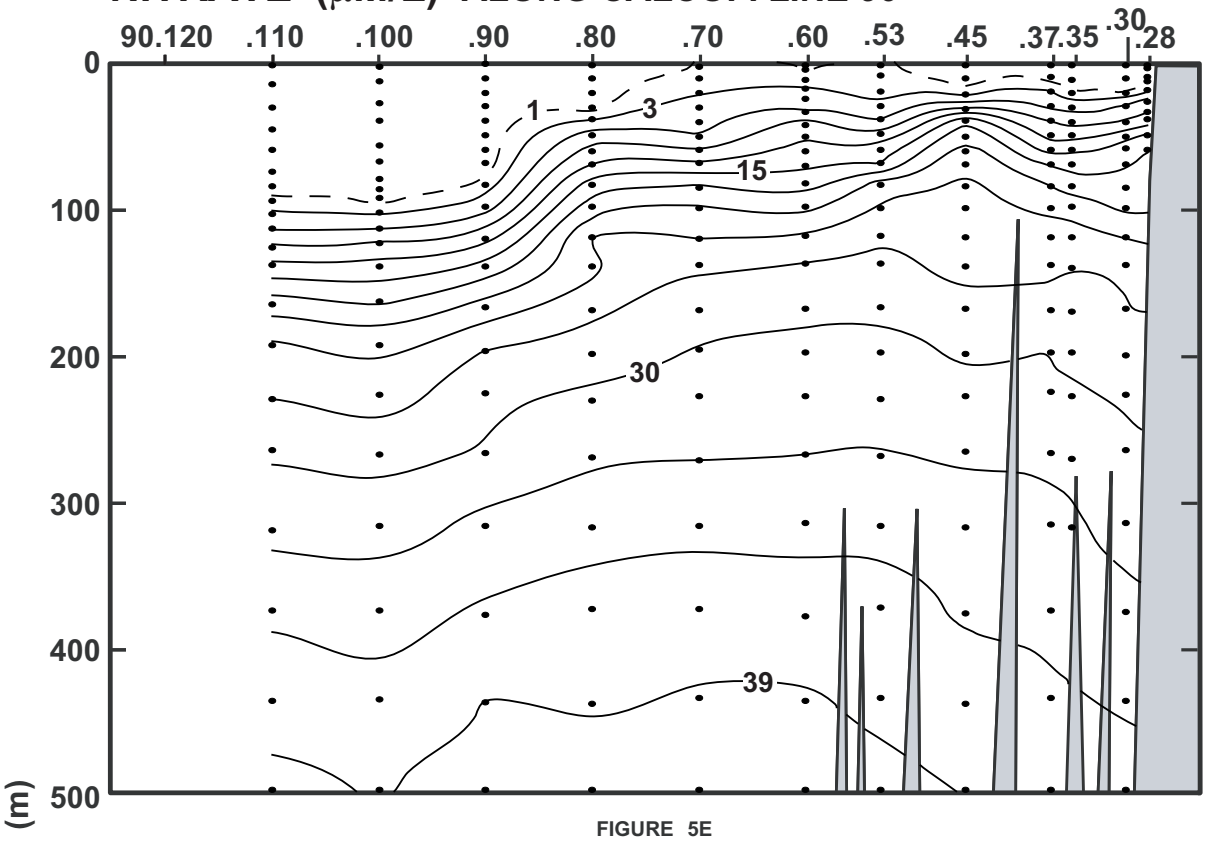


FIGURE 5E

PHOSPHATE (μM/L) ALONG CALCOFI LINE 90

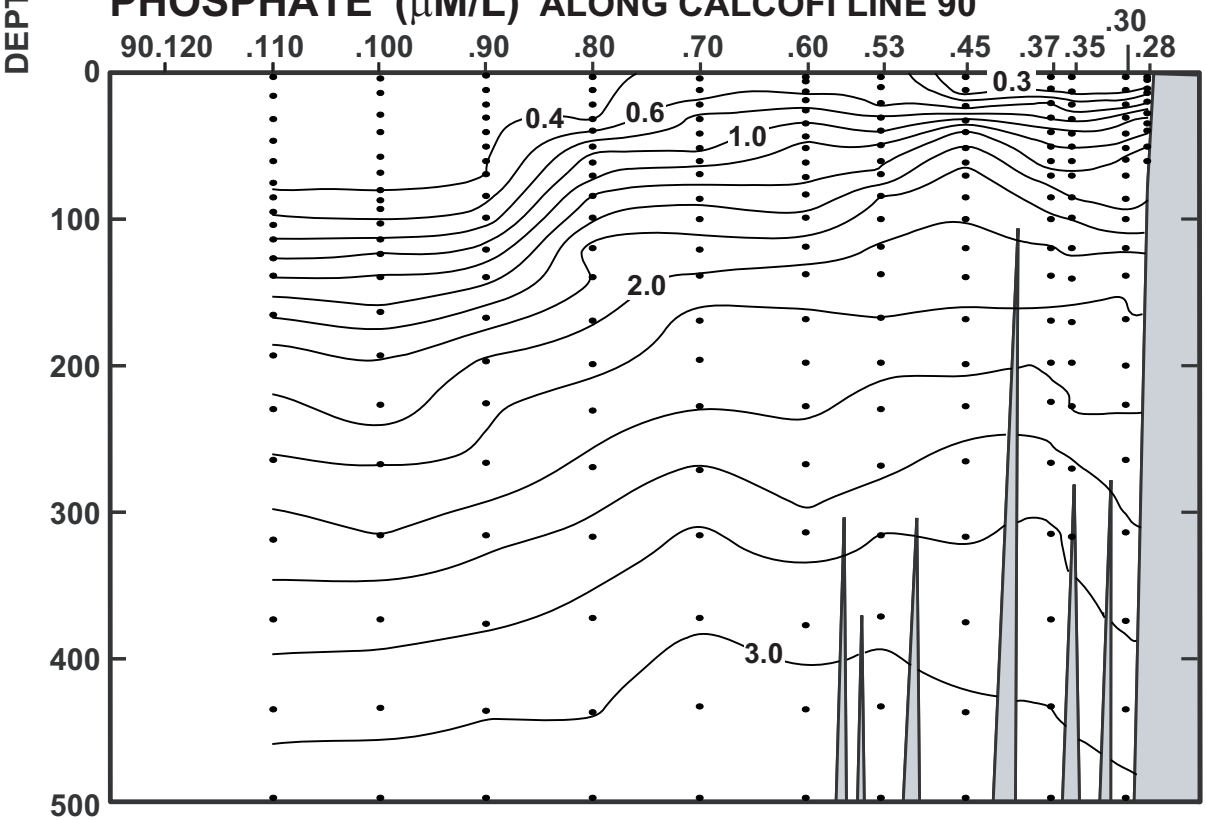


FIGURE 5F

CALCOFI CRUISE 0307

20-22 July 2003

CHLOROPHYLL-a (μg/L) ALONG CALCOFI LINE 90

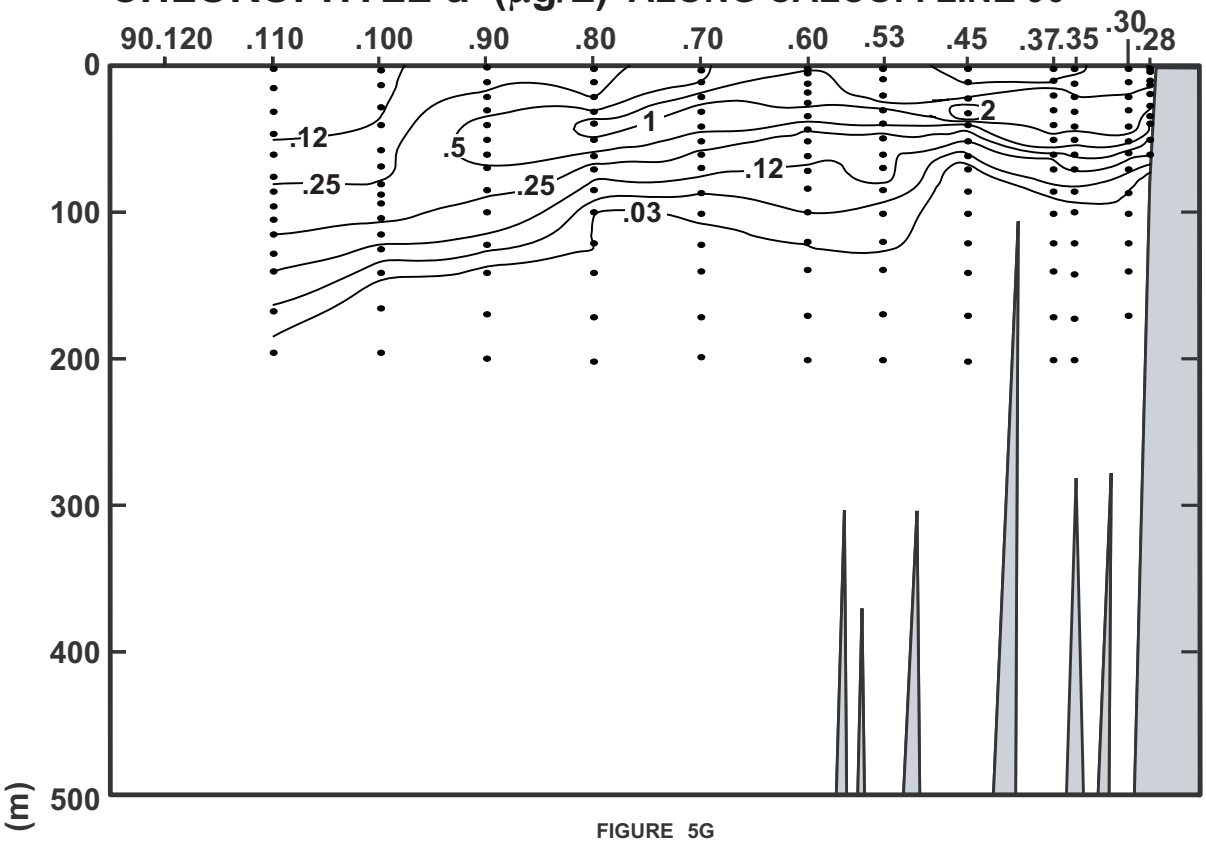


FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

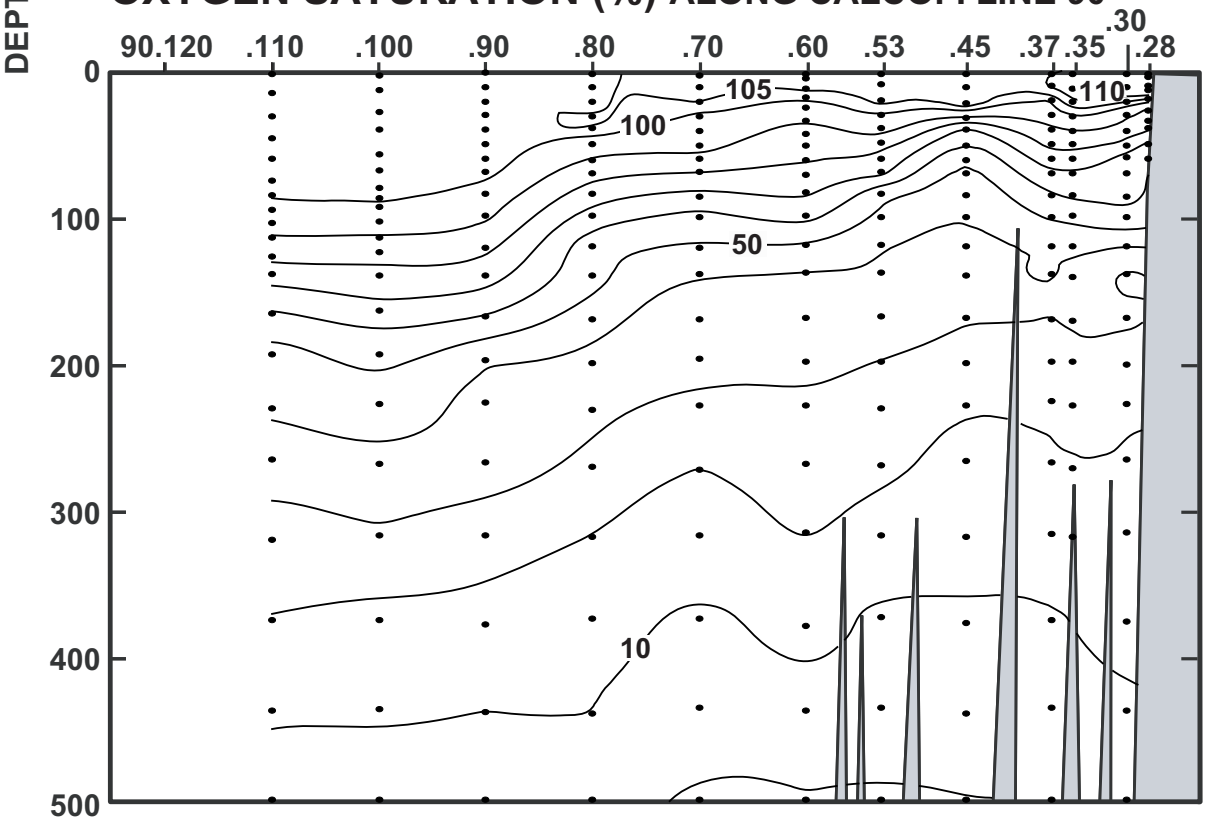


FIGURE 5H

CALCOFI CRUISE 0307

20-22 July 2003

OXYGEN (ml/L) ALONG CALCOFI LINE 90

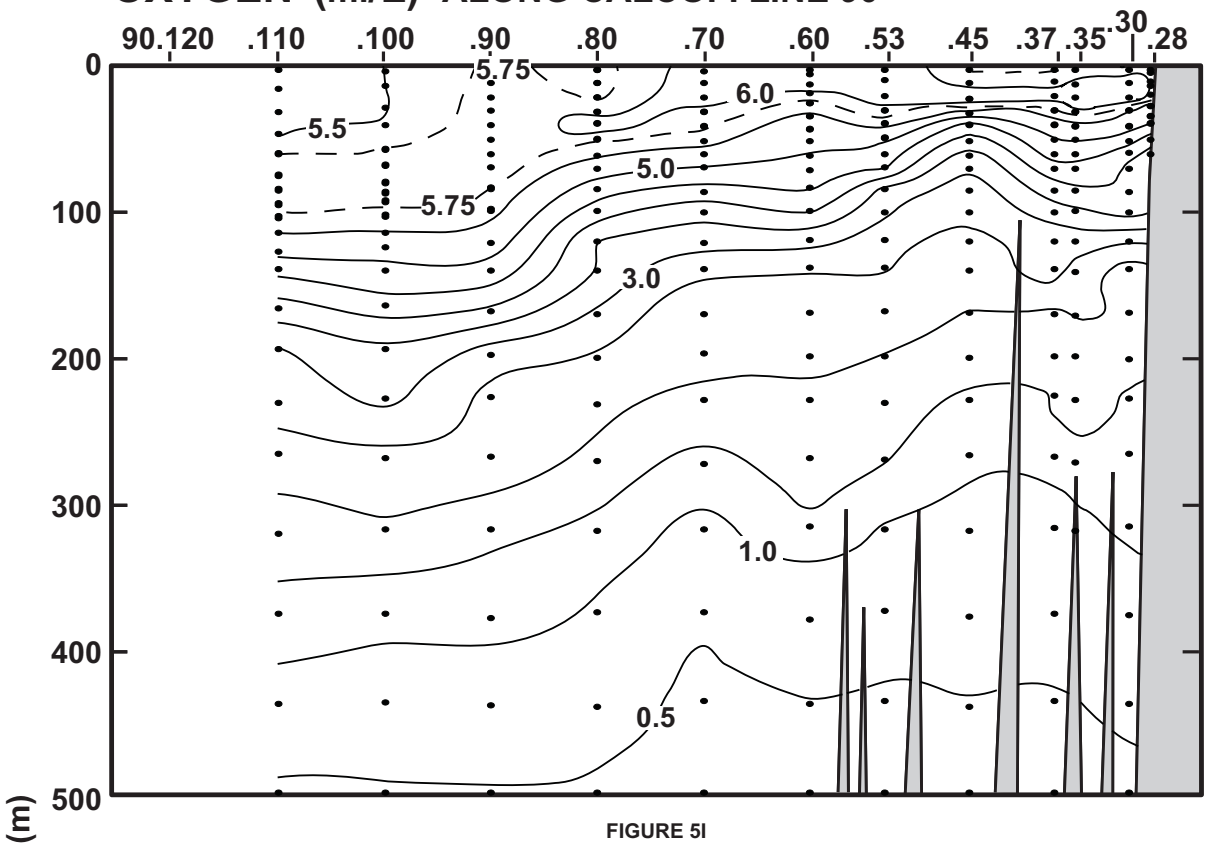


FIGURE 5I

NITRITE (μM/L) ALONG CALCOFI LINE 90

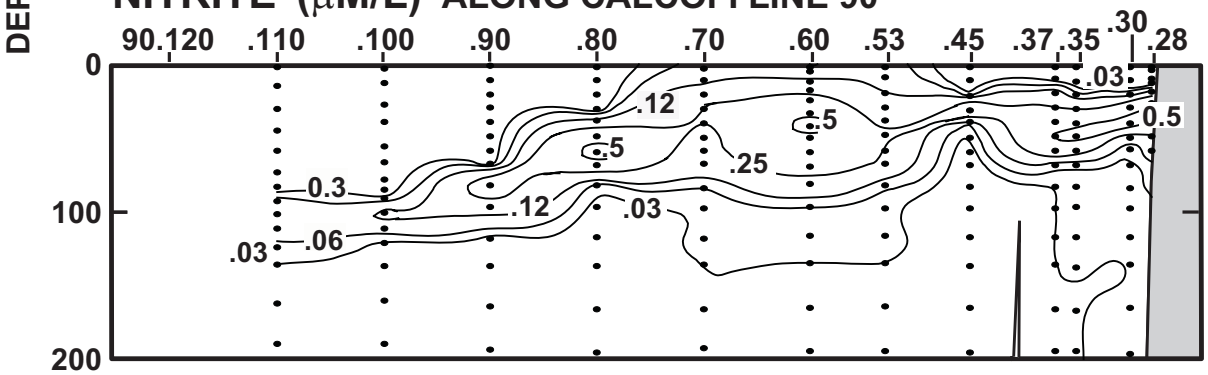


FIGURE 5J

PHAEOPIGMENTS (μg/L) ALONG CALCOFI LINE 90

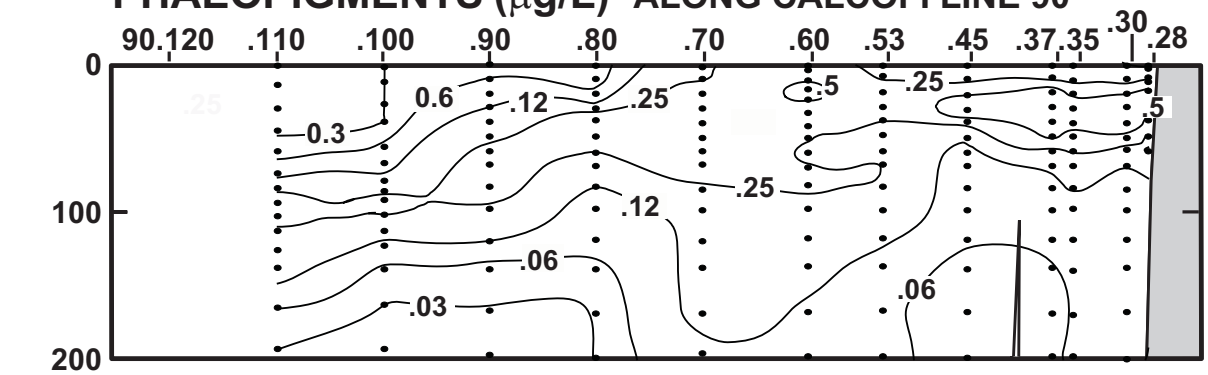


FIGURE 5K

PERSONNEL

CalCOFI Cruise 0307

SHIP'S CAPTAIN

Murray A. Stein, RV *New Horizon*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

Wilkinson, James R. (Chief Scientist)	Programmer Analyst, SIO
Elliot, Rebeca A.	Volunteer
Faber, David N.	Graduate Student, Cal. State Univ. San Marcos
Hays, Amy E.	Fishery Biologist, NMFS
Hernandez, Juan S.	Volunteer
King, Andrew L.	Graduate Student, SIO
Manion, Susan M.	Fishery Biologist, NMFS
Nunnery, Joshawna K.	Volunteer
Powell, Jesse R.	Staff Research Associate, SIO
Ramirez, Fernando	Staff Research Associate, SIO
Schuller, Daniel	Staff Research Associate, SIO
Sheldon, Jennifer L	Scientific Aid, California Dept. of Fish and Game
Venrick, Elizabeth L.	Research Oceanographer
Wolgast, David M.	Staff Research Associate, SIO
Yakich, Jason	Bird Observer, Point Reyes Bird Observatory

San Diego-San Diego, 17-31 July, 2003

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
35 5.4 N	120 46.7 W	30/07/03	0051	UTC	71 m	290	12 kn	290 02 05	1	1013.4 mb	16.6 C	16.0 C	06m	4/8	CC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	15.64	15.64	33.567	24.727	320.7	0.000	6.91	122.0	1.5	0.30	0.2	0.03	5.57	1.28	0	
1	15.64	15.64	33.567	24.727	320.8	0.003	6.91	122.0	1.5	0.30	0.2	0.03	5.57	1.28	1	209
5	15.52	15.52	33.570	24.756	318.1	0.016	6.94	122.2	1.5	0.30	0.2	0.03	6.21	1.11	5	208
10	14.66	14.66	33.541	24.922	302.5	0.032	6.05	104.7	4.2	0.56	2.6	0.09	4.10	0.99	10	206
20	12.71	12.71	33.561	25.336	263.3	0.060	4.78	79.5	10.0	1.14	8.4	0.29	2.19	1.43	20	205
30	12.93	12.93	33.558	25.291	267.9	0.086	4.88	81.5	9.6	1.11	7.9	0.27	2.49	1.28	30	204
40	12.62	12.61	33.569	25.361	261.5	0.113	4.73	78.5	10.3	1.20	8.7	0.29	1.68	1.54	40	203
50 ISL	12.09	12.08	33.622	25.504	248.1	0.138	4.24	69.6	13.5	1.45	11.7	0.32	0.88	1.43	50	
51	12.01	12.00	33.629	25.524	246.2	0.141	4.17	68.3	14.1	1.48	12.2	0.32	0.81	1.41	51	202
60	10.84	10.83	33.715	25.805	219.6	0.162	3.18	50.8	23.9	1.84	19.8	0.38	0.41	1.28	60	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
35 1.6 N	120 55.0 W	29/07/03	2142	UTC	235 m	310	10 kn	310 03 06	1	1014.2 mb	18.1 C	16.4 C	09m	7/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.68	16.68	33.488	24.430	349.1	0.000	6.40	115.3	1.4	0.22	0.1	0.00	1.21	0.35	0	
2	16.68	16.68	33.488	24.430	349.1	0.007	6.40	115.3	1.4	0.22	0.1	0.00	1.21	0.35	2	216
10	16.20	16.20	33.487	24.540	338.9	0.035	6.46	115.2	1.4	0.24	0.0	0.00	2.84	0.67	10	214
20	15.50	15.50	33.464	24.680	325.9	0.068	6.52	114.7	1.3	0.36	0.4	0.02	3.40	0.88	20	213
30	13.24	13.24	33.544	25.219	274.8	0.098	5.13	86.2	8.1	1.00	7.7	0.22	1.28	0.70	30	212
40	11.35	11.35	33.654	25.666	232.4	0.123	3.78	61.1	17.7	1.59	17.0	0.36	0.30	0.49	40	211
50	10.38	10.37	33.765	25.924	208.0	0.145	2.92	46.2	24.0	1.89	22.4	0.32	0.10	0.30	50	210
60	10.24	10.23	33.794	25.971	203.8	0.166	2.79	44.0	25.4	1.94	23.2	0.31	0.09	0.31	60	209
69	10.21	10.20	33.806	25.986	202.6	0.184	2.74	43.2	25.7	1.96	23.4	0.31	0.09	0.34	69	208
75 ISL	10.18	10.17	33.816	25.999	201.5	0.196	2.70	42.6	25.9	1.98	23.6	0.31	0.09	0.33	75	
84	10.12	10.11	33.830	26.020	199.7	0.214	2.64	41.6	26.3	2.00	23.9	0.31	0.09	0.30	84	207
100	10.06	10.05	33.840	26.038	198.3	0.246	2.58	40.6	27.2	2.04	24.4	0.29	0.08	0.29	101	206
120	9.96	9.95	33.875	26.083	194.5	0.285	2.40	37.7	29.3	2.07	25.1	0.27	0.08	0.42	121	205
125 ISL	9.94	9.93	33.884	26.093	193.6	0.295	2.38	37.3	29.3	2.08	25.2	0.25	0.07	0.39	126	
136	9.89	9.87	33.903	26.117	191.6	0.316	2.33	36.5	29.4	2.10	25.5	0.20	0.06	0.31	137	204
150 ISL	9.82	9.80	33.926	26.147	189.0	0.343	2.26	35.4	29.9	2.12	25.9	0.19	0.05	0.26	151	
168	9.72	9.70	33.959	26.190	185.3	0.377	2.15	33.6	31.1	2.16	26.5	0.17	0.04	0.24	169	203
200	9.48	9.46	34.037	26.291	176.3	0.434	1.88	29.2	34.7	2.28	27.8	0.17	0.03	0.24	201	202
225	9.14	9.12	34.131	26.420	164.5	0.477	1.51	23.3	39.8	2.45	29.7	0.16			226	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 54.2 N	121 12.1 W	29/07/03	1841	UTC	574 m	310	09 kn	270 01 06	4	1015.1 mb	11.1 C	11.0 C	10m		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	15.38	15.38	33.176	24.484	343.9	0.000	6.52	114.2	1.4	0.54	3.3	0.15	0.52	0.28	0	
2 A	15.38	15.38	33.176	24.484	344.0	0.007	6.52	114.2	1.4	0.54	3.3	0.15	0.52	0.28	2	223
7 A	15.29	15.29	33.188	24.513	341.3	0.024	6.57	114.9	1.2	0.53	3.4	0.15	0.71	0.35	7	221
10 ISL	13.42	13.42	33.292	24.987	296.3	0.034	6.76	113.9	2.0	0.71	4.5	0.22	1.34	0.47	10	
12 A	12.06	12.06	33.389	25.328	263.9	0.039	6.83	111.9	3.1	0.86	5.7	0.27	1.76	0.55	12	220
20 A	10.93	10.93	33.410	25.551	242.8	0.059	5.56	88.9	12.7	1.35	15.0	0.34	1.72	0.70	20	219
26 A	10.82	10.82	33.407	25.568	241.3	0.074	5.42	86.4	13.8	1.39	15.5	0.36	1.58	0.68	26	218
30 ISL	10.76	10.76	33.453	25.615	237.0	0.084	5.30	84.4	15.2	1.45	16.1	0.35	1.25	0.58	30	
38 A	10.55	10.55	33.524	25.707	228.4	0.102	4.98	79.0	18.2	1.58	17.7	0.34	0.57	0.43	38	217
45	10.16	10.15	33.456	25.721	227.2	0.118	4.62	72.7	19.9	1.63	19.4	0.28	0.35	0.54	45	216
49	9.78	9.77	33.412	25.750	224.5	0.127	4.39	68.4	20.5	1.65	20.2	0.19	0.25	0.34	49	215
50 ISL	9.70	9.69	33.405	25.758	223.7	0.129	4.34	67.5	20.6	1.65	20.3	0.18	0.23	0.32	50	
60	9.30	9.29	33.423	25.837	216.4	0.151	4.03	62.2	21.4	1.68	21.1	0.08	0.09	0.17	60	214
70	9.63	9.62	33.619	25.937	207.1	0.173	4.18	65.0	23.7	1.75	22.0	0.26	0.14	0.24	70	213
75 ISL	9.59	9.58	33.669	25.983	202.9	0.183	4.09	63.6	24.7	1.77	22.6	0.26	0.13	0.23	75	
85	9.31	9.30	33.730	26.076	194.2	0.203	3.89	60.1	26.0	1.81	23.2	0.27	0.12	0.22	85	212
98	8.89	8.88	33.819	26.213	181.4	0.227	3.97	60.8	25.3	1.65	21.8	0.16	0.06	0.22	99	211
100 ISL	8.86	8.85	33.830	26.226	180.2	0.231	3.97	60.8	25.3	1.65	21.8	0.15	0.06	0.21	101	
119	8.66	8.65	33.914	26.323	171.3	0.264	3.97	60.5	26.9	1.63	21.9	0.10	0.04	0.15	120	210
125 ISL	8.57	8.56	33.936	26.354	168.4	0.274	3.96	60.3	27.7	1.63	22.1	0.09	0.04	0.15	126	
140	8.37	8.36	33.978	26.418	162.6	0.299	3.94	59.7	30.0	1.66	22.8	0.08	0.04	0.16	141	209
150 ISL	8.29	8.27	33.987	26.438	161.0	0.315	3.91	59.2	30.9	1.68	23.1	0.08	0.04	0.14	151	
168	8.15	8.13	33.991	26.462	158.9	0.344	3.75	56.6	32.9	1.75	24.2	0.08	0.03	0.11	169	208
197	7.69	7.67	34.009	26.544	151.5	0.389	2.99	44.6	40.2	2.04	28.3	0.08	0.02	0.10	198	207
200 ISL	7.65	7.63	34.010	26.551	150.9	0.394	2.92	43.5	40.9	2.07	28.7	0.08			201	
228	7.28	7.26	34.014	26.607	145.9	0.435	2.41	35.6	46.8	2.29	31.6	0.08			229	206
250 ISL	7.08	7.06	34.008	26.630	143.9	0.467	2.40	35.3	48.6	2.32	32.1	0.08			252	
269	6.95	6.92	34.008	26.648	142.5	0.494	2.40	35.2	49.9	2.33	32.3	0.08			271	205
300 ISL	6.76	6.73	34.051	26.708	137.2	0.538	1.87	27.3	55.0	2.53	34.4	0.08			302	
317	6.69	6.66	34.082	26.742	134.2	0.561	1.52	22.2	58.0	2.66	35.6	0.08			319	204
377	6.60	6.57	34.178	26.830	126.7	0.639	0.81	11.8	65.4	2.91	37.6	0.08			380	203
400 ISL	6.55	6.51	34.206	26.859	124.3	0.668	0.68	9.9	68.3	2.97	37.9	0.09			403	
440	6.39	6.35	34.238	26.906	120.3	0.717	0.54	7.8	73.5	3.05	38.4	0.11			443	202
500 ISL	5.74	5.70	34.234	26.985	112.9	0.787	0.43	6.1	82.0	3.15	40.7	0.09			504	
517	5.56	5.52	34.234	27.007	110.9	0.806	0.40	5.7	84.4	3.18	41.4	0.08			521	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 43.4 N	121 33.0 W	29/07/03	1328 UTC	930 m	320 07 kn	320 01 05	2	1014.0 mb	16.0 C	15.1 C		8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	15.75	15.75	33.116	24.356	356.1	0.000	6.36	112.2	1.6	0.47	1.4	0.09	0.54	0.29	0	
2	15.75	15.75	33.116	24.356	356.2	0.007	6.36	112.2	1.6	0.47	1.4	0.09	0.54	0.29	2	220
10 ISL	14.20	14.20	33.145	24.713	322.4	0.034	6.36	108.8	2.4	0.62	3.2	0.20	0.86	0.47	10	
11	13.92	13.92	33.146	24.772	316.8	0.037	6.36	108.1	2.5	0.65	3.6	0.22	0.89	0.49	11	219
20 ISL	11.76	11.76	32.966	25.055	290.0	0.065	5.62	91.2	6.8	0.97	8.3	0.16	0.42	0.31	20	
21	11.55	11.55	32.946	25.078	287.8	0.068	5.53	89.3	7.4	1.01	8.9	0.15	0.35	0.28	21	218
30 ISL	10.68	10.68	32.920	25.213	275.1	0.093	5.24	83.1	11.1	1.20	12.2	0.06	0.19	0.17	30	
31	10.63	10.63	32.923	25.224	274.1	0.096	5.22	82.7	11.5	1.22	12.5	0.05	0.18	0.16	31	217
41	10.04	10.04	33.021	25.401	257.5	0.122	4.94	77.3	15.1	1.39	15.4	0.05	0.10	0.11	41	216
50 ISL	9.74	9.73	33.145	25.548	243.7	0.145	4.69	72.9	18.1	1.53	17.8	0.05	0.05	0.09	50	
51	9.72	9.71	33.162	25.565	242.1	0.147	4.66	72.4	18.4	1.54	18.0	0.05	0.05	0.09	51	215
61	9.85	9.84	33.383	25.716	228.0	0.171	4.46	69.6	20.1	1.62	19.6	0.13	0.08	0.13	61	214
72	10.06	10.05	33.571	25.828	217.6	0.195	4.59	72.1	22.5	1.71	20.8	0.32	0.16	0.23	72	213
75 ISL	9.96	9.95	33.579	25.851	215.5	0.202	4.48	70.2	22.3	1.70	20.8	0.29	0.16	0.22	75	
84	9.56	9.55	33.596	25.931	208.0	0.221	3.97	61.7	21.8	1.68	20.7	0.15	0.12	0.19	84	212
99	9.38	9.37	33.833	26.146	187.9	0.251	3.00	46.5	27.4	1.91	24.4	0.08	0.08	0.25	100	211
100 ISL	9.39	9.38	33.846	26.154	187.1	0.252	2.94	45.6	27.7	1.92	24.6	0.08	0.08	0.25	101	
119	9.64	9.63	34.025	26.253	178.2	0.287	2.09	32.6	31.3	2.15	26.6	0.07	0.06	0.19	120	210
125 ISL	9.60	9.59	34.056	26.284	175.4	0.298	1.99	31.0	32.2	2.19	27.0	0.07	0.06	0.22	126	
139	9.44	9.42	34.104	26.348	169.6	0.322	1.89	29.4	34.0	2.25	27.8	0.06	0.05	0.28	140	209
150 ISL	9.34	9.32	34.132	26.387	166.1	0.340	1.78	27.6	35.4	2.30	28.4	0.06	0.04	0.25	151	
169	9.21	9.19	34.163	26.432	162.2	0.372	1.61	24.9	37.5	2.36	29.1	0.06	0.02	0.17	170	208
200	9.09	9.07	34.185	26.469	159.3	0.421	1.50	23.1	38.9	2.41	29.6	0.06	0.02	0.15	201	207
231	8.73	8.71	34.209	26.546	152.5	0.470	1.19	18.2	43.4	2.55	31.3	0.06			232	206
250 ISL	8.57	8.54	34.222	26.581	149.5	0.498	1.19	18.1	45.6	2.61	31.9	0.06			252	
270	8.43	8.40	34.233	26.611	146.9	0.528	1.18	17.9	47.5	2.65	32.4	0.06			272	205
300 ISL	8.23	8.20	34.249	26.655	143.2	0.572	1.01	15.3	49.5	2.70	33.0	0.06			302	
318	8.10	8.07	34.255	26.679	141.2	0.597	0.90	13.6	50.7	2.73	33.3	0.06			320	204
378	7.45	7.41	34.255	26.774	132.7	0.679	0.73	10.8	58.5	2.86	35.4	0.06			381	203
400 ISL	7.25	7.21	34.255	26.803	130.2	0.708	0.68	10.1	61.0	2.91	36.1	0.06			403	
435	6.98	6.94	34.257	26.842	126.8	0.753	0.60	8.8	64.7	2.97	37.0	0.06			438	202
500 ISL	6.59	6.54	34.271	26.906	121.4	0.834	0.49	7.1	70.7	3.05	38.3	0.06			504	
520	6.47	6.42	34.276	26.926	119.7	0.858	0.45	6.5	72.6	3.07	38.7	0.06			524	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 23.4 N	122 14.9 W	29/07/03	0745 UTC	4024 m	310 09 kn			1015.4 mb	17.1 C	16.1 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.15	17.15	33.014	23.956	394.2	0.000	5.74	104.0	1.4	0.37	0.1	0.00	0.25	0.06	0	
3	17.15	17.15	33.014	23.956	394.3	0.012	5.74	104.0	1.4	0.37	0.1	0.00	0.25	0.06	3	220
10 ISL	17.15	17.15	33.017	23.959	394.3	0.039	5.74	104.0	1.3	0.36	0.1	0.00	0.26	0.07	10	
11	17.15	17.15	33.017	23.959	394.3	0.043	5.74	104.0	1.3	0.36	0.1	0.00	0.26	0.07	11	219
20	16.13	16.13	33.035	24.209	370.8	0.078	6.01	106.8	1.7	0.43	0.2	0.01	0.56	0.20	20	218
30	13.49	13.49	33.137	24.854	309.5	0.112	6.14	103.5	2.5	0.68	4.0	0.24	1.53	0.57	30	217
40	11.58	11.58	33.081	25.178	278.8	0.141	5.47	88.5	7.6	1.06	9.9	0.62	1.00	0.42	40	216
50	11.70	11.69	33.408	25.410	256.9	0.168	5.10	82.9	11.7	1.32	14.3	0.61	0.58	0.31	50	215
59	10.78	10.77	33.374	25.550	243.8	0.191	4.66	74.2	14.4	1.44	16.9	0.06	0.25	0.17	59	214
70	9.82	9.81	33.363	25.706	229.1	0.217	4.35	67.9	17.7	1.57	19.1	0.04	0.11	0.09	70	213
75 ISL	9.55	9.54	33.428	25.801	220.1	0.228	4.21	65.3	19.3	1.62	20.0	0.04	0.08	0.09	75	
85	9.25	9.24	33.597	25.982	203.2	0.249	3.85	59.4	22.5	1.72	21.9	0.04	0.04	0.10	85	212
99	9.18	9.17	33.780	26.136	188.7	0.276	3.03	46.7	26.7	1.94	25.3	0.04	0.02	0.10	99	211
100 ISL	9.17	9.16	33.789	26.145	188.0	0.278	3.00	46.2	26.9	1.95	25.4	0.04	0.02	0.10	100	
119	8.91	8.90	33.906	26.278	175.6	0.313	2.73	41.9	30.1	2.04	27.5	0.04	0.02	0.09	120	210
125 ISL	8.85	8.84	33.936	26.311	172.6	0.323	2.60	39.8	31.3	2.08	28.2	0.04	0.02	0.09	126	
139	8.72	8.71	33.993	26.376	166.7	0.347	2.31	35.3	34.1	2.18	29.6	0.04	0.01	0.08	140	209
150 ISL	8.61	8.59	34.021	26.415	163.2	0.365	2.22	33.8	35.7	2.22	30.2	0.04	0.01	0.08	151	
169	8.44	8.42	34.052	26.466	158.7	0.396	2.13	32.3	37.9	2.26	30.8	0.05	0.02	0.09	170	208
199	8.28	8.26	34.088	26.519	154.2	0.443	1.90	28.8	41.0	2.37	31.3	0.05	0.03	0.08	200	207
200 ISL	8.28	8.26	34.090	26.521	154.0	0.444	1.89	28.6	41.1	2.38	31.3	0.05			201	
228	8.14	8.12	34.144	26.584	148.5	0.487	1.55	23.4	44.8	2.51	32.2	0.04			229	206
250 ISL	7.93	7.90	34.151	26.621	145.2	0.519	1.46	21.9	47.2	2.56	32.9	0.04			252	
268	7.72	7.69	34.149	26.651	142.7	0.545	1.42	21.2	49.3	2.60	33.5	0.05			270	205
300 ISL	7.38	7.35	34.171	26.717	136.7	0.589	1.18	17.5	54.2	2.71	34.8	0.05			302	
318	7.18	7.15	34.183	26.755	133.3	0.614	1.04	15.4	57.1	2.78	35.6	0.05			320	204
378	6.53	6.50	34.172	26.835	126.2	0.692	0.83	12.1	65.7	2.93	38.0	0.04			380	203
400 ISL	6.33	6.29	34.183	26.870	123.1	0.719	0.73	10.6	68.8	2.99	38.7	0.04			403	
438	6.02	5.98	34.206	26.928	117.8	0.765	0.56	8.0	74.2	3.09	39.8	0.04			441	202
500 ISL	5.51	5.47	34.211	26.995	111.7	0.836	0.45	6.4	83.9	3.18	41.6	0.04			504	
519	5.35	5.31	34.213	27.016	109.8	0.857	0.42	5.9	86.9	3.21	42.1	0.04			523	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 3.6 N	122 56.7 W	29/07/03	0159 UTC	4237 m	330 13 kn	330 03 08	2	1015.5 mb	17.0 C	16.2 C	12m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.33	17.33	32.977	23.885	401.0	0.000	5.73	104.2	1.4	0.37	0.3	0.00	0.23	0.05	0	
2	17.33	17.33	32.977	23.885	401.1	0.008	5.73	104.2	1.4	0.37	0.3	0.00	0.23	0.05	2	221
10	17.31	17.31	32.976	23.890	400.9	0.040	5.68	103.2	1.5	0.37	0.3	0.00	0.23	0.05	10	219
20	16.23	16.23	33.040	24.190	372.6	0.079	5.98	106.5	1.7	0.41	0.5	0.02	0.72	0.25	20	218
30 ISL	14.47	14.47	33.140	24.653	328.7	0.114	5.93	102.0	3.6	0.64	3.6	0.20	0.90	0.40	30	
31	14.24	14.24	33.152	24.711	323.2	0.117	5.92	101.3	3.8	0.68	4.2	0.23	0.91	0.41	31	217
40	11.64	11.63	33.284	25.325	264.8	0.144	5.25	85.2	11.2	1.32	12.3	0.75	1.07	0.52	40	216
50	11.29	11.28	33.454	25.521	246.4	0.169	4.71	75.9	12.7	1.46	16.2	0.51	0.34	0.17	50	215
60	10.17	10.16	33.434	25.702	229.3	0.193	4.35	68.4	18.1	1.58	19.2	0.04	0.28	0.21	60	214
71	9.57	9.56	33.590	25.924	208.4	0.217	3.76	58.4	22.7	1.79	22.5	0.02	0.10	0.13	71	213
75 ISL	9.45	9.44	33.624	25.970	204.1	0.225	3.67	56.9	23.4	1.80	22.9	0.02	0.07	0.11	75	
85	9.29	9.28	33.688	26.046	197.0	0.245	3.50	54.1	24.6	1.83	23.5	0.02	0.03	0.09	85	212
100 ISL	9.17	9.16	33.793	26.148	187.7	0.274	3.00	46.2	27.4	1.96	25.4	0.02	0.02	0.10	100	
101	9.17	9.16	33.799	26.153	187.2	0.276	2.97	45.8	27.6	1.97	25.5	0.02	0.02	0.10	102	211
120	9.01	9.00	33.885	26.246	178.7	0.311	2.73	42.0	29.8	2.02	26.5	0.01	0.01	0.09	121	210
125 ISL	8.96	8.95	33.906	26.270	176.5	0.320	2.75	42.2	30.1	2.02	26.5	0.01	0.01	0.09	126	
140	8.81	8.80	33.963	26.339	170.3	0.346	2.81	43.0	31.2	2.01	26.5	0.01	0.01	0.07	141	209
150 ISL	8.71	8.69	33.993	26.378	166.7	0.363	2.69	41.1	32.7	2.05	27.2	0.01	0.01	0.06	151	
168	8.52	8.50	34.035	26.440	161.1	0.392	2.37	36.1	36.1	2.17	28.9	0.01	0.01	0.05	169	208
199	8.19	8.17	34.079	26.526	153.5	0.441	1.82	27.5	41.7	2.40	31.6	0.01	0.01	0.06	200	207
200 ISL	8.18	8.16	34.080	26.528	153.3	0.442	1.81	27.3	41.8	2.40	31.6	0.01			201	
228	7.89	7.87	34.098	26.585	148.2	0.485	1.66	24.9	45.5	2.50	32.6	0.01			229	206
250 ISL	7.67	7.65	34.108	26.625	144.7	0.517	1.53	22.8	48.2	2.57	33.4	0.01			252	
268	7.49	7.46	34.116	26.658	141.9	0.543	1.42	21.1	50.5	2.62	34.1	0.01			270	205
300 ISL	7.18	7.15	34.131	26.714	136.9	0.587	1.22	18.0	54.9	2.72	35.3	0.01			302	
319	7.01	6.98	34.141	26.745	134.1	0.613	1.10	16.2	57.7	2.78	36.0	0.01			321	204
379	6.49	6.46	34.180	26.846	125.1	0.691	0.76	11.0	67.1	2.96	38.1	0.01			381	203
400 ISL	6.36	6.32	34.191	26.872	122.9	0.717	0.68	9.8	69.5	3.01	38.6	0.01			403	
435	6.16	6.12	34.208	26.911	119.4	0.759	0.57	8.2	73.4	3.07	39.3	0.01			438	202
500 ISL	5.72	5.68	34.249	27.000	111.6	0.834	0.39	5.6	82.5	3.18	40.8	0.01			504	
518	5.60	5.56	34.261	27.024	109.4	0.854	0.34	4.8	85.0	3.21	41.2	0.01			522	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 42.7 N	123 38.1 W	28/07/03	2015 UTC	516 m	320 08 kn	310 02 06	2	1018.5 mb	19.2 C	17.1 C	23m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.43	17.43	32.645	23.607	427.5	0.000	5.66	102.9	1.6	0.36	0.0	0.00	0.15	0.04	0	
2 A	17.43	17.43	32.645	23.607	427.6	0.009	5.66	102.9	1.6	0.36	0.0	0.00	0.15	0.04	2	222
10 ISL	17.25	17.25	32.641	23.647	424.0	0.043	5.67	102.7	1.6	0.36	0.0	0.00	0.15	0.04	10	
13 A	17.18	17.18	32.639	23.662	422.7	0.055	5.67	102.6	1.6	0.36	0.0	0.00	0.15	0.04	13	220
20 ISL	16.03	16.03	32.658	23.942	396.2	0.084	5.89	104.2	1.8	0.37	0.0	0.00	0.15	0.04	20	
30 A	14.34	14.34	32.687	24.331	359.3	0.122	6.18	105.7	2.2	0.38	0.0	0.00	0.16	0.05	30	219
44 A	14.47	14.46	32.983	24.533	340.5	0.171	6.03	103.6	2.4	0.35	0.0	0.00	0.22	0.10	44	218
50 ISL	14.34	14.33	33.052	24.613	333.0	0.191	5.98	102.5	2.5	0.34	0.0	0.00	0.25	0.16	50	
53	14.28	14.27	33.087	24.653	329.3	0.201	5.96	102.0	2.5	0.34	0.0	0.00	0.27	0.19	53	217
62 A	13.23	13.22	32.982	24.787	316.7	0.230	5.87	98.3	3.2	0.45	0.9	0.08	0.35	0.30	62	216
67	12.65	12.64	32.996	24.911	304.9	0.245	5.70	94.3	4.0	0.58	2.7	0.21	0.31	0.31	67	215
75 ISL	11.55	11.54	32.918	25.058	291.1	0.269	5.63	90.9	5.5	0.74	5.4	0.14	0.21	0.28	75	
78	11.21	11.20	32.898	25.104	286.7	0.278	5.62	90.1	6.0	0.79	6.3	0.12	0.17	0.26	78	214
86 A	10.92	10.91	33.004	25.238	274.1	0.300	5.45	86.9	7.1	0.87	7.8	0.05	0.14	0.19	86	213
97	9.81	9.80	33.031	25.448	254.1	0.329	5.28	82.2	10.6	1.11	11.7	0.03	0.09	0.09	97	212
100 ISL	9.68	9.67	33.072	25.502	249.1	0.337	5.07	78.7	12.5	1.23	13.5	0.03	0.07	0.08	100	
109	9.49	9.48	33.217	25.646	235.5	0.359	4.48	69.3	17.4	1.53	18.3	0.03	0.03	0.06	109	211
124	9.17	9.16	33.406	25.846	216.8	0.393	4.68	72.0	16.8	1.39	17.2	0.04	0.02	0.04	125	210
125 ISL	9.16	9.15	33.423	25.860	215.4	0.395	4.66	71.6	17.0	1.40	17.3	0.04	0.02	0.04	126	
141	9.04	9.02	33.694	26.092	193.8	0.428	4.04	62.1	22.4	1.61	20.8	0.04	0.01	0.05	142	209
150 ISL	9.08	9.06	33.815	26.180	185.6	0.445	3.39	52.2	25.8	1.80	23.3	0.04	0.02	0.08	151	
168	9.18	9.16	33.992	26.303	174.3	0.477	2.15	33.2	32.0	2.17	27.9	0.05	0.03	0.15	169	208
199	8.91	8.89	34.088	26.422	163.6	0.529	1.69	25.9	37.6	2.36	30.1	0.04	0.02	0.14	200	207
200 ISL	8.89	8.87	34.088	26.425	163.3	0.531	1.70	26.1	37.7	2.36	30.1	0.04			201	
228	8.24	8.22	34.072	26.513	155.3	0.576	2.05	31.0	39.8	2.31	30.7	0.05			229	206
250 ISL	7.85	7.83	34.065	26.566	150.5	0.609	1.98	29.7	43.1	2.37	31.8	0.06			251	
268	7.60	7.57	34.065	26.602	147.2	0.636	1.92	28.6	46.0	2.44	32.8	0.07			270	205
300 ISL	7.33	7.30	34.085	26.656	142.4	0.682	1.68	24.9	50.0	2.54	34.0	0.06			302	
320	7.21	7.18	34.101	26.686	139.9	0.711	1.50	22.1	52.4	2.61	34.7	0.05			322	204
379	6.73	6.70	34.140	26.783	131.3	0.791	1.07	15.6	60.9	2.82	36.8	0.05			381	203
400 ISL	6.50	6.46	34.149	26.821	127.8	0.818	0.95	13.8	64.7	2.89	38.0	0.05			403	
438	6.11	6.07	34.168	26.886	121.8	0.865	0.76	10.9	71.7	3.00	40.1	0.05			441	202
500 ISL	5.77	5.73	34.224	26.974	114.1	0.938	0.50	7.1	80.2	3.12	41.4	0.04			503	
519	5.67	5.63	34.241	27.000	111.8	0.960	0.42	6.0	82.8	3.16	41.8	0.04			523	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 23.4 N	124 19.6 W	28/07/03	1426 UTC	4485 m	340 11 kn	030 02 05	2	1017.5 mb	17.9 C	16.1 C		8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	18.11	18.11	32.939	23.669	421.7	0.000	5.51	101.7	1.7	0.35	0.0	0.00	0.11	0.02	0	
2	18.11	18.11	32.939	23.669	421.7	0.008	5.51	101.7	1.7	0.35	0.0	0.00	0.11	0.02	2	220
10 ISL	18.12	18.12	32.940	23.667	422.1	0.042	5.50	101.5	1.6	0.34	0.0	0.00	0.11	0.03	10	
16	18.12	18.12	32.940	23.667	422.3	0.068	5.50	101.5	1.6	0.34	0.0	0.00	0.11	0.03	16	219
20 ISL	18.11	18.11	32.944	23.673	421.9	0.084	5.50	101.5	1.6	0.34	0.0	0.00	0.11	0.03	20	
30	18.09	18.08	32.957	23.688	420.8	0.127	5.51	101.6	1.6	0.34	0.0	0.00	0.11	0.02	30	218
46	18.09	18.08	32.984	23.710	419.3	0.194	5.59	103.1	1.6	0.34	0.0	0.00	0.12	0.03	46	217
50 ISL	18.03	18.02	32.985	23.725	418.0	0.211	5.65	104.1	1.6	0.34	0.0	0.00	0.15	0.03	50	
61	17.64	17.63	32.975	23.812	410.0	0.256	5.81	106.3	1.6	0.34	0.0	0.00	0.22	0.05	61	216
75 ISL	16.52	16.51	32.947	24.054	387.3	0.312	5.83	104.3	1.5	0.35	0.0	0.00	0.25	0.09	75	
76	16.44	16.43	32.946	24.072	385.6	0.316	5.83	104.1	1.5	0.35	0.0	0.00	0.25	0.09	76	215
85	16.18	16.17	32.960	24.142	379.2	0.350	5.79	102.9	1.5	0.35	0.0	0.00	0.28	0.10	85	214
96	15.96	15.94	32.971	24.201	373.9	0.392	5.80	102.6	1.5	0.35	0.0	0.00	0.29	0.13	96	213
100 ISL	15.76	15.74	32.968	24.243	370.0	0.406	5.80	102.2	1.6	0.35	0.0	0.00	0.28	0.16	100	
105	15.44	15.42	32.962	24.310	363.7	0.425	5.80	101.6	1.8	0.36	0.0	0.00	0.27	0.20	105	212
115	14.71	14.69	32.959	24.465	349.0	0.460	5.68	98.0	2.1	0.41	0.0	0.00	0.26	0.25	115	211
125 ISL	12.90	12.88	32.913	24.800	317.1	0.494	5.58	92.7	3.4	0.57	1.9	0.15	0.17	0.23	125	
126	12.71	12.69	32.910	24.835	313.8	0.497	5.57	92.2	3.6	0.59	2.1	0.16	0.16	0.23	126	210
141	11.31	11.29	32.901	25.090	289.5	0.542	5.31	85.3	5.4	0.77	5.8	0.03	0.11	0.14	142	209
150 ISL	10.82	10.80	32.946	25.212	278.0	0.568	5.10	81.1	6.4	0.85	7.4	0.03	0.09	0.11	151	
164	10.28	10.26	33.059	25.393	260.9	0.605	4.69	73.7	8.5	0.98	9.9	0.02	0.06	0.09	165	208
193	9.17	9.15	33.405	25.846	218.1	0.675	3.47	53.3	16.2	1.36	16.7	0.02	0.01	0.02	194	207
200 ISL	9.05	9.03	33.491	25.932	210.0	0.690	3.37	51.7	18.3	1.46	18.3	0.02			201	
230	8.77	8.75	33.806	26.223	183.0	0.749	3.15	48.1	26.6	1.80	23.9	0.02			231	206
250 ISL	8.59	8.56	33.926	26.346	171.7	0.784	2.83	43.1	29.9	1.87	25.3	0.02			251	
270	8.39	8.36	33.995	26.431	163.9	0.818	2.48	37.6	32.7	1.91	26.2	0.02			271	205
300 ISL	7.95	7.92	34.030	26.524	155.3	0.866	2.06	30.9	38.4	2.09	28.7	0.02			302	
319	7.63	7.60	34.028	26.569	151.2	0.895	1.87	27.9	42.4	2.22	30.4	0.02			321	204
377	6.66	6.63	34.034	26.709	138.2	0.979	1.87	27.2	54.9	2.53	34.6	0.02			379	203
400 ISL	6.42	6.38	34.045	26.749	134.5	1.010	1.66	24.0	59.0	2.64	35.9	0.02			402	
435	6.13	6.09	34.069	26.806	129.4	1.056	1.28	18.4	64.7	2.79	37.6	0.02			438	202
500 ISL	5.70	5.66	34.128	26.906	120.3	1.137	0.80	11.4	75.5	2.99	39.9	0.02			503	
513	5.61	5.57	34.140	26.927	118.4	1.153	0.71	10.1	77.7	3.03	40.4	0.02			516	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 26.8 N	120 31.3 W	26/07/03	2357 UTC	78 m	300 09 kn	310 02 06	2	1017.0 mb	17.0 C	16.0 C	05m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.10	17.10	33.445	24.298	361.6	0.000	6.52	118.4	2.1	0.23	0.0	0.01	3.50	0.64	0	
1	17.10	17.10	33.445	24.298	361.6	0.004	6.52	118.4	2.1	0.23	0.0	0.01	3.50	0.64	1	210
5	16.88	16.88	33.444	24.350	356.9	0.018	6.40	115.7	2.6	0.27	0.1	0.02	3.71	0.72	5	209
10	15.70	15.70	33.455	24.628	330.5	0.035	5.92	104.5	4.5	0.50	1.9	0.10	2.88	0.62	10	207
20	13.69	13.69	33.436	25.044	291.2	0.066	4.98	84.4	9.0	0.81	3.5	0.20	1.34	0.49	20	206
30	12.68	12.68	33.436	25.246	272.2	0.094	4.74	78.7	10.1	1.02	6.5	0.35	0.75	0.49	30	205
40	11.58	11.57	33.467	25.478	250.3	0.121	4.05	65.7	13.6	1.40	13.8	0.51	0.37	0.41	40	204
50	11.35	11.34	33.493	25.541	244.5	0.145	3.73	60.2	15.4	1.52	16.2	0.52	0.28	0.33	50	203
60	11.23	11.22	33.504	25.571	241.9	0.170	3.63	58.4	16.2	1.57	17.2	0.52	0.23	0.28	60	202
71	11.20	11.19	33.508	25.580	241.3	0.196	3.58	57.6	16.7	1.58	17.5	0.52	0.23	0.33	71	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 19.0 N	120 48.6 W	27/07/03	0242 UTC	800 m	300 09 kn	280 02 08	1	1016.2 mb	15.9 C	15.1 C		4/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.27	17.27	33.468	24.276	363.7	0.000	6.66	121.3	1.6	0.23	0.0	0.00	1.45	0.30	0	
2	17.27	17.27	33.468	24.276	363.8	0.007	6.66	121.3	1.6	0.23	0.0	0.00	1.45	0.30	2	221
10	14.65	14.65	33.467	24.867	307.8	0.034	6.03	104.3	4.8	0.53	1.4	0.08	5.51	1.18	10	219
20	12.84	12.84	33.488	25.254	271.1	0.063	4.77	79.5	10.2	1.09	8.3	0.30	0.98	0.48	20	218
30	11.84	11.84	33.732	25.636	235.1	0.088	4.10	67.0	16.7	1.53	14.8	0.37	0.12	0.25	30	217
40	11.48	11.47	33.751	25.717	227.5	0.112	3.85	62.4	19.2	1.65	16.5	0.32	0.13	0.34	40	216
50 ISL	11.17	11.16	33.751	25.774	222.4	0.134	3.56	57.3	20.6	1.72	18.2	0.30	0.11	0.37	50	
51	11.14	11.13	33.752	25.780	221.8	0.136	3.53	56.8	20.7	1.73	18.4	0.30	0.11	0.37	51	215
61	10.89	10.88	33.800	25.862	214.2	0.158	3.33	53.3	22.6	1.84	19.6	0.30	0.10	0.45	61	214
70	10.65	10.64	33.826	25.925	208.4	0.177	3.09	49.2	23.4	1.89	21.1	0.30	0.10	0.50	70	213
75 ISL	10.43	10.42	33.837	25.972	204.0	0.187	2.87	45.5	24.3	1.93	22.4	0.20	0.08	0.37	75	
85	10.03	10.02	33.861	26.060	195.9	0.207	2.45	38.5	26.3	2.02	24.8	0.01	0.04	0.09	85	212
100	9.92	9.91	33.922	26.126	189.9	0.236	2.28	35.8	28.3	2.11	25.6	0.08	0.04	0.16	101	211
120	9.66	9.65	33.995	26.227	180.7	0.273	2.01	31.4	31.1	2.19	27.0	0.09	0.05	0.19	121	210
125 ISL	9.61	9.60	34.009	26.246	179.0	0.282	1.97	30.7	31.6	2.21	27.3	0.08	0.05	0.19	126	
139	9.51	9.49	34.043	26.289	175.2	0.307	1.88	29.2	32.8	2.24	27.8	0.03	0.04	0.17	140	209
150 ISL	9.47	9.45	34.061	26.310	173.4	0.326	1.86	28.9	33.3	2.26	27.9	0.02	0.03	0.16	151	
169	9.40	9.38	34.086	26.341	170.8	0.359	1.83	28.4	34.1	2.28	28.1	0.01	0.02	0.14	170	208
200	9.18	9.16	34.143	26.422	163.8	0.411	1.68	26.0	36.7	2.36	29.0	0.01	0.01	0.11	201	207
231	8.96	8.93	34.177	26.484	158.4	0.461	1.51	23.2	39.4	2.44	29.9	0.01			232	206
250 ISL	8.85	8.82	34.199	26.519	155.4	0.491	1.39	21.3	41.0	2.50	30.5	0.00			252	
271	8.73	8.70	34.218	26.553	152.6	0.523	1.28	19.6	42.6	2.55	31.1	0.00			273	205
300 ISL	8.52	8.49	34.215	26.584	150.1	0.567	1.26	19.2	44.2	2.58	31.6	0.01			302	
320	8.35	8.32	34.210	26.606	148.3	0.597	1.24	18.8	45.8	2.60	32.0	0.01			322	204
377	7.63	7.59	34.241	26.738	136.3	0.678	0.77	11.5	57.2	2.86	34.5	0.00			379	203
400 ISL	7.42	7.38	34.244	26.770	133.5	0.709	0.70	10.4	60.1	2.91	35.1	0.00			403	
439	7.11	7.07	34.243	26.813	129.8	0.760	0.65	9.6	64.0	2.96	36.0	0.00			442	202
500 ISL	6.61	6.56	34.249	26.886	123.3	0.837	0.56	8.2	69.9	3.04	37.8	0.00			504	
517	6.47	6.42	34.251	26.906	121.5	0.858	0.54	7.8	71.6	3.06	38.3	0.00			521	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 9.1 N	121 9.7 W	27/07/03	0614 UTC	2264 m	270 08 kn			1017.3 mb	16.6 C	15.2 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.12	17.12	33.463	24.308	360.7	0.000	6.33	115.0	0.7	0.23	0.1	0.01	1.75	0.50	0	
2	17.12	17.12	33.463	24.308	360.8	0.007	6.33	115.0	0.7	0.23	0.1	0.01	1.75	0.50	2	220
10	16.34	16.34	33.465	24.491	343.6	0.035	6.30	112.7	1.1	0.35	0.6	0.04	1.40	0.46	10	219
20	13.75	13.75	33.469	25.057	289.9	0.067	6.05	102.7	2.5	0.73	3.3	0.13	0.83	0.36	20	218
30	11.42	11.42	33.328	25.399	257.5	0.094	5.13	82.8	11.0	1.24	11.4	0.25	0.55	0.34	30	217
40	10.56	10.56	33.304	25.534	244.9	0.120	4.68	74.2	15.2	1.44	16.1	0.23	0.25	0.31	40	216
50 ISL	10.32	10.31	33.465	25.701	229.2	0.143	4.28	67.5	18.4	1.59	18.3	0.22	0.14	0.26	50	
51	10.31	10.30	33.489	25.721	227.3	0.146	4.22	66.6	18.7	1.61	18.5	0.22	0.14	0.26	51	215
61	10.03	10.02	33.771	25.989	202.1	0.167	2.98	46.8	24.1	1.86	22.9	0.22	0.14	0.29	61	214
70	9.86	9.85	33.812	26.050	196.5	0.185	2.82	44.2	25.3	1.91	23.8	0.19	0.08	0.25	70	213
75 ISL	9.73	9.72	33.863	26.111	190.7	0.195	2.66	41.5	27.0	1.97	24.8	0.15	0.07	0.26	75	
83	9.55	9.54	33.947	26.207	181.8	0.210	2.39	37.2	29.8	2.08	26.3	0.08	0.06	0.28	83	212
100	9.43	9.42	34.003	26.270	176.1	0.240	2.17	33.7	31.8	2.16	27.2	0.06	0.05	0.32	101	211
121	9.16	9.15	34.084	26.378	166.3	0.276	1.84	28.4	35.5	2.29	28.9	0.04	0.03	0.27	122	210
125 ISL	9.03	9.02	34.076	26.392	165.0	0.283	1.89	29.1	35.9	2.28	29.1	0.05	0.03	0.25	126	
140	8.55	8.54	34.034	26.435	161.1	0.307	2.16	32.9	36.9	2.24	29.7	0.07	0.04	0.20	141	209
150 ISL	8.36	8.34	34.028	26.459	158.9	0.323	2.14	32.4	37.9	2.26	30.1	0.06	0.04	0.19	151	
168	8.20	8.18	34.047	26.498	155.5	0.351	2.11	31.9	39.9	2.30	30.8	0.05	0.04	0.17	169	208
198	8.34	8.32	34.150	26.559	150.4	0.397	1.58	24.0	43.2	2.47	31.4	0.08	0.03	0.19	199	207
200 ISL	8.34	8.32	34.153	26.561	150.2	0.400	1.56	23.7	43.4	2.48	31.4	0.08			201	
229	8.25	8.23	34.186	26.601	147.0	0.443	1.37	20.7	45.6	2.56	31.9	0.07			230	206
250 ISL	8.23	8.20	34.223	26.633	144.3	0.474	1.18	17.9	47.3	2.63	32.0	0.06			252	
266	8.20	8.17	34.248	26.658	142.3	0.497	1.05	15.9	48.5	2.68	32.1	0.05			268	205
300 ISL	8.05	8.02	34.265	26.694	139.4	0.545	0.91	13.7	50.9	2.75	33.0	0.04			302	
318	7.93	7.90	34.266	26.713	137.8	0.570	0.87	13.1	52.3	2.78	33.6	0.03			320	204
382	7.36	7.32	34.274	26.802	130.1	0.655	0.65	9.6	60.3	2.92	35.7	0.03			385	203
400 ISL	7.10	7.06	34.255	26.824	128.1	0.679	0.66	9.7	62.7	2.94	36.4	0.03			403	
439	6.57	6.53	34.223	26.870	123.8	0.728	0.68	9.9	67.7	2.98	37.9	0.04			442	202
500 ISL	6.38	6.33	34.278	26.939	118.0	0.802	0.47	6.8	74.2	3.08	38.7	0.03			504	
511	6.34	6.29	34.288	26.953	116.9	0.814	0.43	6.2	75.4	3.10	38.9	0.03			515	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 48.9 N	121 50.6 W	27/07/03	1123 UTC	3628 m	210 06 kn			1017.2 mb	16.5 C	15.1 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.38	16.38	33.102	24.203	370.7	0.000	5.96	106.5	1.5	0.44	0.9	0.05	0.38	0.10	0	
2	16.38	16.38	33.102	24.203	370.8	0.007	5.96	106.5	1.5	0.44	0.9	0.05	0.38	0.10	2	220
10	15.69	15.69	33.117	24.370	355.1	0.036	6.05	106.6	1.6	0.47	1.1	0.06	0.62	0.22	10	219
20 ISL	14.71	14.71	33.085	24.560	337.3	0.071	6.04	104.3	2.3	0.55	2.2	0.12	0.64	0.28	20	
21	14.58	14.58	33.083	24.586	334.8	0.074	6.04	104.0	2.4	0.56	2.3	0.13	0.64	0.28	21	218
30	12.59	12.59	33.172	25.058	290.0	0.103	5.84	96.6	4.4	0.91	6.8	0.42	0.69	0.33	30	217
41	12.65	12.64	33.380	25.208	276.0	0.134	5.84	96.8	3.2	0.90	5.4	0.25	0.51	0.36	41	216
49	12.24	12.23	33.376	25.284	269.0	0.155	5.58	91.7	5.2	1.08	7.3	0.24	0.37	0.41	49	215
50 ISL	12.22	12.21	33.381	25.292	268.3	0.158	5.56	91.4	5.4	1.10	7.5	0.24	0.36	0.41	50	
60	11.72	11.71	33.380	25.385	259.6	0.185	5.32	86.5	8.3	1.23	10.1	0.23	0.28	0.39	60	214
70	10.20	10.19	33.221	25.531	245.8	0.210	4.85	76.2	14.1	1.39	15.7	0.10	0.20	0.34	70	213
75 ISL	9.79	9.78	33.219	25.598	239.4	0.222	4.79	74.6	15.1	1.41	16.5	0.09	0.16	0.28	75	
86	9.35	9.34	33.316	25.746	225.6	0.248	4.66	71.9	16.6	1.45	17.2	0.07	0.09	0.17	86	212
100	9.29	9.28	33.556	25.943	207.1	0.278	3.89	60.0	22.1	1.71	21.7	0.06	0.07	0.25	100	211
119	9.38	9.37	33.796	26.117	191.1	0.316	2.96	45.8	27.0	1.97	25.3	0.04	0.03	0.13	120	210
125 ISL	9.27	9.26	33.838	26.168	186.3	0.327	2.96	45.7	27.8	1.96	25.4	0.04	0.03	0.12	126	
139	8.96	8.95	33.905	26.270	176.9	0.352	2.97	45.6	29.4	1.95	25.6	0.04	0.02	0.11	140	209
150 ISL	8.87	8.85	33.953	26.322	172.1	0.372	2.69	41.2	31.4	2.04	26.9	0.04	0.02	0.11	151	
169	8.77	8.75	34.015	26.386	166.3	0.404	2.15	32.9	35.2	2.22	29.4	0.04	0.02	0.12	170	208
198	8.36	8.34	34.066	26.490	157.0	0.451	1.95	29.6	39.7	2.33	31.0	0.04	0.01	0.09	199	207
200 ISL	8.33	8.31	34.069	26.497	156.3	0.454	1.94	29.4	40.0	2.34	31.1	0.04			201	
229	7.97	7.95	34.093	26.570	149.8	0.498	1.74	26.1	44.2	2.45	32.3	0.03			230	206
250 ISL	7.69	7.67	34.098	26.615	145.7	0.529	1.62	24.2	47.3	2.52	33.3	0.03			251	
269	7.46	7.43	34.102	26.651	142.5	0.557	1.51	22.4	50.1	2.58	34.2	0.04			271	205
300 ISL	7.21	7.18	34.135	26.713	137.0	0.600	1.26	18.6	54.7	2.70	35.3	0.04			302	
321	7.04	7.01	34.156	26.753	133.5	0.628	1.09	16.0	57.9	2.78	36.1	0.04			323	204
379	6.27	6.24	34.150	26.851	124.4	0.703	0.85	12.3	68.3	2.94	38.7	0.04			381	203
400 ISL	6.10	6.06	34.157	26.879	122.0	0.729	0.76	10.9	71.4	2.99	39.3	0.04			403	
438	5.87	5.83	34.177	26.923	118.0	0.775	0.60	8.6	76.4	3.06	40.2	0.04			441	202
500 ISL	5.56	5.52	34.229	27.003	111.0	0.846	0.40	5.7	84.3	3.16	41.4	0.04			503	
510	5.51	5.47	34.238	27.016	109.8	0.857	0.37	5.3	85.6	3.18	41.6	0.04			514	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 29.5 N	122 31.6 W	27/07/03	1912	UTC	3975 m	210 04 kn	300 02 07	1	1019.0 mb	18.5 C	16.9 C	16m	7/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.16	16.16	32.958	24.142	376.5	0.000	6.02	107.0	3.0	0.57	2.7	0.11	0.41	0.11	0	
3 A	16.16	16.16	32.958	24.142	376.6	0.011	6.02	107.0	3.0	0.57	2.7	0.11	0.41	0.11	3	222
10 ISL	15.20	15.20	32.994	24.384	353.8	0.037	6.08	106.0	2.9	0.59	3.0	0.15	0.41	0.16	10	
11 A	15.01	15.01	33.001	24.430	349.4	0.040	6.10	106.0	2.9	0.60	3.1	0.16	0.41	0.17	11	220
20 ISL	13.84	13.84	33.012	24.685	325.3	0.071	6.29	106.7	4.1	0.70	4.6	0.17	0.59	0.31	20	
21 A	13.73	13.73	33.014	24.709	323.0	0.074	6.30	106.6	4.2	0.71	4.8	0.17	0.61	0.32	21	219
30 ISL	13.11	13.11	33.094	24.896	305.5	0.102	6.01	100.4	3.2	0.88	6.2	0.19	0.39	0.20	30	
32 A	12.99	12.99	33.110	24.932	302.0	0.108	5.93	98.9	3.1	0.92	6.5	0.20	0.35	0.18	32	218
39	12.39	12.38	33.113	25.051	290.9	0.129	5.77	95.0	4.5	0.98	7.6	0.28	0.55	0.36	39	217
45 A	11.88	11.87	33.145	25.173	279.5	0.146	5.62	91.6	6.8	1.10	9.3	0.26	0.32	0.25	45	216
50 ISL	11.76	11.75	33.196	25.235	273.7	0.160	5.61	91.2	7.8	1.16	10.1	0.26	0.27	0.24	50	
53	11.70	11.69	33.231	25.273	270.1	0.168	5.60	90.9	8.5	1.19	10.7	0.26	0.25	0.24	53	215
61 A	11.01	11.00	33.324	25.471	251.4	0.189	5.05	80.8	12.0	1.38	13.6	0.30	0.09	0.15	61	214
70	10.07	10.06	33.373	25.672	232.4	0.211	4.52	70.9	16.8	1.49	17.1	0.24	0.06	0.12	70	213
75 ISL	9.66	9.65	33.381	25.746	225.4	0.222	4.28	66.5	18.3	1.55	18.5	0.20	0.06	0.12	75	
84	9.22	9.21	33.413 D	25.842	216.3	0.242									84	223
100 ISL	9.63	9.62	33.648	25.960	205.6	0.276	3.37	52.4	23.1	1.82	23.0	0.05	0.04	0.13	100	
101	9.67	9.66	33.665	25.967	205.0	0.278	3.34	52.0	23.2	1.83	23.1	0.05	0.04	0.13	101	211
119	9.27	9.26	33.817	26.151	187.8	0.313	2.90	44.8	27.3	1.95	25.3	0.04	0.02	0.12	120	210
125 ISL	9.24	9.23	33.857	26.187	184.5	0.324	2.74	42.3	28.5	2.00	26.0	0.04	0.02	0.12	126	
140	9.17	9.15	33.941	26.265	177.4	0.352	2.36	36.4	31.3	2.11	27.5	0.04	0.02	0.12	141	209
150 ISL	9.13	9.11	33.992	26.311	173.2	0.369	2.13	32.8	32.9	2.18	28.3	0.04	0.02	0.12	151	
170	9.05	9.03	34.065	26.381	167.0	0.403	1.83	28.2	35.7	2.29	29.4	0.04	0.01	0.12	171	208
199	8.45	8.43	34.075	26.483	157.6	0.450	1.95	29.6	39.2	2.31	30.4	0.04	0.01	0.10	200	207
200 ISL	8.42	8.40	34.074	26.487	157.3	0.452	1.95	29.6	39.4	2.31	30.5	0.04			201	
231	7.70	7.68	34.063	26.585	148.2	0.499	1.90	28.4	45.1	2.41	32.5	0.06			232	206
250 ISL	7.48	7.46	34.081	26.631	144.0	0.527	1.70	25.3	48.4	2.50	33.5	0.06			251	
273	7.28	7.25	34.106	26.680	139.7	0.560	1.44	21.3	52.2	2.61	34.6	0.05			275	205
300 ISL	6.93	6.90	34.106	26.728	135.4	0.597	1.35	19.8	56.5	2.69	35.7	0.04			302	
324	6.61	6.58	34.100	26.767	131.9	0.629	1.30	18.9	60.4	2.74	36.6	0.04			326	204
374	6.00	5.97	34.099	26.845	124.7	0.693	1.03	14.8	68.8	2.88	38.8	0.05			376	203
400 ISL	5.96	5.93	34.137	26.880	121.7	0.725	0.83	11.9	72.0	2.95	39.4	0.05			403	
435	5.91	5.87	34.183	26.923	118.1	0.767	0.59	8.5	76.0	3.04	40.1	0.04			438	202
500 ISL	5.46	5.42	34.203	26.995	111.7	0.842	0.44	6.2	84.9	3.14	41.6	0.04			503	
511	5.38	5.34	34.207	27.007	110.5	0.854	0.41	5.8	86.4	3.16	41.9	0.04			515	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 8.7 N	123 12.7 W	28/07/03	0306	UTC	4229 m	210 06 kn	250 03 07	2	1016.5 mb	17.8 C	16.0 C		8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.19	17.19	32.683	23.693	419.3	0.000	5.81	105.2	2.4	0.36	0.0	0.00	0.15	0.04	0	
1	17.19	17.19	32.683	23.693	419.3	0.004	5.81	105.2	2.4	0.36	0.0	0.00	0.15	0.04	1	221
10 ISL	16.31	16.31	32.729	23.932	396.8	0.041	5.90	105.0	2.5	0.36	0.0	0.00	0.21	0.06	10	
11	16.18	16.18	32.737	23.968	393.4	0.045	5.91	104.9	2.5	0.36	0.0	0.00	0.22	0.06	11	219
20	15.76	15.76	32.784	24.099	381.2	0.080	6.01	105.8	2.7	0.35	0.0	0.00	0.34	0.10	20	218
30 ISL	15.02	15.02	32.809	24.281	364.2	0.117	6.14	106.5	2.9	0.36	0.0	0.00	0.33	0.07	30	
31	14.91	14.91	32.804	24.301	362.3	0.121	6.15	106.5	2.9	0.36	0.0	0.00	0.33	0.07	31	217
39	13.55	13.54	32.653	24.467	346.6	0.149	6.19	104.1	3.2	0.41	0.0	0.00	0.45	0.20	39	216
50 ISL	12.23	12.22	32.572	24.662	328.1	0.186	5.96	97.5	3.8	0.62	2.7	0.33	0.61	0.27	50	
51	12.15	12.14	32.577	24.682	326.3	0.189	5.93	96.8	3.9	0.65	3.1	0.35	0.62	0.28	51	215
60	11.75	11.74	32.810	24.937	302.2	0.218	5.64	91.4	6.5	0.88	7.4	0.12	0.30	0.20	60	214
70	11.18	11.17	32.889	25.102	286.7	0.247	5.43	87.0	8.8	1.01	9.7	0.11	0.22	0.18	70	213
75 ISL	10.83	10.82	32.946	25.208	276.6	0.261	5.38	85.6	10.0	1.08	10.9	0.15	0.17	0.16	75	
85	10.33	10.32	33.127	25.436	255.1	0.288	5.08	80.0	13.1	1.27	14.0	0.20	0.09	0.12	85	212
99	10.68	10.67	33.572	25.723	228.3	0.322	3.77	60.0	20.2	1.67	20.6	0.04	0.08	0.17	99	211
100 ISL	10.64	10.63	33.582	25.738	226.9	0.324	3.74	59.5	20.5	1.68	20.8	0.04	0.08	0.17	100	
120	9.64	9.63	33.663	25.971	205.0	0.367	3.37	52.4	24.7	1.84	23.4	0.02	0.03	0.12	121	210
125 ISL	9.62	9.61	33.730	26.026	199.8	0.377	3.10	48.2	26.2	1.91	24.4	0.02	0.03	0.14	126	
139	9.56	9.54	33.899	26.168	186.6	0.404	2.35	36.6	30.3	2.10	27.0	0.01	0.03	0.19	140	209
150 ISL	9.40	9.38	33.971	26.251	179.0	0.424	2.25	34.9	32.5	2.17	27.5	0.01	0.02	0.18	151	
170	9.04	9.02	34.041	26.364	168.6	0.459	2.07	31.9	35.5	2.22	28.3	0.01	0.01	0.14	171	208
199	8.57	8.55	34.101	26.485	157.5	0.506	1.86	28.3	38.5	2.31	29.5	0.01	0.01	0.10	200	207
200 ISL	8.55	8.53	34.099	26.487	157.4	0.508	1.90	28.9	38.5	2.30	29.4	0.01			201	
230	7.82	7.80	34.013	26.529	153.6	0.555	2.99	44.8	40.1	2.04	28.1	0.01			231	206
250 ISL	7.53	7.51	34.014	26.572	149.7	0.585	2.73	40.6	43.9	2.16	29.7	0.01			251	
269	7.30	7.27	34.027	26.615	145.8	0.613	2.26	33.4	48.1	2.33	31.8	0.00			271	205
300 ISL	6.79	6.76	34.013	26.674	140.4	0.657	2.20	32.2	53.2	2.42	33.3	0.00			302	
317	6.53	6.50	34.005	26.702	137.8	0.681	2.17	31.5	55.8	2.46	33.9	0.00			319	204
378	6.00	5.97	34.030	26.790	129.9	0.763	1.59	22.8	65.3	2.72	37.0	0.00			380	203
400 ISL	5.88	5.85	34.064	26.833	126.1	0.791	1.29	18.5	69.4	2.83	38.2	0.00			403	
438	5.70	5.66	34.123	26.902	119.9	0.838	0.83	11.8	76.3	3.00	39.9	0.00			441	202
500 ISL	5.29	5.25	34.151	26.973	113.5	0.910	0.62	8.7	85.3	3.10	41.3	0.00			503	
516	5.19	5.15	34.159	26.992	111.8	0.928	0.57	8.0	87.6	3.13	41.6	0.00			520	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 48.6 N	123 54.6 W	28/07/03	0831	UTC	4353 m	320 09 kn			1018.1 mb	18.0 C	16.9 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	18.23	18.23	32.811	23.541	433.8	0.000	5.54	102.4	1.3	0.37	0.1	0.00	0.11	0.02	0	
2	18.23	18.23	32.811	23.541	433.9	0.009	5.54	102.4	1.3	0.37	0.1	0.00	0.11	0.02	2	220
10 ISL	18.20	18.20	32.807	23.546	433.7	0.043	5.55	102.5	1.3	0.36	0.0	0.00	0.10	0.03	10	
16	18.17	18.17	32.804	23.551	433.4	0.069	5.55	102.5	1.3	0.36	0.0	0.00	0.10	0.03	16	219
20 ISL	18.15	18.15	32.804	23.556	433.1	0.087	5.55	102.4	1.3	0.36	0.0	0.00	0.10	0.03	20	
30	18.10	18.09	32.805	23.570	432.1	0.130	5.55	102.3	1.2	0.36	0.0	0.00	0.12	0.03	30	218
45	17.06	17.05	32.836	23.843	406.5	0.193	5.80	104.8	1.3	0.35	0.0	0.00	0.19 A	0.06 A	45	217
50 ISL	16.72	16.71	32.850	23.933	398.1	0.213	5.84	104.8	1.3	0.35	0.0	0.00	0.23	0.08	50	
59	16.23	16.22	32.883	24.071	385.2	0.248	5.87	104.4	1.2	0.36	0.0	0.00	0.29	0.10	59	216
75	16.08	16.07	32.958	24.163	376.9	0.309	5.85	103.8	1.1	0.35	0.0	0.00	0.30	0.11	75	215
85	15.83	15.82	32.946	24.210	372.7	0.347	5.84	103.1	1.3	0.36	0.0	0.00	0.31	0.12	85	214
94	14.85	14.84	32.955	24.432	351.7	0.379	5.85	101.2	1.7	0.38	0.1	0.00	0.25	0.24	94	213
100 ISL	14.30	14.29	32.969	24.559	339.6	0.400	5.84	99.9	2.0	0.40	0.1	0.02	0.25	0.26	100	
104	13.93	13.92	32.970	24.637	332.3	0.413	5.82	98.8	2.3	0.43	0.1	0.03	0.25	0.28	104	212
115	12.61	12.59	32.896	24.843	312.7	0.449	5.72	94.5	3.4	0.58	1.9	0.21	0.19	0.22	115	211
123	11.93	11.91	32.885	24.963	301.3	0.473	5.68	92.5	4.1	0.68	3.9	0.12	0.16	0.18	123	210
125 ISL	11.76	11.74	32.892	25.000	297.8	0.479	5.66	91.8	4.4	0.70	4.4	0.10	0.15	0.17	125	
138	10.76	10.74	32.987	25.254	273.7	0.517	5.46	86.7	7.0	0.89	8.3	0.01	0.09	0.12	139	209
150 ISL	10.12	10.10	33.136	25.480	252.3	0.548	5.04	79.0	11.0	1.15	12.6	0.01	0.05	0.08	151	
163	9.65	9.63	33.322	25.703	231.2	0.580	4.50	69.9	15.7	1.43	17.1	0.01	0.02	0.04	164	208
194	9.16	9.14	33.732	26.104	193.8	0.645	3.43	52.8	24.2	1.79	23.2	0.01	0.00	0.03	195	207
200 ISL	9.11	9.09	33.780	26.149	189.5	0.657	3.28	50.5	25.4	1.84	24.0	0.01			201	
229	8.90	8.88	33.932	26.302	175.6	0.710	2.73	41.9	30.3	2.02	26.7	0.01			230	206
250 ISL	8.62	8.59	34.006	26.404	166.2	0.746	2.46	37.5	34.4	2.13	28.4	0.01			251	
268	8.35	8.32	34.049	26.479	159.3	0.775	2.28	34.5	37.8	2.22	29.6	0.01			269	205
300 ISL	7.94	7.91	34.086	26.570	151.0	0.825	1.98	29.7	43.1	2.37	31.4	0.01			302	
319	7.70	7.67	34.095	26.612	147.2	0.853	1.81	27.0	46.2	2.46	32.3	0.01			321	204
376	6.93	6.89	34.125	26.744	135.1	0.934	1.27	18.6	57.3	2.73	35.6	0.01			378	203
400 ISL	6.63	6.59	34.127	26.786	131.2	0.965	1.14	16.6	61.6	2.81	36.9	0.01			402	
438	6.25	6.21	34.135	26.842	126.1	1.014	0.97	14.0	67.8	2.91	38.7	0.01			441	202
500 ISL	6.03	5.99	34.204	26.926	118.9	1.090	0.60	8.6	75.2	3.07	40.4	0.01			503	
508	6.00	5.96	34.213	26.937	117.9	1.100	0.55	7.9	76.2	3.09	40.6	0.01			511	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 17.2 N	120 1.3 W	26/07/03	1831	UTC	577 m	260 06 kn	260 01 07	2	1017.6 mb	19.1 C	17.6 C	05m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	19.41	19.41	33.477	23.754	413.5	0.000	6.35	120.5	1.0	0.08	0.0	0.01	1.83	0.55	0	
2 A,B	19.41	19.41	33.477	23.754	413.5	0.008	6.35	120.5	1.0	0.08	0.0	0.01	1.83	0.55	2	224
3 B	19.26	19.26	33.474	23.791	410.1	0.012	6.39	120.9	1.1	0.09	0.0	0.02	1.91	0.58	3	223
7 B	18.88	18.88	33.469	23.883	401.4	0.029	6.39	120.0	1.1	0.11	-0.2	0.22	2.54	0.95	7	222
10 ISL	18.62	18.62	33.473	23.951	395.0	0.041	6.44	120.4	1.0	0.12	-0.3	0.32	2.69	0.87	10	
11 B	18.47	18.47	33.472	23.988	391.6	0.045	6.47	120.6	1.0	0.13	-0.3	0.34	2.74	0.86	11	221
15 B	17.15	17.15	33.444	24.286	363.2	0.060	6.69	121.6	1.0	0.19	-0.4	0.35	4.48	1.53	15	220
19 B	15.91	15.91	33.467	24.590	334.4	0.074	6.16	109.2	2.4	0.38	0.1	0.05	2.09	1.01	19	219
20 ISL	15.60	15.60	33.470	24.662	327.6	0.077	6.00	105.8	3.1	0.45	0.8	0.06	1.94	0.97	20	
30	13.29	13.29	33.537	25.203	276.3	0.107	4.75	79.9	10.4	1.12	8.6	0.14	0.48	0.59	30	218
39	12.75	12.74	33.647	25.396	258.2	0.131	4.58	76.2	12.2	1.30	10.2	0.05	0.40	0.53	39	217
50	11.37	11.36	33.572	25.598	239.0	0.158	3.67	59.3	17.2	1.55	17.5	0.05	0.13	0.27	50	216
75	10.06	10.05	33.846	26.043	197.3	0.213	2.56	40.3	26.6	1.99	24.3	0.08	0.06	0.20	75	215
98	9.81	9.80	34.004	26.208	182.0	0.257	1.98	31.0	31.5	2.18	26.5	0.10	0.02	0.14	99	214
100 ISL	9.80	9.79	34.008	26.213	181.6	0.260	1.98	31.0	31.5	2.18	26.5	0.09	0.02	0.14	101	
120	9.75	9.74	34.034	26.242	179.3	0.296	1.93	30.2	31.7	2.20	26.8	0.04	0.02	0.14	121	213
125 ISL	9.72	9.71	34.053	26.262	177.5	0.305	1.91	29.9	32.2	2.22	27.1	0.04	0.02	0.13	126	
139	9.60	9.58	34.111	26.328	171.6	0.330	1.82	28.4	34.1	2.29	27.9	0.04	0.02	0.12	140	212
150 ISL	9.50	9.48	34.139	26.366	168.1	0.348	1.66	25.8	35.6	2.34	28.6	0.04	0.02	0.13	151	
169	9.34	9.32	34.168	26.415	163.8	0.380	1.37	21.2	37.9	2.42	29.6	0.04	0.02	0.15	170	211
200	9.13	9.11	34.187	26.465	159.7	0.430	1.22	18.8	40.5	2.50	30.5	0.04	0.02	0.16	201	210
230	8.87	8.85	34.210	26.524	154.6	0.477	1.02	15.7	43.5	2.59	31.7	0.04	0.02	0.16	231	209
250 ISL	8.76	8.73	34.214	26.545	152.9	0.508	0.98	15.0	44.8	2.62	32.0	0.04	0.02	0.16	252	
270	8.65	8.62	34.212	26.561	151.8	0.538	0.96	14.7	46.2	2.64	32.2	0.04			272	208
300 ISL	8.37	8.34	34.207	26.600	148.4	0.583	0.88	13.4	49.9	2.71	32.9	0.04	0.02	0.17	302	
318	8.17	8.14	34.204	26.628	146.0	0.610	0.82	12.4	52.6	2.76	33.4	0.04	0.02	0.17	320	207
378	7.48	7.44	34.196	26.724	137.5	0.695	0.64	9.5	62.1	2.92	34.8	0.05			380	206
400 ISL	7.20	7.16	34.200	26.766	133.6	0.725	0.52	7.7	68.1	3.02	34.6	0.06			403	
438	6.78	6.74	34.213	26.835	127.4	0.774	0.32	4.7	78.9	3.20	34.3	0.07			441	205
500 ISL	6.44	6.39	34.236	26.898	121.9	0.852	0.13	1.9	92.2	3.42	32.8	0.05			503	
512	6.41	6.36	34.240	26.906	121.4	0.866	0.11	1.6	93.9	3.44	32.7	0.04			516	204
542	6.32	6.27	34.249	26.925	119.9	0.903	0.09	1.3	95.7	3.44	33.4	0.04			546	203
565	6.29	6.24	34.253	26.932	119.6	0.930	0.06	0.9	99.6	3.47	32.6	0.04			569	202
570	6.29	6.24	34.251	26.931	119.8	0.936	0.06	0.9	99.7	3.46	32.5	0.04			574	201

A) SANTA BARBARA BASIN STATION.

B) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 13.4 N	119 24.6 W	26/07/03	1427 UTC	34 m	260 04 kn	310 01 07	2	1016.0 mb	19.4 C	18.1 C		8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	20.73	20.73	33.525	23.445	443.0	0.000	6.31	122.7	0.9	0.05	0.0	0.01	2.44	0.58	0	
2	20.73	20.73	33.525	23.445	443.1	0.009	6.31	122.7	0.9	0.05	0.0	0.01	2.44	0.58	2	205
5	19.58	19.58	33.522	23.745	414.5	0.022	6.31	120.1	0.9	0.05	0.0	0.01	2.46	0.64	5	204
10	15.63	15.63	33.394	24.597	333.5	0.040	6.47	114.1	1.9	0.32	0.3	0.02	2.28	0.85	10	203
20	13.54	13.54	33.344	25.003	295.0	0.072	6.07	102.5	4.4	0.68	2.9	0.16	0.90	0.52	20	202
28	12.66	12.66	33.361	25.191	277.3	0.095	5.25	87.1	7.8	0.99	7.4	0.33	0.45	0.38	28	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 10.8 N	119 30.5 W	26/07/03	1246 UTC	115 m	010 05 kn			1015.1 mb	18.4 C	17.3 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	20.75	20.75	33.518	23.435	444.0	0.000	6.37	123.9	0.8	0.06	0.0	0.01	2.42	0.67	0	
2	20.75	20.75	33.518	23.435	444.1	0.009	6.37	123.9	0.8	0.06	0.0	0.01	2.42	0.67	2	210
10	18.80	18.80	33.414	23.861	403.6	0.043	6.28	117.8	1.0	0.23	0.0	0.01	1.73	0.53	10	209
20	14.01	14.01	33.337	24.901	304.7	0.078	5.78	98.6	4.5	0.75	4.4	0.17	1.00	0.49	20	208
30	12.29	12.29	33.383	25.280	268.9	0.107	4.89	80.5	9.3	1.13	10.3	0.30	0.47	0.37	30	207
40	11.27	11.27	33.413	25.493	248.8	0.133	4.24	68.3	12.9	1.41	15.1	0.29	0.26	0.39	40	206
50 ISL	10.78	10.77	33.507	25.653	233.8	0.157	3.79	60.4	16.5	1.60	18.7	0.07	0.15	0.29	50	
51	10.75	10.74	33.516	25.666	232.6	0.159	3.76	59.9	16.8	1.61	18.9	0.05	0.14	0.28	51	205
60	10.64	10.63	33.552	25.713	228.3	0.180	3.80	60.4	18.1	1.65	19.7	0.04	0.11	0.27	60	204
70	10.38	10.37	33.644	25.830	217.4	0.202	3.17	50.1	20.5	1.82	21.5	0.02	0.09	0.29	70	203
75 ISL	10.24	10.23	33.697	25.896	211.3	0.213	2.96	46.7	22.1	1.87	22.4	0.02	0.07	0.25	75	
85	10.00	9.99	33.804	26.020	199.7	0.234	2.65	41.6	25.1	1.95	24.1	0.02	0.03	0.14	85	202
100 ISL	9.93	9.92	33.941	26.139	188.7	0.263	2.27	35.6	28.1	2.08	25.4	0.02	0.02	0.09	101	
101	9.93	9.92	33.950	26.146	188.0	0.265	2.24	35.2	28.3	2.09	25.5	0.02	0.02	0.09	102	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 52.7 N	120 8.1 W	26/07/03	0712 UTC	103 m	310 08 kn			1015.4 mb	16.9 C	16.1 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.55	17.55	33.417	24.170	373.8	0.000	6.51	119.2	1.1	0.25	0.0	0.01	2.32	0.69	0	
1	17.55	17.55	33.417	24.170	373.9	0.004	6.51	119.2	1.1	0.25	0.0	0.01	2.32	0.69	1	210
10	13.90	13.90	33.381	24.958	299.1	0.034	5.62	95.7	5.7	0.79	5.3	0.14	2.69	1.04	10	209
19	11.72	11.72	33.397	25.397	257.4	0.059	4.60	74.8	11.2	1.27	12.7	0.27	0.65	0.43	19	208
20 ISL	11.70	11.70	33.397	25.401	257.1	0.062	4.59	74.6	11.2	1.27	12.8	0.27	0.65	0.44	20	
30	11.55	11.55	33.401	25.432	254.4	0.087	4.53	73.4	11.6	1.32	13.3	0.26	0.60	0.49	30	207
41	10.36	10.36	33.643	25.832	216.5	0.113	3.31	52.3	21.0	1.76	20.8	0.08	0.15	0.21	41	206
50	10.32	10.31	33.692	25.878	212.4	0.132	3.13	49.5	22.4	1.80	21.4	0.09	0.14	0.34	50	205
60	10.23	10.22	33.712	25.909	209.7	0.154	3.06	48.3	23.0	1.84	22.0	0.06	0.11	0.21	60	204
71	10.26	10.25	33.728	25.916	209.2	0.177	3.00	47.4	23.6	1.84	22.0	0.09	0.11 A	0.24 A	71	203
75 ISL	10.23	10.22	33.747	25.936	207.4	0.185	2.95	46.5	24.1	1.87	22.3	0.10	0.11	0.24	75	
81	10.16	10.15	33.781	25.975	203.9	0.197	2.84	44.7	25.1	1.92	22.8	0.10	0.11	0.24	81	202
92	10.06	10.05	33.847	26.044	197.6	0.219	2.59	40.7	27.2	1.99	23.8	0.09	0.07	0.21	92	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 44.8 N	120 24.9 W	26/07/03	0338	UTC	1062 m	290 10 kn	290 03 07	1	1014.2 mb	16.5 C	15.5 C		4/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.68	17.68	33.486	24.192	371.8	0.000	6.22	114.2	0.8	0.21	0.2	0.01	1.83	0.40	0	
2	17.68	17.68	33.486	24.192	371.8	0.007	6.22	114.2	0.8	0.21	0.2	0.01	1.83	0.40	2	221
10 ISL	16.09	16.09	33.472	24.553	337.6	0.036	6.18	110.0	1.2	0.36	0.6	0.04	1.02	0.34	10	
11	15.80	15.80	33.470	24.617	331.6	0.039	6.18	109.4	1.3	0.39	0.6	0.04	0.89	0.33	11	219
20 ISL	13.67	13.67	33.402	25.022	293.3	0.067	6.02	102.0	2.5	0.73	3.2	0.16	0.68	0.36	20	
21	13.46	13.46	33.396	25.060	289.7	0.070	5.99	101.0	2.7	0.77	3.6	0.17	0.66	0.36	21	218
30 ISL	12.53	12.53	33.390	25.239	272.8	0.096	5.54	91.6	6.8	1.04	6.9	0.24	0.52	0.36	30	
31	12.45	12.45	33.386	25.251	271.7	0.098	5.48	90.5	7.3	1.07	7.3	0.24	0.50	0.36	31	217
41	10.87	10.87	33.223	25.416	256.1	0.125	5.08	81.0	11.8	1.30	12.4	0.27	0.21	0.25	41	216
50	10.43	10.42	33.325	25.573	241.4	0.147	4.62	73.0	16.1	1.49	16.8	0.16	0.15	0.27	50	215
60	10.95	10.94	33.684	25.761	223.8	0.170	3.61	57.8	19.8	1.67	18.5	0.20	0.19	0.48	60	214
70	10.49	10.48	33.763	25.904	210.4	0.192	3.15	50.0	22.5	1.80	21.5	0.18	0.26	0.63	70	213
75 ISL	10.27	10.26	33.791	25.964	204.8	0.202	3.05	48.2	23.9	1.87	22.7	0.17	0.23	0.56	75	
85	9.85	9.84	33.835	26.069	194.9	0.222	2.92	45.7	26.7	1.98	24.6	0.15	0.12	0.36	85	212
100	9.22	9.21	33.895	26.220	180.9	0.251	2.57	39.7	30.3	2.06	26.7	0.06	0.06	0.29	101	211
118	8.94	8.93	33.936	26.297	173.9	0.282	2.49	38.2	32.2	2.11	27.7	0.07	0.04	0.21	119	210
125 ISL	8.91	8.90	33.960	26.320	171.8	0.295	2.39	36.7	33.2	2.14	28.1	0.06	0.04	0.22	126	
138	8.87	8.86	34.004	26.361	168.1	0.317	2.21	33.9	35.0	2.20	28.7	0.04	0.03	0.26	139	209
150 ISL	8.71	8.69	34.022	26.401	164.6	0.337	2.19	33.5	36.3	2.22	29.1	0.04	0.03	0.24	151	
169	8.45	8.43	34.045	26.459	159.3	0.367	2.17	33.0	38.2	2.26	29.7	0.05	0.03	0.22	170	208
199	8.31	8.29	34.117	26.537	152.4	0.414	1.78	27.0	42.3	2.41	30.9	0.06	0.02	0.13	200	207
200 ISL	8.31	8.29	34.120	26.540	152.2	0.416	1.76	26.7	42.5	2.42	30.9	0.06			201	
228	8.18	8.16	34.183	26.609	146.1	0.457	1.36	20.5	46.5	2.59	32.2	0.04			229	206
250 ISL	7.97	7.94	34.180	26.638	143.7	0.489	1.37	20.6	48.5	2.61	32.7	0.05			252	
267	7.80	7.77	34.169	26.655	142.3	0.514	1.37	20.5	49.9	2.63	33.1	0.05			269	205
300 ISL	7.55	7.52	34.191	26.709	137.6	0.560	1.14	17.0	53.9	2.73	34.2	0.06			302	
319	7.44	7.41	34.210	26.740	135.0	0.586	0.98	14.6	56.2	2.79	34.8	0.06			321	204
380	7.23	7.19	34.262	26.811	129.1	0.666	0.65	9.6	61.6	2.94	35.9	0.02			383	203
400 ISL	7.12	7.08	34.271	26.833	127.2	0.692	0.58	8.6	63.6	2.98	36.4	0.02			403	
440	6.87	6.83	34.282	26.877	123.5	0.742	0.48	7.0	67.5	3.04	37.4	0.02			443	202
500 ISL	6.55	6.50	34.295	26.931	119.1	0.815	0.40	5.8	72.9	3.11	38.5	0.01			504	
529	6.39	6.34	34.302	26.957	116.8	0.849	0.36	5.2	75.5	3.14	39.1	0.01			533	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 34.9 N	120 45.1 W	25/07/03	2258	UTC	1296 m	00 kn	320 04 07	1	1014.9 mb	18.1 C	16.9 C	21m	6/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.65	17.65	32.899	23.749	414.0	0.000	5.66	103.5	1.7	0.37	0.0	0.00	0.26	0.06	0	
2	17.65	17.65	32.899	23.749	414.0	0.008	5.66	103.5	1.7	0.37	0.0	0.00	0.26	0.06	2	221
10 ISL	17.21	17.21	32.893	23.850	404.7	0.041	5.67	102.8	1.7	0.37	0.0	0.00	0.30	0.08	10	
11	17.12	17.12	32.892	23.870	402.8	0.045	5.67	102.6	1.7	0.37	0.0	0.00	0.30	0.08	11	219
20	16.39	16.39	32.899	24.045	386.4	0.081	5.84	104.2	1.5	0.38	0.1	0.00	0.46	0.17	20	218
30 ISL	13.47	13.47	32.884	24.662	327.8	0.116	5.97	100.4	3.2	0.51	1.4	0.14	0.63	0.31	30	
31	13.16	13.16	32.887	24.726	321.7	0.120	5.98	99.9	3.4	0.53	1.6	0.15	0.64	0.33	31	217
41	11.56	11.55	32.883	25.028	293.1	0.150	5.63	90.9	5.9	0.78	6.0	0.16	0.66	0.56	41	216
50 ISL	10.94	10.93	32.909	25.160	280.7	0.176	5.47	87.2	7.8	0.96	9.0	0.16	0.46	0.40	50	
51	10.91	10.90	32.919	25.173	279.5	0.179	5.45	86.8	8.1	0.98	9.4	0.16	0.43	0.37	51	215
60	10.77	10.76	33.163	25.388	259.3	0.203	5.10	81.1	11.8	1.26	14.3	0.04	0.15	0.16	60	214
71	10.16	10.15	33.270	25.576	241.5	0.231	4.69	73.7	15.9	1.45	17.5	0.03	0.09	0.12	71	213
75 ISL	9.86	9.85	33.296	25.647	234.8	0.240	4.68	73.0	16.5	1.44	17.6	0.03	0.07	0.11	75	
86	9.20	9.19	33.361	25.805	219.9	0.265	4.66	71.7	17.3	1.41	17.9	0.04	0.04	0.10	86	212
100	9.21	9.20	33.453	25.876	213.5	0.296	4.40	67.7	19.3	1.52	19.5	0.06	0.04	0.10	100	211
121	8.98	8.97	33.729	26.128	189.9	0.338	3.73	57.2	24.7	1.72	23.0	0.08	0.05	0.16	122	210
125 ISL	8.92	8.91	33.756	26.159	187.0	0.345	3.83	58.7	24.6	1.68	22.6	0.07	0.05	0.16	126	
140	8.74	8.73	33.828	26.244	179.3	0.373	4.20	64.1	24.0	1.55	21.3	0.04	0.04	0.14	141	209
150 ISL	8.70	8.68	33.884	26.294	174.7	0.391	3.82	58.3	26.5	1.67	23.0	0.04	0.04	0.14	151	
170	8.66	8.64	33.980	26.376	167.3	0.425	2.74	41.8	33.0	2.02	27.8	0.03	0.03	0.13	171	208
198	8.47	8.45	34.038	26.451	160.7	0.471	2.15	32.7	37.6	2.24	30.7	0.03	0.01	0.10	199	207
200 ISL	8.44	8.42	34.040	26.457	160.1	0.474	2.13	32.3	37.9	2.25	30.8	0.03			201	
229	7.96	7.94	34.061	26.546	152.0	0.519	1.97	29.6	42.9	2.37	32.4	0.03			230	206
250 ISL	7.70	7.68	34.070	26.591	148.0	0.551	1.85	27.6	46.0	2.44	33.4	0.03			251	
271	7.47	7.44	34.079	26.631	144.4	0.581	1.70	25.3	49.0	2.51	34.4	0.02			273	205
300 ISL	7.19	7.16	34.109	26.695	138.7	0.622	1.40	20.7	53.7	2.64	35.7	0.02			302	
322	6.98	6.95	34.129	26.740	134.7	0.653	1.19	17.5	57.4	2.74	36.7	0.02			324	204
378	6.33	6.30	34.125	26.824	127.1	0.726	0.97	14.0	66.2	2.87	39.0	0.02			380	203
400 ISL	6.14	6.10	34.138	26.858	123.9	0.753	0.84	12.1	70.1	2.93	39.9	0.02			403	
437	5.89	5.85	34.173	26.918	118.6	0.798	0.61	8.7	76.2	3.04	41.1	0.02			440	202
500 ISL	5.74	5.70	34.260	27.006	111.0	0.871	0.36	5.1	82.8	3.16	42.0	0.02			503	
510	5.72	5.68	34.274	27.020	109.8	0.882	0.32	4.6	83.9	3.18	42.1	0.02			514	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 14.1 N	121 25.8 W	25/07/03	1835 UTC	3797 m	100 04 kn	330 02 07	2	1015.5 mb	18.4 C	16.8 C	20m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.14	17.14	32.968	23.923	397.4	0.000	5.69	103.1	1.5	0.38	0.0	0.00	0.23	0.06	0	
2 A	17.14	17.14	32.968	23.923	397.4	0.008	5.69	103.1	1.5	0.38	0.0	0.00	0.23	0.06	2	221
10 ISL	17.03	17.03	32.961	23.944	395.7	0.040	5.71	103.2	1.5	0.38	0.0	0.00	0.25	0.07	10	
12 A	17.00	17.00	32.959	23.950	395.2	0.048	5.71	103.1	1.5	0.38	0.0	0.00	0.25	0.07	12	220
20	15.23	15.23	32.902	24.306	361.4	0.078	6.13	106.9	1.4	0.45	0.8	0.08	0.67	0.21	20	219
28 A	13.74	13.74	32.817	24.555	337.9	0.106	6.22	105.1	1.4	0.52	1.6	0.18	0.90	0.31	28	218
30 ISL	13.60	13.60	32.833	24.596	334.0	0.113	6.18	104.2	1.4	0.55	2.0	0.21	0.89	0.31	30	
38 A	13.32	13.31	32.933	24.730	321.5	0.139	5.97	100.1	2.3	0.70	3.8	0.30	0.72	0.33	38	217
47	12.73	12.72	33.006	24.903	305.2	0.167	5.78	95.8	5.1	0.86	6.1	0.31	0.40	0.28	47	216
50 ISL	12.48	12.47	33.001	24.948	301.0	0.176	5.71	94.1	5.7	0.92	7.0	0.35	0.32	0.24	50	
56 A	12.14	12.13	33.028	25.033	293.0	0.194	5.59	91.5	6.4	1.01	8.1	0.40	0.20	0.16	56	215
66	12.61	12.60	33.361	25.202	277.3	0.222	5.48	90.8	6.8	1.02	6.6	0.30	0.08	0.14	66	214
75 A	11.18	11.17	33.260	25.391	259.4	0.247	5.10	81.9	11.3	1.31	12.6	0.52	0.11	0.15	75	213
88	10.40	10.39	33.371	25.614	238.3	0.279	4.56	72.0	16.2	1.51	17.8	0.08	0.07	0.11	88	212
100	9.32	9.31	33.304	25.741	226.2	0.307	4.81	74.2	15.4	1.33	15.7	0.04	0.03	0.06	100	211
118	9.37	9.36	33.724	26.062	196.2	0.345	3.35	51.8	24.7	1.82	23.0	0.03	0.01	0.06	119	210
125 ISL	9.33	9.32	33.801	26.129	190.0	0.358	3.00	46.4	26.9	1.93	24.6	0.03	0.01	0.07	126	
139	9.24	9.22	33.901	26.222	181.5	0.384	2.61	40.3	29.9	2.04	26.3	0.02	0.01	0.10	140	209
150 ISL	8.94	8.92	33.944	26.304	173.9	0.404	2.76	42.4	31.3	2.01	26.4	0.02	0.01	0.08	151	
170	8.39	8.37	33.990	26.425	162.6	0.437	3.04	46.1	33.8	1.96	26.6	0.02	0.01	0.04	171	208
196	8.29	8.27	34.057	26.493	156.6	0.479	2.00	30.3	40.1	2.31	30.7	0.02	0.01	0.06	197	207
200 ISL	8.25	8.23	34.062	26.503	155.7	0.485	1.98	29.9	40.7	2.33	31.0	0.02			201	
228	7.93	7.91	34.082	26.567	150.0	0.528	1.84	27.6	44.1	2.41	32.2	0.02			229	206
250 ISL	7.63	7.61	34.094	26.620	145.2	0.560	1.67	24.9	47.7	2.50	33.3	0.02			251	
267	7.40	7.37	34.102	26.659	141.6	0.585	1.54	22.8	50.6	2.57	34.2	0.02			269	205
300 ISL	7.08	7.05	34.111	26.712	137.0	0.631	1.34	19.7	55.2	2.68	35.5	0.02			302	
322	6.89	6.86	34.117	26.743	134.3	0.661	1.22	17.9	58.1	2.74	36.3	0.02			324	204
379	6.38	6.35	34.157	26.842	125.4	0.735	0.84	12.2	66.7	2.92	38.1	0.02			381	203
400 ISL	6.20	6.16	34.165	26.872	122.7	0.761	0.75	10.8	70.0	2.97	38.7	0.02			403	
440	5.89	5.85	34.180	26.923	118.1	0.809	0.60	8.6	76.2	3.05	39.9	0.02			443	202
500 ISL	5.47	5.43	34.221	27.008	110.5	0.877	0.40	5.7	85.5	3.16	41.3	0.02			503	
512	5.39	5.35	34.230	27.024	109.0	0.891	0.36	5.1	87.4	3.18	41.6	0.02			516	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 54.9 N	122 7.6 W	25/07/03	1207 UTC	4181 m	330 03 kn			1013.7 mb	17.4 C	15.5 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.18	17.18	32.885	23.850	404.3	0.000	5.64	102.2	1.4	0.40	0.0	0.00	0.26	0.07	0	
2	17.18	17.18	32.885	23.850	404.4	0.008	5.64	102.2	1.4	0.40	0.0	0.00	0.26	0.07	2	220
10	17.18	17.18	32.885	23.851	404.6	0.040	5.63	102.0	1.4	0.39	0.0	0.00	0.26	0.09	10	219
20	17.19	17.19	33.079	23.997	391.0	0.080	5.70	103.4	0.8	0.37	0.0	0.00	0.35	0.13	20	218
30	17.10	17.10	33.074	24.015	389.6	0.119	5.67	102.7	0.9	0.37	0.0	0.00	0.33	0.14	30	217
41	15.92	15.91	33.191	24.377	355.4	0.160	5.68	100.6	1.7	0.55	1.3	0.06	0.84	0.31	41	216
49	13.11	13.10	33.385	25.122	284.5	0.186	5.76	96.4	4.0	0.91	5.5	0.34	0.60	0.28	49	215
50 ISL	12.89	12.88	33.401	25.178	279.2	0.189	5.67	94.5	4.8	0.97	6.4	0.39	0.57	0.27	50	
60	11.47	11.46	33.496	25.521	246.6	0.215	4.60	74.4	13.8	1.50	15.1	0.68	0.27	0.22	60	214
71	10.65	10.64	33.544	25.706	229.3	0.241	4.12	65.5	18.1	1.63	19.5	0.16			71	213
75 ISL	10.35	10.34	33.580	25.786	221.7	0.250	3.89	61.5	19.8	1.71	20.9	0.12	0.16	0.18	75	
84	9.80	9.79	33.674	25.952	206.0	0.269	3.38	52.8	23.3	1.87	23.3	0.03	0.09	0.17	84	212
98	9.60	9.59	33.793	26.078	194.3	0.297	2.85	44.4	26.4	1.97	24.9	0.02	0.02	0.12	98	211
100 ISL	9.60	9.59	33.808	26.090	193.2	0.301	2.77	43.1	26.8	1.99	25.1	0.02	0.02	0.12	100	
119	9.58	9.57	33.926	26.186	184.6	0.337	2.23	34.7	30.0	2.14	27.0	0.02	0.01	0.13	120	210
125 ISL	9.52	9.51	33.953	26.217	181.7	0.348	2.20	34.2	30.7	2.16	27.3	0.02	0.01	0.13	126	
139	9.30	9.28	33.998	26.288	175.2	0.373	2.14	33.1	32.4	2.19	27.8	0.02	0.02	0.13	140	209
150 ISL	9.03	9.01	34.013	26.343	170.1	0.392	2.15	33.1	33.9	2.21	28.5	0.02	0.02	0.12	151	
168	8.56	8.54	34.023	26.425	162.6	0.422	2.16	32.9	36.7	2.23	29.8	0.02	0.01	0.09	169	208
198	7.96	7.94	34.043	26.531	152.8	0.469	2.19	32.9	41.6	2.29	31.0	0.02	0.01	0.07	199	207
200 ISL	7.95	7.93	34.047	26.536	152.4	0.472	2.16	32.4	41.9	2.30	31.1	0.02			201	
229	7.82	7.80	34.106	26.602	146.6	0.516	1.68	25.2	46.2	2.49	32.5	0.02			230	206
250 ISL	7.63	7.61	34.118	26.639	143.4	0.546	1.53	22.8	48.7	2.56	33.2	0.02			251	
269	7.41	7.38	34.120	26.672	140.5	0.573	1.45	21.5	51.2	2.61	33.9	0.02			271	205
300 ISL	7.02	6.99	34.133	26.737	134.6	0.616	1.21	17.8	56.8	2.73	35.5	0.02			302	
315	6.81	6.78	34.135	26.767	131.8	0.636	1.12	16.4	59.8	2.79	36.3	0.02			317	204
377	5.70	5.67	34.079	26.866	122.5	0.715	1.15	16.4	72.5	2.90	39.0	0.02			379	203
400 ISL	5.56	5.53	34.095	26.896	119.8	0.743	0.99	14.1	76.0	2.96	39.8	0.02			403	
438	5.44	5.40	34.138	26.945	115.6	0.787	0.70	9.9	81.2	3.07	40.9	0.01			441	202
500 ISL	5.13	5.09	34.193	27.025	108.4	0.857	0.62	8.7	90.1	3.17	42.2	0.01			503	
516	5.05	5.01	34.208	27.047	106.5	0.874	0.60	8.4	92.4	3.20	42.5	0.01			520	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 34.8 N	122 48.6 W	25/07/03	0639 UTC	4269 m	360 10 kn			1014.4 mb	16.6 C	16.1 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.04	17.04	32.643	23.698	418.9	0.000	5.71	103.0	1.8	0.37	0.0	0.00	0.17	0.05	0	
2	17.04	17.04	32.643	23.698	419.0	0.008	5.71	103.0	1.8	0.37	0.0	0.00	0.17	0.05	2	220
10 ISL	17.05	17.05	32.648	23.700	419.0	0.042	5.72	103.2	1.8	0.36	0.0	0.00	0.17	0.07	10	
16	17.05	17.05	32.652	23.703	418.9	0.067	5.72	103.2	1.8	0.36	0.0	0.00	0.17	0.08	16	219
20 ISL	16.96	16.96	32.675	23.742	415.3	0.084	5.75	103.6	1.9	0.36	0.0	0.00	0.19	0.08	20	
30 ISL	16.66	16.66	32.751	23.870	403.4	0.125	5.83	104.5	2.0	0.36	0.0	0.00	0.25	0.08	30	
31	16.63	16.63	32.760	23.884	402.1	0.129	5.84	104.6	2.0	0.36	0.0	0.00	0.26	0.08	31	218
45	16.24	16.23	32.883	24.068	385.0	0.184	5.88	104.6	2.0	0.36	0.0	0.00	0.28	0.09	45	217
50 ISL	16.03	16.02	32.890	24.121	380.1	0.203	5.88	104.2	2.0	0.36	0.0	0.00	0.30	0.10	50	
60	15.53	15.52	32.880	24.225	370.4	0.240	5.88	103.1	2.0	0.37	0.0	0.00	0.33	0.13	60	216
75	14.64	14.63	32.878	24.417	352.5	0.295	5.91	101.8	2.4	0.39	0.0	0.00	0.33	0.25	75	215
85	13.67	13.66	32.956	24.679	327.7	0.329	5.79	97.8	3.1	0.45	0.3	0.07	0.34	0.35	85	214
95	12.40	12.39	32.890	24.878	308.8	0.360	5.73	94.2	4.1	0.60	2.0	0.23	0.20	0.30	95	213
100 ISL	11.97	11.96	32.882	24.953	301.7	0.376	5.69	92.7	4.6	0.66	3.3	0.17	0.17	0.26	100	
105	11.59	11.58	32.884	25.025	294.9	0.391	5.64	91.1	5.2	0.73	4.8	0.08	0.15	0.21	105	212
114	10.83	10.82	32.909	25.180	280.2	0.417	5.49	87.3	7.1	0.89	7.8	0.02	0.11	0.15	114	211
124	10.25	10.24	32.951	25.313	267.6	0.444	5.33	83.7	9.9	1.08	10.9	0.01	0.08	0.10	125	210
125 ISL	10.21	10.20	32.964	25.330	266.0	0.447	5.31	83.3	10.1	1.09	11.1	0.01	0.08	0.10	126	
139	9.80	9.78	33.189	25.574	243.0	0.482	5.03	78.3	12.5	1.20	13.5	0.01	0.03	0.05	140	209
150 ISL	9.42	9.40	33.326	25.743	227.1	0.508	4.96	76.6	14.1	1.23	14.5	0.01	0.02	0.04	151	
164	9.04	9.02	33.486	25.929	209.6	0.539	4.87	74.7	17.1	1.32	16.4	0.01	0.01	0.02	165	208
194	9.16	9.14	33.851	26.197	185.0	0.598	2.71	41.8	31.9	2.12	27.7	0.01	0.01	0.10	195	207
200 ISL	9.08	9.06	33.885	26.236	181.3	0.609	2.88	44.3	31.4	2.05	27.0	0.01			201	
227	8.59	8.57	33.963	26.374	168.5	0.656	4.04	61.5	27.4	1.62	22.0	0.01			228	206
250 ISL	8.21	8.18	34.001	26.462	160.4	0.694	3.59	54.2	32.8	1.80	24.8	0.01			251	
269	7.91	7.88	34.018	26.520	155.1	0.724	2.89	43.3	39.2	2.08	28.6	0.01			270	205
300 ISL	7.41	7.38	34.033	26.604	147.4	0.771	2.29	34.0	46.6	2.34	31.9	0.01			302	
319	7.14	7.11	34.042	26.649	143.3	0.798	1.99	29.3	50.6	2.47	33.5	0.01			321	204
377	6.61	6.58	34.107	26.773	132.1	0.878	1.24	18.1	60.9	2.78	36.6	0.01			379	203
400 ISL	6.43	6.39	34.127	26.813	128.5	0.908	1.05	15.2	64.6	2.86	37.5	0.01			402	
438	6.17	6.13	34.156	26.869	123.5	0.956	0.82	11.8	70.5	2.97	38.8	0.01			441	202
500 ISL	5.77	5.73	34.207	26.960	115.3	1.030	0.52	7.4	80.1	3.12	40.4	0.01			503	
518	5.66	5.62	34.222	26.986	113.0	1.051	0.43	6.1	82.9	3.16	40.9	0.01			521	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 15.0 N	123 29.7 W	25/07/03	0106 UTC	4133 m	320 10 kn	310 03 07	2	1014.2 mb	17.9 C	17.0 C	25m	8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	18.70	18.70	33.033	23.595	428.7	0.000	5.46	102.0	1.6	0.36	0.0	0.00	0.11	0.02	0	
3	18.70	18.70	33.033	23.595	428.8	0.013	5.46	102.0	1.6	0.36	0.0	0.00	0.11	0.02	3	221
10 ISL	18.70	18.70	33.033	23.595	429.0	0.043	5.46	102.0	1.5	0.36	0.0	0.00	0.11	0.02	10	
16	18.69	18.69	33.035	23.599	428.8	0.069	5.47	102.1	1.5	0.35	0.0	0.00	0.11	0.03	16	219
20 ISL	18.68	18.68	33.037	23.604	428.6	0.086	5.47	102.1	1.6	0.35	0.0	0.00	0.12	0.03	20	
30 ISL	18.66	18.65	33.045	23.615	427.8	0.129	5.47	102.1	1.7	0.35	0.0	0.00	0.14	0.04	30	
31	18.66	18.65	33.046	23.616	427.8	0.133	5.47	102.1	1.7	0.35	0.0	0.00	0.14	0.04	31	218
46	18.66	18.65	33.068	23.633	426.6	0.197	5.47	102.1	1.6	0.35	0.0	0.00	0.18	0.05	46	217
50 ISL	18.24	18.23	33.053	23.726	417.9	0.214	5.56	102.9	1.7	0.35	0.0	0.00	0.21	0.06	50	
60	17.13	17.12	33.053	23.993	392.7	0.254	5.78	104.7	1.9	0.35	0.0	0.00	0.27	0.09	60	216
75	16.67	16.66	33.248	24.251	368.6	0.311	5.78	103.9	1.9	0.35	0.0	0.00	0.28	0.12	75	215
87	15.52	15.51	33.084	24.385	356.0	0.355	5.85	102.7	2.0	0.39	0.0	0.00	0.28	0.16	87	214
96	14.97	14.96	33.126	24.538	341.6	0.386	5.84	101.4	2.1	0.42	0.0	0.00	0.20	0.17	96	213
100 ISL	14.50	14.49	33.091	24.611	334.7	0.400	5.82	100.1	2.3	0.45	0.1	0.01	0.20	0.17	100	
104	13.99	13.98	33.045	24.682	328.0	0.413	5.80	98.7	2.6	0.48	0.1	0.03	0.20	0.17	104	212
116	12.82	12.80	32.954	24.847	312.4	0.452	5.71	94.8	3.5	0.61	2.0	0.15	0.19	0.19	116	211
125 ISL	11.88	11.86	32.923	25.002	297.6	0.479	5.57	90.6	4.9	0.76	4.9	0.12	0.17	0.18	125	
126	11.78	11.76	32.924	25.021	295.8	0.482	5.55	90.1	5.1	0.78	5.3	0.11	0.17	0.18	126	210
139	10.78	10.76	33.062	25.309	268.5	0.519	5.15	81.9	8.8	1.05	10.2	0.04	0.10	0.14	140	209
150 ISL	10.64	10.62	33.292	25.513	249.4	0.547	4.62	73.3	12.0	1.25	13.7	0.03	0.09	0.12	151	
166	10.44	10.42	33.565	25.760	226.2	0.585	3.92	62.0	16.5	1.48	17.8	0.02	0.08	0.09	167	208
195	9.03	9.01	33.705	26.103	193.8	0.646	3.82	58.7	22.8	1.67	21.6	0.01	0.00	0.02	196	207
200 ISL	8.99	8.97	33.753	26.147	189.7	0.656	3.71	56.9	24.0	1.71	22.3	0.01			201	
230	8.74	8.72	33.956	26.346	171.4	0.710	2.95	45.1	30.7	1.96	26.1	0.01			231	206
250 ISL	8.52	8.49	34.009	26.421	164.5	0.743	2.70	41.1	34.0	2.06	27.6	0.01			251	
269	8.28	8.25	34.030	26.475	159.7	0.774	2.52	38.1	37.0	2.14	28.8	0.01			270	205
300 ISL	7.85	7.82	34.061	26.563	151.6	0.822	2.12	31.8	42.9	2.33	31.1	0.01			302	
317	7.62	7.59	34.074	26.607	147.6	0.848	1.90	28.3	46.2	2.43	32.3	0.01			319	204
377	7.01	6.97	34.126	26.734	136.1	0.933	1.22	17.9	56.8	2.73	35.6	0.01			379	203
400 ISL	6.81	6.77	34.142	26.774	132.5	0.964	1.05	15.4	60.4	2.81	36.5	0.01			402	
439	6.48	6.44	34.163	26.835	127.1	1.014	0.84	12.2	66.2	2.92	37.8	0.01			442	202
500 ISL	5.92	5.88	34.176	26.917	119.5	1.090	0.63	9.0	75.5	3.04	39.8	0.01			503	
516	5.77	5.73	34.180	26.939	117.5	1.109	0.57	8.1	78.0	3.07	40.3	0.01			519	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 53.4 N	118 29.4 W	23/07/03	0025	UTC	60 m	240	04 kn	260 01 06	1	1013.9 mb	21.0 C	19.9 C	04m	7/8	CS

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	22.49	22.49	33.547	22.978	487.6	0.000	6.60	132.5	0.7	0.04	0.1	0.01	2.59	0.66	0	
2	22.49	22.49	33.547	22.979	487.6	0.010	6.60	132.5	0.7	0.04	0.1	0.01	2.59	0.66	2	207
6	21.89	21.89	33.536	23.138	472.6	0.029	6.67	132.5	0.7	0.04	0.1	0.01	3.86	1.27	6	206
10	19.22	19.22	33.497	23.819	407.7	0.047	5.53	104.6	3.2	0.25	0.3	0.03	2.98	1.27	10	205
20	13.90	13.90	33.402	24.974	297.8	0.082	5.63	95.8	6.2	0.77	2.9	0.20	0.38	0.31	20	204
30	11.86	11.86	33.341	25.328	264.3	0.110	4.59	74.8	11.4	1.32	11.1	0.54	0.26	0.34	30	203
40	11.20	11.20	33.420	25.511	247.1	0.136	4.05	65.1	13.7	1.47	16.1	0.31	0.20	0.27	40	202
50	10.91	10.90	33.493	25.620	237.0	0.160	3.58	57.2	16.8	1.63	18.0	0.34	0.15	0.34	50	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 49.4 N	118 37.8 W	23/07/03	0223	UTC	668 m	270	02 kn	290 01 05	1	1013.4 mb	21.2 C	19.7 C		7/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	22.90	22.90	33.577	22.885	496.5	0.000	6.65	134.5	0.7	0.06	0.0	0.01	3.29	1.03	0	
2	22.90	22.90	33.577	22.885	496.6	0.010	6.65	134.5	0.7	0.06	0.0	0.01	3.29	1.03	2	221
10	21.39	21.39	33.532	23.273	459.8	0.048	6.09	119.9	1.4	0.11	0.0	0.02	2.98	1.10	10	219
20	15.26	15.26	33.394	24.679	326.0	0.087	6.81	119.2	2.5	0.43	0.0	0.00	0.59	0.32	20	218
30 ISL	12.37	12.37	33.397	25.275	269.4	0.117	5.06	83.4	7.8	1.07	8.0	0.33	0.24	0.19	30	
31	12.21	12.21	33.397	25.306	266.5	0.120	4.83	79.4	8.5	1.14	9.0	0.36	0.20	0.18	31	217
40	11.01	11.01	33.479	25.591	239.5	0.143	3.72	59.6	15.6	1.59	17.6	0.26	0.12	0.20	40	216
50	10.74	10.73	33.547	25.692	230.1	0.166	3.49	55.6	17.6	1.66	19.6	0.10	0.10	0.17	50	215
60	10.58	10.57	33.578	25.744	225.4	0.189	3.39	53.8	18.8	1.71	20.4	0.03	0.09	0.16	60	214
69	10.54	10.53	33.593	25.763	223.8	0.209	3.36	53.3	19.4	1.73	20.7	0.02	0.09	0.18	69	213
75 ISL	10.51	10.50	33.614	25.785	221.9	0.223	3.29	52.2	19.9	1.75	20.9	0.07	0.09	0.17	75	
86	10.38	10.37	33.635	25.824	218.4	0.247	3.16	50.0	20.8	1.79	21.9	0.14	0.08	0.14	86	212
99	10.01	10.00	33.841	26.048	197.3	0.274	2.53	39.7	25.8	1.98	24.5	0.01	0.03	0.09	99	211
100 ISL	10.01	10.00	33.852	26.056	196.6	0.276	2.50	39.3	26.0	1.99	24.5	0.01	0.03	0.09	100	
120	9.95	9.94	33.976	26.163	186.8	0.314	2.21	34.7	28.4	2.09	25.5	0.01	0.02	0.08	121	210
125 ISL	9.90	9.89	33.994	26.186	184.8	0.323	2.19	34.4	28.9	2.10	25.7	0.01	0.02	0.08	126	
140	9.74	9.72	34.038	26.247	179.2	0.351	2.13	33.3	30.2	2.14	26.3	0.01	0.01	0.07	141	209
150 ISL	9.68	9.66	34.075	26.286	175.7	0.368	2.00	31.2	31.4	2.19	26.8	0.01	0.01	0.07	151	
169	9.57	9.55	34.131	26.349	170.2	0.401	1.79	27.9	33.5	2.27	27.7	0.01	0.01	0.06	170	208
199	9.23	9.21	34.130	26.404	165.5	0.452	1.87	28.9	35.0	2.28	28.3	0.01	0.01	0.07	200	207
200 ISL	9.22	9.20	34.129	26.405	165.4	0.453	1.88	29.1	35.0	2.28	28.3	0.01			201	
229	8.84	8.82	34.122	26.460	160.6	0.501	1.98	30.4	36.6	2.27	28.7	0.01			230	206
250 ISL	8.75	8.72	34.162	26.506	156.6	0.534	1.78	27.2	38.8	2.35	29.4	0.01			251	
269	8.70	8.67	34.205	26.548	153.0	0.563	1.53	23.4	41.1	2.45	30.2	0.01			271	205
300 ISL	8.49	8.46	34.237	26.606	148.0	0.610	1.28	19.5	44.5	2.56	31.1	0.01			302	
317	8.36	8.33	34.248	26.634	145.5	0.635	1.17	17.8	46.4	2.62	31.6	0.01			319	204
378	7.89	7.85	34.276	26.727	137.5	0.721	0.84	12.6	52.8	2.78	33.6	0.01			380	203
400 ISL	7.74	7.70	34.282	26.754	135.3	0.751	0.75	11.2	55.0	2.83	34.1	0.01			403	
439	7.46	7.42	34.290	26.801	131.2	0.803	0.61	9.1	59.1	2.91	35.1	0.01			442	202
500 ISL	6.89	6.84	34.296	26.886	123.7	0.881	0.45	6.6	67.5	3.04	37.1	0.01			503	
521	6.69	6.64	34.299	26.915	121.0	0.907	0.39	5.7	70.4	3.08	37.8	0.01			525	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 39.3 N	118 58.6 W	23/07/03	0554	UTC	714 m	330	03 kn			1014.0 mb	20.0 C	19.5 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	20.87	20.87	33.468	23.364	450.7	0.000	5.74	111.9	0.7	0.18	0.0	0.00	0.59	0.19	0	
2	20.87	20.87	33.468	23.365	450.8	0.009	5.74	111.9	0.7	0.18	0.0	0.00	0.59	0.19	2	221
10	20.64	20.64	33.457	23.418	446.0	0.045	6.03	117.0	0.5	0.13	0.0	0.00	0.95	0.32	10	219
20	14.55	14.55	33.338	24.789	315.5	0.083	7.00	120.7	2.3	0.43	0.0	0.00	0.97	0.52	20	218
30 ISL	11.90	11.90	33.442	25.399	257.5	0.112	4.96	81.0	10.1	1.15	10.5	0.26	0.64	0.42	30	
31	11.77	11.77	33.451	25.430	254.6	0.114	4.71	76.7	10.9	1.22	11.7	0.28	0.60	0.41	31	217
41	11.04	11.04	33.513	25.612	237.5	0.139	3.90	62.5	15.1	1.50	16.7	0.23	0.47	0.47	41	216
50	10.56	10.55	33.597	25.762	223.4	0.160	3.40	54.0	18.7	1.68	20.2	0.08	0.23	0.38	50	215
61	10.19	10.18	33.681	25.891	211.3	0.183	3.15	49.6	21.4	1.78	22.0	0.02	0.10	0.20	61	214
70	10.09	10.08	33.769	25.977	203.4	0.202	2.81	44.2	23.8	1.89	23.3	0.01	0.05	0.14	70	213
75 ISL	10.02	10.01	33.793	26.008	200.6	0.212	2.81	44.1	24.5	1.92	23.7	0.01	0.03	0.12	75	
84	9.88	9.87	33.823	26.055	196.3	0.230	2.80	43.9	25.4	1.94	24.0	0.01	0.02	0.10	84	212
100	9.61	9.60	33.899	26.160	186.7	0.261	2.77	43.1	26.7	1.94	24.5	0.01	0.01	0.07	101	211
119	9.62	9.61	34.034	26.264	177.2	0.295	2.28	35.6	30.2	2.11	26.3	0.01	0.01	0.07	120	210
125 ISL	9.60	9.59	34.059	26.287	175.1	0.306	2.16	33.7	31.1	2.15	26.7	0.01	0.01	0.07	126	
139	9.56	9.54	34.108	26.332	171.2	0.330	1.95	30.4	32.8	2.23	27.4	0.01	0.01	0.06	140	209
150 ISL	9.40	9.38	34.124	26.371	167.7	0.349	1.96	30.4	33.9	2.24	27.8	0.01	0.01	0.06	151	
169	9.12	9.10	34.139	26.428	162.5	0.380	1.98	30.6	35.5	2.26	28.3	0.01	0.00	0.05	170	208
200	9.01	8.99	34.176	26.475	158.7	0.430	1.76	27.1	37.6	2.34	29.1	0.01	0.00	0.04	201	207
228	8.81	8.79	34.241	26.558	151.3	0.473	1.27	19.5	42.3	2.54	30.7	0.01			229	206
250 ISL	8.65	8.62	34.256	26.595	148.1	0.506	1.14	17.4	44.5	2.60	31.4	0.01			252	
269	8.52	8.49	34.257	26.616	146.5	0.534	1.10	16.8	45.9	2.63	31.8	0.01			271	205
300 ISL	8.30	8.27	34.265	26.656	143.1	0.579	0.99	15.0	48.6	2.69	32.5	0.01			302	
318	8.16	8.13	34.268	26.680	141.1	0.605	0.93	14.0	50.2	2.73	33.0	0.01			320	204
379	7.63	7.59	34.279	26.768	133.5	0.688	0.71	10.6	56.8	2.86	34.9	0.01			381	203
400 ISL	7.43	7.39	34.282	26.799	130.8	0.716	0.64	9.5	59.4	2.91	35.6	0.01			403	
435	7.10	7.06	34.287	26.849	126.3	0.761	0.53	7.8	64.0	2.98	36.7	0.01			438	202
500 ISL	6.60	6.55	34.300	26.928	119.4	0.841	0.41	6.0	72.0	3.09	38.3	0.01			503	
520	6.45	6.40	34.304	26.951	117.3	0.865	0.37	5.4	74.5	3.12	38.8	0.01			524	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 29.7 N	119 19.4 W	23/07/03	0931	UTC	1649 m	270	10 kn			1014.5 mb	18.0 C	17.1 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.40	17.40	33.441	24.224	368.7	0.000	6.16	112.5	0.6	0.25	0.0	0.00	0.62	0.26	0	
2	17.40	17.40	33.441	24.224	368.7	0.007	6.16	112.5	0.6	0.25	0.0	0.00	0.62	0.26	2	220
10	16.56	16.56	33.437	24.419	350.4	0.036	6.25	112.3	0.6	0.26	0.0	0.01	0.73	0.32	10	219
20 ISL	12.92	12.92	33.418	25.184	277.8	0.068	5.76	96.1	0.8	0.78	6.4	0.48	1.49	0.67	20	
21	12.54	12.54	33.423	25.262	270.3	0.070	5.67	93.8	0.8	0.85	7.3	0.52	1.54	0.70	21	218
30 ISL	11.37	11.37	33.415	25.476	250.2	0.094	4.56	73.6	11.2	1.34	14.8	0.26	0.93	0.54	30	
31	11.31	11.31	33.415	25.487	249.2	0.096	4.44	71.6	12.5	1.39	15.5	0.22	0.83	0.51	31	217
40	10.72	10.72	33.512	25.668	232.2	0.118	3.83	61.0	16.7	1.56	18.5	0.06	0.23	0.22	40	216
50	10.24	10.23	33.642	25.852	214.8	0.140	3.37	53.2	19.7	1.69	20.4	0.03	0.10	0.14	50	215
60	10.23	10.22	33.781	25.963	204.6	0.161	2.74	43.2	23.0	1.89	22.9	0.02	0.06	0.14	60	214
70	9.88	9.87	33.845	26.072	194.4	0.181	2.60	40.7	25.2	1.94	23.8	0.02	0.03	0.09	70	213
75 ISL	9.82	9.81	33.872	26.103	191.5	0.191	2.67	41.8	25.7	1.94	24.0	0.02	0.02	0.07	75	
85	9.71	9.70	33.904	26.147	187.6	0.210	2.79	43.6	26.3	1.94	24.2	0.02	0.01	0.06	85	212
99	9.80	9.79	34.010	26.215	181.4	0.236	2.37	37.1	28.3	2.04	25.2	0.02	0.01	0.07	100	211
100 ISL	9.79	9.78	34.013	26.219	181.1	0.237	2.37	37.1	28.4	2.04	25.3	0.02	0.01	0.07	101	
119	9.47	9.46	34.050	26.301	173.6	0.271	2.30	35.7	30.6	2.10	26.3	0.02	0.01	0.06	120	210
125 ISL	9.47	9.46	34.075	26.321	171.9	0.281	2.20	34.2	31.4	2.14	26.7	0.02	0.01	0.06	126	
139	9.48	9.46	34.128	26.361	168.4	0.305	1.91	29.7	33.2	2.24	27.6	0.01	0.00	0.06	140	209
150 ISL	9.42	9.40	34.160	26.396	165.3	0.324	1.73	26.9	34.8	2.31	28.2	0.01	0.00	0.06	151	
168	9.24	9.22	34.200	26.457	159.9	0.353	1.50	23.2	37.4	2.40	29.2	0.01	0.01	0.07	169	208
199	8.81	8.79	34.246	26.561	150.4	0.401	1.25	19.2	41.9	2.53	30.6	0.01	0.01	0.05	200	207
200 ISL	8.80	8.78	34.247	26.564	150.2	0.402	1.25	19.2	42.0	2.53	30.6	0.01			201	
228	8.61	8.59	34.256	26.601	147.1	0.444	1.14	17.4	44.3	2.59	31.3	0.01			229	206
250 ISL	8.31	8.28	34.260	26.650	142.7	0.476	1.00	15.2	47.6	2.68	32.3	0.01			252	
268	8.06	8.03	34.263	26.690	139.1	0.501	0.89	13.4	50.5	2.76	33.2	0.02			270	205
300 ISL	7.77	7.74	34.266	26.736	135.2	0.545	0.77	11.5	54.3	2.82	34.3	0.03			302	
317	7.66	7.63	34.267	26.753	133.9	0.568	0.73	10.9	55.9	2.84	34.7	0.03			319	204
377	7.36	7.32	34.274	26.802	130.0	0.647	0.62	9.2	60.1	2.91	35.6	0.02			379	203
400 ISL	7.20	7.16	34.278	26.828	127.8	0.677	0.57	8.4	62.5	2.94	36.1	0.02			403	
438	6.93	6.89	34.286	26.872	124.0	0.725	0.48	7.0	66.5	3.00	37.0	0.02			441	202
500 ISL	6.64	6.59	34.298	26.921	120.1	0.800	0.39	5.7	71.3	3.08	37.9	0.02			504	
520	6.55	6.50	34.302	26.936	118.8	0.824	0.36	5.2	72.8	3.10	38.2	0.02			524	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 19.6 N	119 39.9 W	23/07/03	1327	UTC	79 m	310	09 kn	290 02 05	2	1014.1 mb	17.0 C	16.2 C		8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.05	16.05	33.500	24.583	334.4	0.000	6.12	108.9	0.7	0.32	0.6	0.04	2.96	0.76	0	
2	16.05	16.05	33.500	24.584	334.5	0.007	6.12	108.9	0.7	0.32	0.6	0.04	2.96	0.76	2	209
6	15.62	15.62	33.469	24.656	327.7	0.020	6.20	109.3	0.8	0.35	0.8	0.06	3.40	0.98	6	208
10 ISL	12.68	12.68	33.404	25.220	274.1	0.032	5.18	86.0	6.1	0.99	9.6	0.22	2.61	0.74	10	
11	11.89	11.89	33.405	25.372	259.7	0.035	4.89	79.8	7.6	1.17	12.1	0.26	2.35	0.66	11	207
20 ISL	11.62	11.62	33.386	25.407	256.5	0.058	4.79	77.7	8.7	1.22	12.9	0.23	1.98	0.63	20	
21	11.59	11.59	33.384	25.411	256.2	0.060	4.78	77.5	8.8	1.22	13.0	0.23	1.97	0.63	21	206
30	11.06	11.06	33.608	25.682	230.6	0.082	3.80	61.0	17.1	1.56	17.6	0.17	0.70	0.64	30	205
40	10.88	10.88	33.646	25.744	225.0	0.105	3.60	57.6	18.5	1.62	18.7	0.17	0.79	0.84	40	204
50 ISL	10.44	10.43	33.732	25.888	211.4	0.127	3.23	51.2	21.7	1.76	20.8	0.17	0.45	0.50	50	
51	10.40	10.39	33.740	25.901	210.2	0.129	3.20	50.7	22.0	1.77	21.0	0.17	0.41	0.46	51	203
60	10.26	10.25	33.753	25.936	207.1	0.148	3.07	48.5	23.2	1.81	21.8	0.17	0.29	0.47	60	202
71	10.00	9.99	33.847	26.053	196.2	0.170	2.71	42.6	26.1	1.94	23.7	0.12	0.15	0.30	71	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 9.3 N	120 1.0 W	23/07/03	1810 UTC	1192 m	320 06 kn	280 03 06	2	1015.5 mb	17.0 C	16.3 C	07m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.84	16.84	33.511	24.410	350.9	0.000	6.02	108.8	0.9	0.31	0.1	0.02	2.09	0.44	0	
2 A	16.84	16.84	33.511	24.410	351.0	0.007	6.02	108.8	0.9	0.31	0.1	0.02	2.09	0.44	2	223
6 A	16.74	16.74	33.510	24.433	349.0	0.021	5.99	108.0	0.8	0.32	0.0	0.02	2.12	0.48	6	222
9 A	16.43	16.43	33.524	24.516	341.2	0.031	5.96	106.8	0.8	0.37	0.4	0.03	2.15	0.64	9	221
10 ISL	16.37	16.37	33.526	24.531	339.8	0.035	5.94	106.4	0.8	0.38	0.5	0.03	2.12	0.65	10	
15 A	16.09	16.09	33.538	24.604	333.0	0.052	5.83	103.8	0.9	0.42	1.0	0.05	2.05	0.70	15	220
19 A	14.48	14.48	33.587	24.996	295.7	0.064	5.34	92.1	2.7	0.79	4.8	0.13	2.25	1.13	19	219
20 ISL	14.12	14.12	33.594	25.077	288.0	0.067	5.22	89.4	3.6	0.87	5.8	0.15	2.13	1.08	20	
27 A	12.16	12.16	33.628	25.495	248.4	0.086	4.41	72.5	11.5	1.32	12.6	0.23	0.91	0.75	27	218
30 ISL	11.66	11.66	33.624	25.585	239.8	0.093	4.16	67.7	14.4	1.44	15.0	0.24	0.60	0.62	30	
34	11.11	11.11	33.634	25.693	229.6	0.103	3.80	61.1	18.1	1.59	18.0	0.26	0.33	0.48	34	217
39	10.31	10.31	33.738	25.915	208.6	0.114	3.17	50.1	22.8	1.82	22.0	0.18	0.20	0.37	39	216
49	9.94	9.93	33.853	26.068	194.3	0.134	2.65	41.6	26.4	1.98	24.6	0.13	0.25	0.39	49	215
50 ISL	9.91	9.90	33.859	26.078	193.4	0.136	2.62	41.1	26.6	1.99	24.8	0.12	0.25	0.38	50	
58	9.71	9.70	33.893	26.138	187.9	0.151	2.48	38.7	28.2	2.05	25.7	0.08	0.20	0.33	58	214
68	9.46	9.45	33.949	26.223	180.0	0.169	2.29	35.6	30.3	2.11	26.8	0.06	0.10	0.28	68	213
75 ISL	9.35	9.34	33.961	26.250	177.5	0.182	2.30	35.6	31.1	2.13	27.2	0.05	0.09	0.26	75	
84	9.22	9.21	33.965	26.274	175.4	0.198	2.31	35.7	31.9	2.15	27.6	0.04	0.07	0.23	84	212
99	8.84	8.83	33.984	26.350	168.4	0.223	2.36	36.2	33.4	2.14	28.2	0.05	0.05	0.19	100	211
100 ISL	8.82	8.81	33.986	26.354	168.0	0.225	2.36	36.1	33.5	2.14	28.2	0.05	0.05	0.19	101	
120	8.54	8.53	34.028	26.431	161.1	0.258	2.34	35.6	36.2	2.18	28.8	0.05	0.03	0.16	121	210
125 ISL	8.47	8.46	34.038	26.450	159.4	0.266	2.32	35.3	36.9	2.19	29.0	0.04	0.03	0.15	126	
138	8.28	8.27	34.058	26.495	155.3	0.286	2.27	34.4	38.6	2.23	29.4	0.03	0.04	0.12	139	209
150 ISL	8.15	8.13	34.064	26.519	153.2	0.305	2.25	34.0	39.8	2.25	29.8	0.03	0.03	0.11	151	
168	7.97	7.95	34.067	26.548	150.7	0.332	2.21	33.2	41.6	2.29	30.3	0.03	0.02	0.10	169	208
198	7.66	7.64	34.081	26.605	145.7	0.377	2.04	30.4	45.3	2.38	31.4	0.04	0.01	0.07	199	207
200 ISL	7.66	7.64	34.086	26.609	145.4	0.380	2.00	29.8	45.6	2.39	31.5	0.04			201	
228	7.79	7.77	34.167	26.654	141.7	0.420	1.41	21.1	49.0	2.59	32.7	0.09			229	206
250 ISL	7.84	7.81	34.227	26.694	138.3	0.451	1.03	15.4	51.4	2.71	33.3	0.06			252	
268	7.89	7.86	34.276	26.726	135.7	0.475	0.80	12.0	53.3	2.79	33.8	0.03			270	205
300 ISL	7.60	7.57	34.288	26.778	131.2	0.518	0.70	10.4	57.6	2.88	34.9	0.03			302	
317	7.40	7.37	34.282	26.802	129.1	0.540	0.65	9.7	59.8	2.91	35.5	0.03			319	204
377	7.10	7.06	34.284	26.846	125.6	0.617	0.53	7.8	64.0	2.97	36.6	0.06			380	203
400 ISL	6.94	6.90	34.288	26.871	123.5	0.645	0.49	7.2	66.4	3.01	37.2	0.05			403	
438	6.64	6.60	34.296	26.919	119.3	0.691	0.43	6.3	70.9	3.07	38.1	0.03			441	202
500 ISL	6.18	6.14	34.307	26.988	113.2	0.763	0.35	5.0	78.7	3.13	39.4	0.02			504	
517	6.05	6.00	34.311	27.008	111.4	0.783	0.33	4.7	80.8	3.15	39.8	0.02			521	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 59.1 N	120 21.2 W	23/07/03	2153 UTC	780 m	280 06 kn	280 03 07	2	1015.2 mb	17.9 C	16.8 C	11m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	15.58	15.58	33.025	24.323	359.2	0.000	6.11	107.4	1.2	0.41	0.3	0.05	0.67	0.21	0	
2	15.58	15.58	33.025	24.324	359.3	0.007	6.11	107.4	1.2	0.41	0.3	0.05	0.67	0.21	2	221
10	14.85	14.85	33.020	24.479	344.7	0.035	6.13	106.1	1.5	0.45	0.6	0.08	0.84	0.37	10	219
19	13.42	13.42	32.966	24.735	320.5	0.065	5.91	99.3	3.1	0.60	2.2	0.22	0.69	0.37	19	218
20 ISL	13.31	13.31	32.970	24.760	318.1	0.068	5.89	98.8	3.3	0.63	2.6	0.25	0.66	0.36	20	
30	12.28	12.28	33.016	24.997	295.8	0.099	5.68	93.2	5.2	0.88	6.6	0.43	0.34	0.25	30	217
40	11.09	11.09	32.980	25.188	277.8	0.128	5.42	86.7	8.1	1.05	9.8	0.22	0.26	0.21	40	216
50	10.92	10.91	33.064	25.284	268.9	0.155	5.27	84.1	9.7	1.14	11.6	0.08	0.18	0.18	50	215
60	10.17	10.16	33.131	25.466	251.8	0.181	5.06	79.4	12.0	1.23	13.4	0.08	0.19	0.14	60	214
70	10.33	10.32	33.682	25.869	213.7	0.204	3.55	56.1	21.5	1.74	20.4	0.20	0.17	0.25	70	213
75 ISL	10.29	10.28	33.727	25.911	209.9	0.215	3.21	50.7	22.6	1.80	22.1	0.20	0.16	0.26	75	
85	10.08	10.07	33.789	25.995	202.0	0.236	2.90	45.6	24.8	1.93	23.8	0.19	0.13	0.29	85	212
100	9.68	9.67	33.874	26.129	189.6	0.265	2.50	39.0	27.9	2.04	25.8	0.09	0.10	0.23	100	211
121	9.24	9.23	33.932	26.246	178.8	0.304	2.33	36.0	31.1	2.12	27.3	0.06	0.05	0.19	122	210
125 ISL	9.15	9.14	33.946	26.271	176.5	0.311	2.31	35.6	31.7	2.13	27.6	0.06	0.04	0.20	126	
139	8.82	8.81	33.994	26.361	168.1	0.335	2.28	34.9	34.0	2.17	28.5	0.05	0.03	0.24	140	209
150 ISL	8.60	8.58	34.019	26.415	163.2	0.353	2.26	34.4	35.7	2.19	29.0	0.04	0.03	0.20	151	
169	8.29	8.27	34.048	26.486	156.8	0.384	2.22	33.6	38.4	2.23	29.8	0.04	0.03	0.12	170	208
198	7.94	7.92	34.070	26.556	150.5	0.428	2.09	31.4	42.4	2.32	30.8	0.05	0.02	0.11	199	207
200 ISL	7.93	7.91	34.074	26.560	150.1	0.431	2.06	30.9	42.7	2.33	30.9	0.05			201	
230	7.74	7.72	34.134	26.635	143.5	0.475	1.60	23.9	47.5	2.52	32.5	0.04			231	206
250 ISL	7.48	7.46	34.132	26.672	140.3	0.504	1.52	22.6	50.3	2.57	33.3	0.03			251	
272	7.19	7.16	34.123	26.705	137.2	0.534	1.48	21.8	53.2	2.61	34.0	0.03			274	205
300 ISL	7.00	6.97	34.147	26.751	133.3	0.572	1.26	18.5	57.0	2.71	35.0	0.03			302	
327	6.86	6.83	34.175	26.792	129.7	0.607	1.04	15.2	60.6	2.81	36.0	0.03			329	204
378	6.46	6.43	34.194	26.861	123.6	0.672	0.81	11.8	67.3	2.93	37.7	0.03			380	203
400 ISL	6.48	6.44	34.228	26.886	121.7	0.699	0.67	9.7	68.7	2.99	38.0	0.03			403	
436	6.53	6.49	34.283	26.923	118.8	0.742	0.45	6.5	70.9	3.07	38.3	0.03			439	202
499	6.01	5.97	34.303	27.006	111.3	0.815	0.34	4.9	79.7	3.16	40.0	0.02			502	201
500 ISL	6.00	5.96	34.317	27.019	110.1	0.816									503	

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 39.5 N	121 2.2 W	24/07/03	0321 UTC	3790 m	300 13 kn	280 03 07	2	1013.0 mb	17.2 C	16.5 C		8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.08	17.08	32.925	23.904	399.2	0.000	5.71	103.3	1.8	0.37	0.0	0.00	0.33	0.11	0	
2	17.08	17.08	32.925	23.904	399.2	0.008	5.71	103.3	1.8	0.37	0.0	0.00	0.33	0.11	2	221
10	17.08	17.08	32.925	23.905	399.5	0.040	5.70	103.1	1.8	0.37	0.0	0.00	0.33	0.11	10	219
20	16.97	16.97	32.922	23.929	397.5	0.080	5.71	103.1	1.8	0.37	0.0	0.00	0.43	0.16	20	218
30	15.83	15.83	32.965	24.223	369.7	0.118	5.90	104.1	1.8	0.43	0.1	0.03	0.92	0.35	30	217
40	14.90	14.89	32.983	24.441	349.2	0.154	5.99	103.8	1.7	0.48	0.7	0.08	0.67	0.31	40	216
50	14.55	14.54	33.003	24.531	340.9	0.189	5.89	101.3	2.0	0.55	1.2	0.14	0.63	0.34	50	215
58	13.86	13.85	33.034	24.699	325.0	0.215	5.66	96.0	3.1	0.67	2.6	0.48	0.36	0.30	58	214
70	13.27	13.26	33.060	24.839	312.0	0.253	5.56	93.2	4.0	0.74	4.6	0.54	0.19	0.19	70	213
75 ISL	13.31	13.30	33.121	24.879	308.4	0.269	5.62	94.3	4.0	0.76	4.5	0.49	0.14	0.18	75	
84	13.39	13.38	33.248	24.961	300.8	0.296	5.69	95.7	3.9	0.81	4.4	0.37	0.09	0.17	84	212
100	11.49	11.48	33.156	25.254	273.0	0.342	5.19	83.8	8.8	1.08	10.2	0.16	0.08	0.17	100	211
120	9.88	9.87	33.161	25.539	246.0	0.394	4.95	77.2	13.0	1.27	14.3	0.02	0.05	0.12	121	210
125 ISL	9.67	9.66	33.178	25.587	241.5	0.406	4.94	76.7	13.6	1.29	14.8	0.02	0.05	0.11	126	
141	9.31	9.29	33.286	25.730	228.2	0.444	4.77	73.5	15.9	1.37	16.4	0.02	0.04	0.09	142	209
150 ISL	9.33	9.31	33.419	25.831	218.8	0.464	4.32	66.7	18.3	1.50	18.4	0.02	0.03	0.08	151	
171	9.45	9.43	33.744	26.066	197.0	0.508	3.17	49.1	24.5	1.84	23.5	0.01	0.01	0.07	172	208
198	8.96	8.94	33.952	26.307	174.5	0.558	2.52	38.7	31.4	2.08	27.3	0.01	0.01	0.04	199	207
200 ISL	8.92	8.90	33.961	26.321	173.2	0.561	2.49	38.2	31.8	2.09	27.5	0.01			201	
229	8.45	8.43	34.047	26.462	160.2	0.610	2.15	32.7	37.4	2.25	29.9	0.01			230	206
250 ISL	8.19	8.16	34.063	26.514	155.6	0.643	2.06	31.1	40.2	2.31	30.8	0.01			251	
269	7.96	7.93	34.063	26.548	152.5	0.672	2.00	30.0	42.6	2.36	31.5	0.01			270	205
300 ISL	7.46	7.43	34.078	26.633	144.8	0.718	1.74	25.8	48.5	2.50	33.3	0.01			302	
318	7.19	7.16	34.090	26.680	140.4	0.744	1.56	23.0	51.9	2.59	34.3	0.01			320	204
379	6.82	6.78	34.147	26.776	132.0	0.827	1.08	15.8	59.7	2.79	36.2	0.01			381	203
400 ISL	6.64	6.60	34.165	26.815	128.5	0.854	0.92	13.4	63.3	2.87	37.1	0.01			402	
436	6.33	6.29	34.196	26.880	122.6	0.899	0.67	9.7	69.4	2.99	38.5	0.01			439	202
500 ISL	6.00	5.96	34.244	26.961	115.5	0.976	0.46	6.6	77.1	3.11	39.8	0.01			503	
517	5.91	5.86	34.257	26.983	113.6	0.995	0.41	5.9	79.1	3.14	40.1	0.01			520	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 19.6 N	121 43.0 W	24/07/03	0847 UTC	4029 m	330 10 kn			1014.0 mb	17.0 C	16.2 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.99	16.99	32.925	23.926	397.1	0.000	5.70	102.9	1.8	0.38	0.0	0.00	0.15	0.02	0	
2	16.99	16.99	32.925	23.926	397.2	0.008	5.70	102.9	1.8	0.38	0.0	0.00	0.15	0.02	2	220
10 ISL	16.99	16.99	32.925	23.926	397.4	0.040	5.70	102.9	1.7	0.37	0.0	0.00	0.14	0.02	10	
11	16.99	16.99	32.925	23.926	397.5	0.044	5.70	102.9	1.7	0.37	0.0	0.00	0.14	0.02	11	219
20 ISL	16.68	16.68	32.943	24.012	389.5	0.079	5.77	103.6	1.4	0.39	0.0	0.00	0.20	0.05	20	
21	16.62	16.62	32.946	24.028	388.0	0.083	5.78	103.6	1.4	0.39	0.0	0.00	0.21	0.05	21	218
30 ISL	15.62	15.62	32.984	24.284	363.9	0.117	5.97	105.0	1.1	0.45	0.2	0.04	0.36	0.11	30	
31	15.51	15.51	32.990	24.313	361.1	0.120	5.99	105.1	1.1	0.46	0.2	0.04	0.37	0.12	31	217
41	15.21	15.20	33.068	24.439	349.4	0.156	6.05	105.5	0.9	0.49	0.5	0.08	0.37	0.17	41	216
50	14.35	14.34	33.080	24.633	331.2	0.187	6.06	103.9	0.9	0.56	1.5	0.16	0.31	0.15	50	215
59	13.98	13.97	33.103	24.728	322.3	0.216	5.93	100.9	1.3	0.66	2.3	0.23	0.25	0.20	59	214
70	13.59	13.58	33.172	24.861	309.9	0.251	5.73	96.8	2.6	0.75	3.7	0.61	0.15	0.15	70	213
75 ISL	13.17	13.16	33.158	24.935	303.0	0.266	5.59	93.6	3.6	0.82	5.2	0.54	0.13	0.13	75	
84	12.36	12.35	33.134	25.075	289.8	0.293	5.36	88.2	5.6	0.96	7.9	0.31	0.10	0.12	84	212
100	11.60	11.59	33.243	25.302	268.5	0.337	5.17	83.8	9.1	1.16	10.2	0.27	0.08	0.14	100	211
120	10.10	10.09	33.375	25.669	233.7	0.388	4.17	65.4	15.5	1.52	17.8	0.03	0.04	0.06	121	210
125 ISL	9.92	9.91	33.442	25.752	225.9	0.399	3.96	61.9	17.1	1.59	19.1	0.03	0.03	0.05	126	
140	9.58	9.56	33.644	25.966	205.9	0.432	3.47	53.9	21.2	1.76	22.0	0.03	0.01	0.03	141	209
150 ISL	9.36	9.34	33.721	26.062	196.9	0.452	3.35	51.8	22.9	1.81	23.0	0.03	0.01	0.02	151	
171	8.99	8.97	33.831	26.208	183.4	0.492	3.23	49.6	25.9	1.87	24.3	0.02	0.01	0.01	172	208
200	8.65	8.63	33.974	26.373	168.1	0.543	2.73	41.6	31.4	2.05	27.2	0.02	0.01	0.00	201	207
226	8.34	8.32	34.035	26.469	159.4	0.585	2.41	36.5	35.8	2.18	29.1	0.02			227	206
250 ISL	8.10	8.07	34.062	26.526	154.3	0.623	2.19	33.0	39.0	2.28	30.3	0.02			251	
269	7.91	7.88	34.074	26.564	151.0	0.652	2.03	30.5	41.4	2.36	31.2	0.02			270	205
300 ISL	7.55	7.52	34.095	26.633	144.8	0.698	1.75	26.0	46.1	2.50	32.8	0.02			302	
317	7.35	7.32	34.104	26.669	141.6	0.722	1.60	23.7	48.8	2.57	33.7	0.02			319	204
380	6.61	6.58	34.121	26.784	131.1	0.808	1.19	17.3	59.0	2.78	36.6	0.01			382	203
400 ISL	6.46	6.42	34.134	26.814	128.4	0.834	1.06	15.4	62.0	2.84	37.3	0.01			402	
440	6.22	6.18	34.165	26.870	123.5	0.884	0.83	12.0	68.1	2.95	38.4	0.01			443	202
500 ISL	5.84	5.80	34.217	26.959	115.5	0.956	0.56	8.0		3.09	40.0	0.01			503	
512	5.77	5.73	34.227	26.976	114.0	0.970	0.50	7.1		3.12	40.3	0.01			515	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 59.3 N	122 23.8 W	24/07/03	1416 UTC	4165 m	310 09 kn	320 03 06	2	1014.9 mb	17.0 C	16.4 C		8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.90	16.90	32.650	23.736	415.3	0.000	5.73	103.1	1.8	0.38	0.0	0.00	0.17	0.05	0	
2	16.90	16.90	32.650 D	23.736	415.3	0.008	5.73	103.1	1.8	0.38	0.0	0.00	0.17	0.05	2	220
10 ISL	16.91	16.91	32.651	23.734	415.7	0.042	5.72	103.0	1.8	0.37	0.0	0.00	0.18	0.05	10	
16	16.91	16.91	32.652	23.735	415.8	0.066	5.72	103.0	1.7	0.37	0.0	0.00	0.18	0.05	16	219
20 ISL	16.74	16.74	32.630	23.758	413.8	0.083	5.75	103.1	1.7	0.37	0.0	0.00	0.21	0.06	20	
30	16.31	16.31	32.605	23.838	406.4	0.124	5.83	103.7	1.6	0.37	0.0	0.00	0.28	0.09	30	218
45	16.37	16.36	32.789	23.966	394.7	0.184	5.87	104.6	1.9	0.37	0.0	0.00	0.28	0.10	45	217
50 ISL	15.79	15.78	32.795	24.102	381.9	0.204	5.91	104.1	1.9	0.38	0.0	0.00	0.33	0.14	50	
54	15.29	15.28	32.797	24.214	371.3	0.219	5.95	103.8	1.9	0.38	0.0	0.00	0.37	0.17	54	216
66	14.72	14.71	32.837	24.368	356.9	0.262	5.98	103.1	2.1	0.39	0.0	0.00	0.38 A	0.21 A	66	215
74	14.30	14.29	32.963	24.554	339.4	0.290	5.87	100.5	2.4	0.42	0.0	0.00	0.27	0.26	74	214
75 ISL	14.23	14.22	32.968	24.572	337.6	0.294	5.86	100.1	2.5	0.43	0.0	0.01	0.27	0.26	75	
86	13.36	13.35	32.951	24.737	322.1	0.330	5.78	97.0	3.3	0.57	0.8	0.10	0.32	0.25	86	213
95	12.62	12.61	32.882	24.830	313.4	0.358	5.70	94.2	3.8	0.63	2.4	0.18	0.28	0.22	95	212
100 ISL	12.15	12.14	32.873	24.912	305.6	0.374	5.65	92.4	4.3	0.69	3.7	0.15	0.25	0.20	100	
108	11.44	11.43	32.891	25.058	291.8	0.398	5.54	89.2	5.5	0.81	6.0	0.06	0.19	0.17	108	211
124	10.44	10.43	32.993	25.313	267.6	0.443	5.26	83.0	9.3	1.08	10.6	0.02	0.08	0.10	124	210
125 ISL	10.38	10.37	33.007	25.335	265.6	0.445	5.23	82.4	9.6	1.10	10.9	0.02	0.08	0.10	126	
144	9.51	9.49	33.320	25.724	228.8	0.492	4.62	71.5	16.1	1.42	16.8	0.02	0.02	0.05	145	209
150 ISL	9.45	9.43	33.428	25.818	220.0	0.506	4.37	67.6	18.0	1.51	18.3	0.02	0.02	0.05	151	
170	9.26	9.24	33.699	26.061	197.3	0.547	3.56	54.9	23.8	1.77	22.5	0.02	0.01	0.05	171	208
200	8.92	8.90	33.915	26.285	176.6	0.604	2.83	43.4	29.9	2.00	26.2	0.02	0.00	0.04	201	207
231	8.54	8.52	34.025	26.431	163.3	0.656	2.39	36.4	35.7	2.17	28.8	0.01			232	206
250 ISL	8.30	8.27	34.054	26.490	157.9	0.687	2.19	33.1	38.9	2.26	30.0	0.01			251	
270	8.04	8.01	34.069	26.541	153.3	0.718	2.01	30.2	42.1	2.35	31.2	0.01			271	205
300 ISL	7.62	7.59	34.088	26.618	146.3	0.763	1.74	25.9	47.4	2.49	32.9	0.02			302	
320	7.35	7.32	34.098	26.664	142.0	0.792	1.56	23.1	51.0	2.58	33.9	0.02			322	204
379	6.75	6.71	34.142	26.782	131.4	0.872	1.06	15.5	61.2	2.82	36.7	0.02			381	203
400 ISL	6.56	6.52	34.160	26.821	127.8	0.899	0.90	13.1	64.8	2.91	37.6	0.02			402	
435	6.27	6.23	34.189	26.882	122.3	0.943	0.68	9.8	70.6	3.04	38.9	0.02			438	202
500 ISL	5.72	5.68	34.215	26.973	114.1	1.020	0.47	6.7	81.1	3.14	40.8	0.02			503	
514	5.60	5.56	34.221	26.992	112.3	1.036	0.43	6.1	83.4	3.16	41.2	0.02			517	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 39.7 N	123 4.8 W	24/07/03	1923 UTC	4143 m	340 10 kn	340 03 07	2	1015.6 mb	19.0 C	17.9 C	21m	8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.51	17.51	32.728	23.652	423.3	0.000	5.61	102.2	2.1	0.38	0.0	0.00	0.13	0.03	0	
2	17.51	17.51	32.728	23.652	423.3	0.008	5.61	102.2	2.1	0.38	0.0	0.00	0.13	0.03	2	222
10 ISL	17.48	17.48	32.731	23.662	422.7	0.042	5.62	102.3	2.0	0.38	0.0	0.00	0.13	0.03	10	
13	17.45	17.45	32.727	23.666	422.4	0.055	5.63	102.5	2.0	0.38	0.0	0.00	0.13	0.03	13	220
20 ISL	17.34	17.34	32.731	23.695	419.8	0.084	5.64	102.4	1.9	0.38	0.0	0.00	0.15	0.04	20	
29	17.12	17.12	32.736	23.751	414.7	0.122	5.67	102.5	1.8	0.37	0.0	0.00	0.21	0.06	29	219
30 ISL	17.09	17.09	32.736	23.758	414.1	0.126	5.68	102.6	1.8	0.37	0.0	0.00	0.22	0.06	30	
41	16.71	16.70	32.732	23.844	406.2	0.171	5.74	103.0	1.8	0.37	0.0	0.00	0.33	0.10	41	218
50	16.44	16.43	32.736	23.910	400.3	0.208	5.78	103.1	1.8	0.36	0.0	0.00	0.47	0.16	50	217
57	15.93	15.92	32.775	24.055	386.5	0.235	5.86	103.5	1.9	0.38	0.0	0.00	0.50	0.22	57	216
68	15.45	15.44	32.817	24.194	373.6	0.277	5.91	103.4	2.1	0.40	0.0	0.00	0.39	0.20	68	215
75 ISL	14.76	14.75	32.828	24.353	358.6	0.303	5.91	102.0	2.3	0.45	0.1	0.01	0.30	0.24	75	
80	14.29	14.28	32.827	24.451	349.3	0.320	5.91	101.0	2.4	0.49	0.2	0.03	0.25	0.26	80	214
88	14.00	13.99	32.798	24.489	345.9	0.348	5.88	99.9	2.7	0.50	0.5	0.08	0.24	0.25	88	213
95	13.86	13.85	32.893	24.592	336.3	0.372	5.83	98.8	2.8	0.52	0.8	0.14	0.22	0.20	95	212
100 ISL	13.52	13.51	32.916	24.679	328.1	0.389	5.78	97.3	3.2	0.57	1.8	0.16	0.19	0.18	100	
111	12.46	12.45	32.926	24.895	307.6	0.423	5.63	92.7	4.7	0.74	4.9	0.20	0.13	0.14	111	211
125	10.95	10.93	32.967	25.205	278.1	0.464	5.36	85.5	7.8	0.99	9.2	0.02	0.07	0.09	125	210
145	9.82	9.80	33.148	25.539	246.5	0.517	4.89	76.2	13.5	1.31	14.6	0.02	0.03	0.07	146	209
150 ISL	9.64	9.62	33.228	25.631	237.8	0.529	4.75	73.7	14.9	1.37	15.7	0.02	0.02	0.06	151	
168	9.22	9.20	33.524	25.931	209.6	0.569	4.18	64.4	19.8	1.57	19.4	0.02	0.01	0.04	169	208
200 ISL	9.13	9.11	33.826	26.182	186.4	0.633	3.08	47.4	26.9	1.90	24.4	0.02	0.00	0.03	201	
202	9.12	9.10	33.837	26.192	185.5	0.636	3.02	46.5	27.3	1.92	24.7	0.02	0.00	0.03	203	207
230	8.83	8.81	33.987	26.356	170.5	0.686	2.45	37.5	33.1	2.12	27.7	0.02			231	206
250 ISL	8.56	8.53	34.040	26.440	162.8	0.720	2.19	33.3	36.9	2.24	29.3	0.02			251	
272	8.25	8.22	34.066	26.507	156.6	0.755	2.00	30.2	40.6	2.34	30.7	0.01			273	205
300 ISL	7.91	7.88	34.078	26.568	151.2	0.798	1.89	28.4	44.2	2.41	31.8	0.01			302	
320	7.66	7.63	34.076	26.603	148.1	0.828	1.85	27.6	46.6	2.45	32.4	0.01			322	204
378	6.83	6.79	34.076	26.719	137.4	0.911	1.55	22.7	56.4	2.65	35.1	0.02			380	203
400 ISL	6.60	6.56	34.091	26.762	133.5	0.940	1.36	19.8	60.4	2.74	36.1	0.02			402	
436	6.26	6.22	34.120	26.829	127.3	0.987	1.04	15.0	67.2	2.87	37.7	0.02			439	202
500 ISL	5.64	5.60	34.150	26.931	117.9	1.066	0.71	10.1	79.4	3.04	40.2	0.02			503	
504	5.60	5.56	34.152	26.937	117.3	1.070	0.69	9.8	80.2	3.05	40.4	0.02			507	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 29.0 N	117 46.1 W	22/07/03	1859 UTC	69 m	220 03 kn	280 01 05	2	1014.0 mb	21.1 C	19.6 C	07m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	20.50	20.50	33.505	23.491	438.6	0.000	6.01	116.4	1.1	0.17	0.0	0.00	1.03	0.38	0	
2 A	20.50	20.50	33.505	23.491	438.7	0.009	6.01	116.4	1.1	0.17	0.0	0.00	1.03	0.38	2	211
4 A	19.35	19.35	33.476	23.769	412.2	0.017	6.13	116.2	1.2	0.24	0.0	0.00	0.52	0.13	4	209
10 A	15.74	15.74	33.286	24.489	343.7	0.040	6.65	117.4	1.3	0.31	0.0	0.00	0.65	0.19	10	208
13 A	14.46	14.46	33.299	24.778	316.3	0.050	6.74	116.0	1.4	0.37	0.0	0.00	0.89	0.32	13	207
19 A	13.48	13.48	33.276	24.963	298.9	0.068	6.26	105.6	2.1	0.55	2.1	0.11	1.37	0.58	19	206
20 ISL	13.34	13.34	33.280	24.994	295.9	0.071	6.13	103.1	2.5	0.60	2.8	0.16	1.34	0.58	20	
27 A	12.58	12.58	33.317	25.173	279.0	0.091	5.30	87.7	5.5	0.94	7.4	0.48	1.12	0.57	27	205
30 ISL	12.34	12.34	33.317	25.219	274.7	0.100	5.24	86.3	6.4	1.01	8.3	0.51	0.95	0.55	30	
34	12.11	12.11	33.321	25.266	270.3	0.111	5.15	84.4	7.4	1.07	9.0	0.55	0.70	0.50	34	204
39	11.93	11.93	33.359	25.329	264.4	0.124	5.05	82.5	8.5	1.16	9.9	0.57	0.43	0.42	39	203
50	11.23	11.22	33.432	25.515	247.0	0.152	4.15	66.8	13.1	1.41	15.9	0.19	0.19	0.22	50	202
60	10.93	10.92	33.485	25.610	238.1	0.176	3.83	61.3	16.1	1.60	18.0	0.20	0.13	0.27	60	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 25.0 N	117 54.5 W	22/07/03	1439 UTC	618 m	020 01 kn	220 01 05	2	1013.9 mb	19.6 C	18.6 C		8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	21.09	21.09	33.523	23.347	452.4	0.000	5.73	112.2	1.1	0.16	0.0	0.00	0.85	0.27	0	
2	21.09	21.09	33.523	23.347	452.4	0.009	5.73	112.2	1.1	0.16	0.0	0.00	0.85 A	0.27 A	2	220
10 ISL	18.28	18.28	33.433	24.005	389.9	0.043	6.25	116.1	1.1	0.26	0.1	0.00	0.49	0.15	10	
11	17.75	17.75	33.415	24.121	378.9	0.047	6.33	116.3	1.1	0.28	0.1	0.00	0.45	0.14	11	219
20 ISL	13.41	13.41	33.082	24.827	311.8	0.078	6.33	106.5	0.7	0.43	0.6	0.06	1.04	0.45	20	
21	13.03	13.03	33.064	24.889	305.9	0.081	6.33	105.6	0.7	0.46	0.7	0.07	1.13	0.50	21	218
30	13.00	13.00	33.377	25.137	282.5	0.107	5.49	91.7	2.3	0.95	7.1	0.38	1.59	0.79	30	217
41	12.52	12.51	33.382	25.235	273.5	0.138	5.16	85.3	6.5	1.10	9.1	0.47	1.52	0.81	41	216
50 ISL	11.50	11.49	33.332	25.388	259.0	0.162	4.77	77.2	10.4	1.26	13.5	0.20	0.66	0.41	50	
51	11.38	11.37	33.330	25.408	257.1	0.164	4.72	76.2	10.8	1.28	14.0	0.17	0.56	0.36	51	215
59	10.83	10.82	33.403	25.564	242.5	0.184	4.18	66.7	14.1	1.43	16.5	0.06	0.16	0.19	59	214
70	10.46	10.45	33.485	25.693	230.5	0.210	3.91	61.9	16.1	1.51	17.8	0.04	0.07	0.12	70	213
75 ISL	10.22	10.21	33.503	25.748	225.3	0.222	3.92	61.7	16.9	1.52	18.2	0.04	0.05	0.11	75	
86	9.76	9.75	33.544	25.857	215.1	0.246	3.96	61.8	18.5	1.55	19.1	0.05	0.03	0.09	86	212
100	9.69	9.68	33.652	25.953	206.2	0.275	3.68	57.3	20.4	1.64	20.4	0.05	0.03	0.12	100	211
120	10.10	10.09	33.913	26.089	193.9	0.315	2.55	40.2	25.5	1.96	23.9	0.03	0.01	0.06	121	210
125 ISL	10.13	10.12	33.959	26.120	191.1	0.325	2.31	36.4	26.8	2.04	24.6	0.03	0.01	0.06	126	
139	10.21	10.19	34.078	26.199	183.9	0.351	1.81	28.6	29.9	2.20	26.1	0.03	0.01	0.07	140	209
150 ISL	10.00	9.98	34.099	26.252	179.1	0.371	1.88	29.6	31.0	2.20	26.6	0.03	0.01	0.07	151	
169	9.56	9.54	34.099	26.325	172.4	0.405	2.00	31.2	32.2	2.20	27.1	0.04	0.01	0.06	170	208
200 ISL	9.44	9.42	34.173	26.404	165.6	0.457	1.65	25.6	35.5	2.33	28.6	0.04	0.01	0.06	201	
201	9.44	9.42	34.176	26.406	165.4	0.459	1.63	25.3	35.6	2.34	28.7	0.04	0.01	0.06	202	207
228	9.24	9.21	34.221	26.474	159.5	0.503	1.39	21.5							229	206
250 ISL	9.13	9.10	34.243	26.509	156.5	0.537	1.28	19.8	39.8	2.48	30.2	0.03			251	
266	9.04	9.01	34.253	26.532	154.7	0.562	1.23	19.0	41.1	2.52	30.5	0.03			268	205
300 ISL	8.76	8.73	34.265	26.586	150.1	0.614	1.13	17.3	43.9	2.59	31.2	0.03			302	
316	8.60	8.57	34.267	26.613	147.8	0.638	1.09	16.6	45.3	2.62	31.5	0.03			318	204
377	7.91	7.87	34.267	26.717	138.5	0.725	0.89	13.4	52.1	2.77	33.7	0.03			379	203
400 ISL	7.69	7.65	34.276	26.757	135.0	0.757	0.77	11.5	54.9	2.83	34.4	0.03			403	
438	7.38	7.34	34.295	26.817	129.7	0.807	0.58	8.6	59.5	2.92	35.6	0.03			441	202
500 ISL	6.98	6.93	34.313	26.887	123.7	0.886	0.42	6.2	66.2	3.03	37.2	0.03			503	
521	6.84	6.79	34.320	26.912	121.5	0.911	0.37	5.4	68.5	3.07	37.8	0.03			525	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 15.0 N	118 15.4 W	22/07/03	1049 UTC	381 m	280 06 kn			1013.8 mb	18.5 C	17.5 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	19.40	19.40	33.518	23.788	410.3	0.000	5.81	110.3	1.1	0.23	0.1	0.00	0.43	0.14	0	
2	19.40	19.40	33.518	23.788	410.3	0.008	5.81	110.3	1.1	0.23	0.1	0.00	0.43	0.14	2	217
10 ISL	18.61	18.61	33.504	23.978	392.5	0.040	6.05	113.1	1.0	0.25	0.2	0.00	0.61	0.19	10	
12	18.41	18.41	33.502	24.026	388.0	0.048	6.13	114.2	1.0	0.26	0.2	0.00	0.68	0.20	12	216
20 ISL	15.17	15.17	33.380	24.688	325.1	0.077	6.29	109.9	1.7	0.42	1.0	0.05	0.99	0.40	20	
21	14.76	14.76	33.372	24.770	317.3	0.080	6.29	108.9	1.8	0.45	1.2	0.06	1.03	0.43	21	215
30 ISL	13.63	13.63	33.365	25.001	295.5	0.107	5.94	100.5	2.2	0.72	4.7	0.23	1.13	0.62	30	
31	13.59	13.59	33.366	25.010	294.6	0.110	5.88	99.4	2.3	0.75	5.1	0.25	1.13	0.63	31	214
41	12.99	12.98	33.426	25.177	279.0	0.139	5.36	89.5	4.9	1.06	8.2	0.37	1.16	0.58	41	213
50	12.13	12.12	33.444	25.358	262.0	0.163	5.03	82.5	9.3	1.19	10.9	0.54	0.60	0.38	50	212
60	11.61	11.60	33.431	25.445	253.9	0.189	4.68	75.9	11.8	1.32	14.6	0.32	0.29	0.27	60	211
70	10.53	10.52	33.350	25.575	241.6	0.214	4.32	68.4	14.7	1.44	16.9	0.06	0.13	0.17	70	210
75 ISL	10.43	10.42	33.390	25.624	237.1	0.226	4.18	66.1	15.7	1.49	17.8	0.06	0.09	0.15	75	
85	10.23	10.22	33.480	25.728	227.4	0.249	3.91	61.6	17.8	1.59	19.5	0.05	0.05	0.13	85	209
99	9.74	9.73	33.672	25.961	205.5	0.279	3.39	52.9	22.8	1.79	22.9	0.04	0.02	0.08	99	208
100 ISL	9.72	9.71	33.684	25.973	204.3	0.282	3.36	52.4	23.1	1.80	23.1	0.04	0.02	0.08	100	
120	9.40	9.39	33.871	26.172	185.8	0.321	2.78	43.1	27.6	1.96	25.2	0.04	0.01	0.08	121	207
125 ISL	9.35	9.34	33.907	26.209	182.5	0.330	2.65	41.0	28.7	2.00	25.7	0.04	0.01	0.08	126	
141	9.22	9.20	33.998	26.301	174.0	0.358	2.29	35.4					0.01	0.08	142	206
150 ISL	9.14	9.12	34.034	26.342	170.3	0.374	2.17	33.5	33.1	2.16	27.9	0.03	0.01	0.07	151	
171	8.97	8.95	34.088	26.412	164.0	0.409	2.03	31.2	35.8	2.25	29.0	0.03	0.01	0.06	172	205
199	8.76	8.74	34.116	26.467	159.3	0.454	2.02	30.9	37.4	2.28	29.2	0.03	0.01	0.07	200	204
200 ISL	8.75	8.73	34.116	26.469	159.1	0.456	2.02	30.9	37.5	2.28	29.2	0.03			201	
229	8.37	8.35	34.129	26.538	153.0	0.501	1.92	29.1	41.1	2.37	30.4	0.03			230	203
250 ISL	8.27	8.24	34.175	26.590	148.4	0.533	1.61	24.4	43.9	2.49	31.3	0.03			251	
272	8.23	8.20	34.229	26.638	144.2	0.565	1.25	18.9	46.7	2.62	32.1	0.03			274	202
300 ISL	8.09	8.06	34.258	26.682	140.5	0.605	1.02	15.4	49.8	2.71	33.0	0.03			302	
319	8.00	7.97	34.278	26.712	138.0	0.631	0.86	12.9	51.9	2.77	33.6	0.03			321	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 11.1 N	118 23.5 W	22/07/03	0730 UTC	1181 m	300 13 kn			1014.5 mb	18.8 C	18.0 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	19.71	19.71	33.520	23.710	417.7	0.000	5.74	109.6	0.8	0.22	0.2	0.00	0.51	0.15	0	
2	19.71	19.71	33.520	23.710	417.8	0.008	5.74	109.6	0.8	0.22	0.2	0.00	0.51	0.15	2	220
10	19.47	19.47	33.511	23.765	412.8	0.042	5.84	111.0	0.8	0.23	0.1	0.00	0.48	0.16	10	219
20	13.58	13.58	33.254	24.925	302.4	0.077	5.93	100.2	2.5	0.63	3.3	0.19	1.53	0.70	20	218
30	13.07	13.07	33.209	24.993	296.2	0.107	5.74	95.9	3.7	0.76	5.3	0.24	1.07	0.64	30	217
40	12.78	12.77	33.364	25.171	279.6	0.136	5.28	87.8	5.6	1.08	9.0	0.44	1.12	0.55	40	216
50	12.62	12.61	33.468	25.283	269.2	0.164	4.97	82.4	9.6	1.21	10.9	0.53	0.93	0.57	50	215
60	11.10	11.09	33.331	25.460	252.4	0.190	4.72	75.7	11.9	1.28	13.9	0.39	0.13	0.18	60	214
70	10.40	10.39	33.412	25.646	234.9	0.214	4.29	67.8	15.9	1.49	17.8	0.07	0.11	0.14	70	213
75 ISL	10.25	10.24	33.471	25.718	228.2	0.226	4.10	64.6	17.5	1.57	19.1	0.06	0.09	0.12	75	
85	10.09	10.08	33.586	25.835	217.2	0.248	3.75	58.9	20.1	1.70	21.1	0.03	0.04	0.10	85	212
100	9.72	9.71	33.695	25.982	203.5	0.279	3.29	51.3	23.6	1.83	23.2	0.03	0.02	0.08	100	211
120	9.69	9.68	33.880	26.132	189.7	0.319	2.58	40.3	27.6	2.02	25.4	0.03	0.02	0.08	121	210
125 ISL	9.55	9.54	33.900	26.171	186.1	0.328	2.60	40.4	28.2	2.02	25.6	0.03	0.02	0.07	126	
139	9.13	9.11	33.942	26.272	176.7	0.353	2.72	41.9	29.7	2.00	25.9	0.03	0.01	0.05	140	209
150 ISL	9.09	9.07	34.007	26.329	171.5	0.373	2.47	38.1	31.9	2.09	26.9	0.03	0.01	0.05	151	
170	9.01	8.99	34.092	26.409	164.3	0.406	1.91	29.4	36.0	2.28	28.8	0.02	0.00	0.06	171	208
199	8.78	8.76	34.151	26.492	157.0	0.453	1.65	25.3	39.6	2.39	30.0	0.02	0.00	0.05	200	207
200 ISL	8.77	8.75	34.153	26.495	156.7	0.454	1.64	25.1	39.7	2.39	30.0	0.02			201	
226	8.48	8.46	34.200	26.577	149.3	0.494	1.50	22.8	43.1	2.49	30.7	0.02			227	206
250 ISL	8.23	8.20	34.223	26.633	144.3	0.529	1.30	19.7	46.5	2.59	31.7	0.02			251	
268	8.07	8.04	34.237	26.668	141.2	0.555	1.14	17.2	49.0	2.66	32.5	0.02			270	205
300 ISL	7.92	7.89	34.278	26.723	136.5	0.600	0.85	12.8	52.8	2.78	33.5	0.02			302	
317	7.86	7.83	34.297	26.747	134.5	0.623	0.72	10.8	54.5	2.83	33.9	0.02			319	204
376	7.45	7.41	34.297	26.807	129.6	0.700	0.61	9.1	59.3	2.91	35.3	0.02			378	203
400 ISL	7.32	7.28	34.302	26.830	127.7	0.731	0.55	8.2	61.2	2.95	35.8	0.02			403	
436	7.12	7.08	34.311	26.865	124.8	0.777	0.46	6.8	64.1	3.00	36.5	0.02			439	202
500 ISL	6.71	6.66	34.324	26.932	119.1	0.855	0.35	5.1	70.4	3.09	38.0	0.02			503	
519	6.59	6.54	34.329	26.952	117.3	0.877	0.32	4.7	72.3	3.12	38.4	0.02			523	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 55.1 N	118 56.4 W	22/07/03	0240	UTC	1692 m	290	18 kn	280 03 05	2	1014.4 mb	17.3 C	17.0 C		8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	19.15	19.15	33.544	23.872	402.3	0.000	5.73	108.2	0.9	0.23	0.1	0.00	0.42	0.14	0	
2	19.15	19.15	33.544	23.872	402.3	0.008	5.73	108.2	0.9	0.23	0.1	0.00	0.42	0.14	2	221
10 ISL	18.87	18.87	33.542	23.942	396.0	0.040	5.83	109.5	0.9	0.23	0.1	0.00	0.46	0.14	10	
11	18.83	18.83	33.542	23.952	395.1	0.044	5.84	109.7	0.9	0.23	0.1	0.00	0.46	0.14	11	219
20 ISL	15.56	15.56	33.538	24.723	321.7	0.076	6.30	111.0	1.7	0.43	1.7	0.03	0.83	0.40	20	
22	14.75	14.75	33.551	24.910	304.0	0.082	6.34	109.9	1.9	0.51	2.4	0.04	0.99	0.48	22	218
30 ISL	13.29	13.29	33.537	25.203	276.3	0.106	5.58	93.9	4.3	0.94	7.9	0.43	2.25	0.89	30	
32	12.97	12.97	33.521	25.255	271.4	0.111	5.30	88.6	5.5	1.06	9.6	0.49	2.39	0.93	32	217
40	10.85	10.85	33.429	25.580	240.5	0.132	4.22	67.4	14.5	1.46	17.2	0.06	0.29	0.26	40	216
50 ISL	10.33	10.32	33.521	25.743	225.3	0.155	3.85	60.8	18.0	1.61	19.8	0.02	0.13	0.14	50	
51	10.28	10.27	33.521	25.751	224.5	0.157	3.84	60.6	18.1	1.61	19.8	0.02	0.11	0.13	51	215
61	10.03	10.02	33.678	25.916	209.0	0.179	3.27	51.3	21.4	1.78	22.0	0.02	0.05	0.10	61	214
70	9.92	9.91	33.739	25.983	202.9	0.197	3.09	48.4	23.2	1.84	23.0	0.01	0.02	0.08	70	213
75 ISL	9.88	9.87	33.788	26.028	198.7	0.207	2.97	46.5	24.3	1.88	23.6	0.01	0.02	0.07	75	
85	9.83	9.82	33.874	26.103	191.7	0.227	2.75	43.0	26.1	1.96	24.5	0.01	0.01	0.07	85	212
100	9.75	9.74	33.902	26.139	188.7	0.255	2.61	40.8	26.9	1.99	24.8	0.01	0.01	0.07	101	211
120	9.70	9.69	33.984	26.211	182.2	0.293	2.38	37.2	28.7	2.06	25.7	0.01	0.01	0.07	121	210
125 ISL	9.69	9.68	33.991	26.219	181.6	0.302	2.36	36.8	28.9	2.07	25.8	0.01	0.01	0.06	126	
140	9.65	9.63	34.018	26.247	179.3	0.329	2.31	36.0	29.7	2.09	26.0	0.01	0.02	0.04	141	209
150 ISL	9.51	9.49	34.057	26.300	174.4	0.346	2.20	34.2	31.4	2.14	26.7	0.01	0.02	0.04	151	
169	9.19	9.17	34.133	26.412	164.1	0.379	1.98	30.6	34.9	2.25	28.3	0.01	0.01	0.04	170	208
200	8.88	8.86	34.172	26.492	157.0	0.428	1.76	27.0	38.2	2.35	29.5	0.01	0.02	0.03	201	207
229	8.64	8.62	34.221	26.569	150.2	0.473	1.39	21.2	42.4	2.51	31.0	0.01			230	206
250 ISL	8.44	8.41	34.240	26.615	146.2	0.504	1.20	18.2	45.2	2.59	31.9	0.01			251	
267	8.28	8.25	34.250	26.647	143.3	0.529	1.08	16.4	47.3	2.65	32.5	0.01			269	205
300 ISL	8.00	7.97	34.261	26.698	139.0	0.575	0.91	13.7	50.9	2.74	33.6	0.01			302	
319	7.85	7.82	34.265	26.724	136.8	0.601	0.84	12.6	52.8	2.78	34.1	0.01			321	204
378	7.43	7.39	34.279	26.796	130.7	0.680	0.65	9.7	58.6	2.89	35.6	0.01			380	203
400 ISL	7.22	7.18	34.279	26.826	128.0	0.709	0.59	8.7	61.7	2.94	36.3	0.01			403	
440	6.84	6.80	34.282	26.881	123.1	0.759	0.50	7.3	67.4	3.02	37.6	0.01			443	202
500 ISL	6.45	6.40	34.311	26.956	116.5	0.831	0.34	4.9	74.0	3.11	38.9	0.01			503	
517	6.34	6.29	34.320	26.978	114.6	0.850	0.30	4.3	75.9	3.14	39.3	0.01			521	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 39.3 N	119 29.1 W	21/07/03	2052	UTC	1320 m	320	11 kn	310 02 06	2	1016.6 mb	18.1 C	15.9 C	10m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	15.67	15.67	33.101	24.362	355.5	0.000	6.16	108.5	1.3	0.52	1.4	0.09	0.64	0.20	0	
2	15.67	15.67	33.101	24.362	355.6	0.007	6.16	108.5	1.3	0.52	1.4	0.09	0.64	0.20	2	221
9	15.50	15.50	33.237	24.505	342.2	0.032	6.11	107.3	1.3	0.52	1.4	0.09	0.67	0.22	9	219
10 ISL	15.45	15.45	33.255	24.530	339.9	0.035	6.12	107.4	1.3	0.52	1.4	0.09	0.67	0.23	10	
20	14.69	14.69	33.386	24.796	314.8	0.068	6.18	106.9	1.4	0.55	1.8	0.12	0.77	0.34	20	218
30	13.33	13.33	33.399	25.088	287.2	0.098	5.89	99.1	3.9	0.84	4.1	0.17	1.11	0.41	30	217
39	12.86	12.85	33.480	25.245	272.5	0.123	5.65	94.2	6.1	0.97	5.7	0.20	0.54	0.25	39	216
49	12.37	12.36	33.493	25.350	262.7	0.150	5.09	84.0	11.2	1.22	10.1	0.26	0.11	0.19	49	215
50 ISL	12.27	12.26	33.487	25.365	261.4	0.152	5.05	83.1	11.6	1.24	10.5	0.26	0.11	0.19	50	
60	11.34	11.33	33.480	25.533	245.6	0.178	4.76	76.8	14.4	1.37	13.6	0.23	0.13	0.23	60	214
69	11.02	11.01	33.655	25.727	227.3	0.199	4.57	73.3	15.5	1.43	14.9	0.23	0.17	0.25	69	213
75 ISL	10.56	10.55	33.703	25.845	216.1	0.212	4.10	65.1	18.3	1.57	17.9	0.17	0.15	0.25	75	
84	9.86	9.85	33.749	26.001	201.4	0.231	3.36	52.6	22.9	1.80	22.6	0.07	0.09	0.24	84	212
100	9.48	9.47	33.909	26.189	183.9	0.262	3.09	48.0	25.4	1.89	24.3	0.04	0.04	0.19	100	211
119	9.12	9.11	33.985	26.307	173.0	0.296	2.66	41.0	29.8	2.02	26.5	0.04	0.04	0.13	120	210
125 ISL	9.03	9.02	34.009	26.340	170.0	0.306	2.60	40.0	30.7	2.04	26.9	0.04	0.03	0.12	126	
138	8.86	8.85	34.052	26.401	164.4	0.328	2.53	38.8	32.4	2.07	27.5	0.03	0.02	0.10	139	209
150 ISL	8.70	8.68	34.074	26.443	160.6	0.347	2.44	37.3	34.2	2.12	28.2	0.02	0.02	0.08	151	
168	8.44	8.42	34.088	26.494	156.0	0.376	2.29	34.8	37.3	2.20	29.2	0.02	0.01	0.07	169	208
199	7.90	7.88	34.089	26.576	148.6	0.423	1.99	29.9	43.9	2.37	31.3	0.02	0.02	0.08	200	207
200 ISL	7.89	7.87	34.089	26.578	148.4	0.424	1.98	29.7	44.1	2.37	31.3	0.02			201	
231	7.59	7.57	34.108	26.637	143.3	0.470	1.78	26.5	48.1	2.47	32.5	0.02			232	206
250 ISL	7.54	7.52	34.122	26.655	141.8	0.497	1.67	24.9	49.2	2.51	32.8	0.02			251	
270	7.51	7.48	34.142	26.675	140.2	0.525	1.53	22.8	50.4	2.56	33.1	0.02			272	205
300 ISL	7.32	7.29	34.188	26.739	134.6	0.566	1.16	17.2	55.1	2.71	34.5	0.02			302	
318	7.19	7.16	34.216	26.779	131.0	0.590	0.94	13.9	58.4	2.81	35.5	0.02			320	204
374	6.81	6.78	34.259 D	26.866	123.5	0.661	0.59	8.6	66.0	2.97	37.3	0.02			376	203
400 ISL	6.71	6.67	34.273	26.891	121.4	0.693	0.52	7.6	68.1	3.01	37.8	0.02			403	
436	6.58	6.54	34.289	26.921	119.0	0.737	0.46	6.7	70.8	3.06	38.3	0.01			439	202
500 ISL	6.17	6.13	34.319	26.999	112.2	0.810	0.31	4.5	78.3	3.15	39.7	0.01			503	
521	6.04	5.99	34.329	27.023	110.0	0.834	0.26	3.7	80.7	3.18	40.1	0.01			525	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 25.6 N	119 58.2 W	21/07/03	1632 UTC	1015 m	320 11 kn	310 02 05	2	1017.8 mb	17.7 C	16.0 C	9m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.07	16.07	33.331	24.449	347.2	0.000	6.11	108.6	1.1	0.45	0.9	0.06	0.93	0.28	0	
2 A	16.07	16.07	33.331	24.449	347.3	0.007	6.11	108.6	1.1	0.45	0.9	0.06	0.93	0.28	2	222
5 A	16.06	16.06	33.332	24.452	347.1	0.017	6.14	109.1	1.1	0.45	0.9	0.06	0.93	0.29	5	221
10 ISL	14.97	14.97	33.266	24.643	329.1	0.034	6.15	106.9	1.4	0.53	1.7	0.12	1.28	0.41	10	
12 A	14.47	14.47	33.247	24.735	320.3	0.041	6.15	105.8	1.6	0.57	2.1	0.15	1.45	0.48	12	220
18 A	14.19	14.19	33.303	24.838	310.8	0.060	5.97	102.2	1.9	0.68	3.1	0.19	1.68	0.63	18	219
20 ISL	14.01	14.01	33.297	24.870	307.7	0.066	5.88	100.3	2.2	0.73	3.6	0.23	1.54	0.61	20	
25 A	13.57	13.57	33.282	24.949	300.3	0.081	5.65	95.5	3.1	0.84	4.7	0.34	1.06	0.50	25	218
30 ISL	13.45	13.45	33.341	25.019	293.8	0.096	5.53	93.2	4.0	0.94	5.3	0.35	0.82	0.46	30	
34 A	13.28	13.28	33.373	25.078	288.2	0.108	5.46	91.7	5.1	1.01	6.1	0.36	0.67	0.42	34	217
43	11.69	11.68	33.216	25.263	270.8	0.133	5.18	84.1	9.6	1.17	10.8	0.44	0.25	0.25	43	216
50 ISL	11.72	11.71	33.319	25.338	263.9	0.151	5.07	82.4	11.4	1.23	11.8	0.49	0.16	0.26	50	
51	11.73	11.72	33.329	25.344	263.3	0.154	5.06	82.3	11.6	1.24	11.8	0.50	0.16	0.26	51	215
61	11.57	11.56	33.347	25.387	259.4	0.180	4.99	80.8	12.5	1.27	12.7	0.51	0.14	0.22	61	214
71	10.79	10.78	33.299	25.490	249.8	0.206	4.78	76.1	14.1	1.37	14.6	0.30	0.11	0.26	71	213
75 ISL	10.52	10.51	33.279	25.522	246.8	0.216	4.71	74.6	14.7	1.40	15.3	0.26	0.11	0.26	75	
83	10.08	10.07	33.268	25.588	240.6	0.235	4.56	71.5	15.9	1.47	16.8	0.22	0.10	0.26	83	212
99	9.78	9.77	33.444	25.776	223.1	0.272	4.05	63.1	19.6	1.64	20.2	0.06	0.06	0.23	99	211
100 ISL	9.75	9.74	33.460	25.793	221.4	0.274	4.01	62.5	19.9	1.65	20.4	0.06	0.06	0.23	100	
119	9.22	9.21	33.754	26.110	191.7	0.314	3.19	49.2	26.1	1.88	24.3	0.04	0.03	0.14	120	210
125 ISL	9.15	9.14	33.814	26.168	186.3	0.325	2.98	45.9	27.6	1.94	25.3	0.04	0.03	0.14	126	
138	9.04	9.03	33.909	26.260	177.8	0.349	2.59	39.8	30.5	2.06	27.1	0.03	0.02	0.14	139	209
150 ISL	8.91	8.89	33.974	26.332	171.2	0.370	2.34	35.9	33.0	2.14	28.3	0.02	0.02	0.13	151	
169	8.69	8.67	34.036	26.415	163.6	0.401	2.11	32.2	36.1	2.23	29.5	0.02	0.02	0.11	170	208
199	8.39	8.37	34.054	26.476	158.3	0.450	2.08	31.6	38.6	2.28	30.4	0.03	0.01	0.10	200	207
200 ISL	8.38	8.36	34.055	26.478	158.1	0.451	2.08	31.5	38.7	2.28	30.4	0.03			201	
229	8.03	8.01	34.082	26.552	151.5	0.496	1.93	29.0	42.6	2.37	31.6	0.03			230	206
250 ISL	7.72	7.70	34.090	26.604	146.8	0.527	1.86	27.8	45.7	2.43	32.3	0.03			251	
269	7.47	7.44	34.096	26.645	143.1	0.555	1.79	26.6	48.4	2.48	33.0	0.03			271	205
300 ISL	7.27	7.24	34.121	26.693	138.9	0.599	1.55	22.9	52.3	2.60	34.1	0.03			302	
316	7.18	7.15	34.135	26.717	136.9	0.621	1.40	20.7	54.4	2.66	34.7	0.03			318	204
380	6.52	6.49	34.180	26.842	125.5	0.705	0.89	12.9	65.4	2.90	37.4	0.02			382	203
400 ISL	6.39	6.35	34.206	26.880	122.1	0.729	0.74	10.7	68.7	2.97	38.1	0.02			403	
438	6.20	6.16	34.256	26.944	116.4	0.775	0.49	7.1	74.3	3.08	39.3	0.02			441	202
500 ISL	5.92	5.88	34.295	27.011	110.7	0.845	0.34	4.9	80.9	3.16	40.3	0.01			503	
521	5.82	5.77	34.308	27.034	108.7	0.868	0.29	4.1	83.1	3.19	40.7	0.01			525	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 5.2 N	120 38.4 W	21/07/03	0918 UTC	3817 m	320 11 kn			1016.9 mb	16.8 C	15.9 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	15.81	15.81	33.195	24.403	351.6	0.000	6.12	108.2	1.1	0.48	1.1	0.09	0.44	0.23	0	
3	15.81	15.81	33.195	24.403	351.7	0.011	6.12	108.1	1.1	0.48	1.1	0.09	0.44	0.23	3	220
10 ISL	15.70	15.70	33.190	24.424	349.9	0.035	6.14	108.3	1.1	0.48	1.2	0.09	0.47	0.22	10	
11	15.69	15.69	33.189	24.426	349.8	0.039	6.14	108.2	1.1	0.48	1.2	0.09	0.47	0.22	11	219
20 ISL	14.12	14.12	33.159	24.741	320.0	0.069	6.18	105.5	2.1	0.65	2.6	0.18	1.13	0.39	20	
21	13.92	13.92	33.158	24.782	316.1	0.072	6.18	105.1					1.20	0.41	21	218
30 ISL	13.11	13.11	33.185	24.967	298.8	0.100	5.91	98.8	3.5	0.85	4.4	0.27	0.89	0.32	30	
31	13.06	13.06	33.190	24.980	297.5	0.103	5.88	98.2	3.7	0.87	4.6	0.28	0.83	0.31	31	217
41	12.94	12.93	33.243	25.045	291.5	0.132	5.79	96.5	4.6	0.86	5.1	0.25	0.57	0.37	41	216
50 ISL	12.73	12.72	33.286	25.120	284.7	0.158	5.66	94.0	5.9	0.94	6.0	0.21	0.39	0.45	50	
51	12.69	12.68	33.291	25.132	283.6	0.161	5.64	93.5	6.1	0.95	6.2	0.21	0.37	0.45	51	215
60	12.16	12.15	33.347	25.277	269.9	0.186	5.30	87.0	9.5	1.15	9.3	0.22	0.19	0.39	60	214
69	11.29	11.28	33.315	25.414	257.1	0.209	4.99	80.3	12.2	1.28	12.3	0.20	0.15	0.37	69	213
75 ISL	10.77	10.76	33.324	25.513	247.7	0.225	4.74	75.5	14.2	1.38	14.7	0.15	0.12	0.32	75	
86	10.03	10.02	33.392	25.693	230.7	0.251	4.26	66.8	17.7	1.55	18.7	0.05	0.06	0.21	86	212
100	9.67	9.66	33.555	25.881	213.1	0.282	3.67	57.1	20.8	1.71	21.3	0.04	0.04	0.15	100	211
121	9.35	9.34	33.728	26.069	195.7	0.325	3.15	48.7	24.9	1.87	24.0	0.04	0.02	0.14	122	210
125 ISL	9.30	9.29	33.760	26.102	192.6	0.333	3.05	47.1	25.7	1.90	24.5	0.04	0.02	0.14	126	
139	9.16	9.14	33.867	26.208	182.7	0.359	2.71	41.8	28.7	2.01	26.2	0.03	0.02	0.14	140	209
150 ISL	9.11	9.09	33.943	26.276	176.5	0.379	2.40	37.0	31.1	2.12	27.4	0.03	0.02	0.14	151	
170	8.95	8.93	34.041	26.378	167.2	0.413	2.00	30.7	35.0	2.27	29.1	0.02	0.02	0.14	171	208
197	8.30	8.28	34.064	26.497	156.2	0.457	2.15	32.5	39.0	2.27	30.1	0.02	0.02	0.11	198	207
200 ISL	8.29	8.27	34.071	26.504	155.6	0.461	2.14	32.4	39.3	2.28	30.2	0.02			201	
229	8.18	8.16	34.116	26.557	151.1	0.506	1.86	28.1	42.2	2.39	31.0	0.02			230	206
250 ISL	8.03	8.00	34.151	26.607	146.7	0.537	1.61	24.2	45.3	2.50	31.9	0.02			251	
273	7.81	7.78	34.185	26.666	141.4	0.570	1.32	19.8	49.3	2.62	33.0	0.02			275	205
300 ISL	7.49	7.46	34.215	26.736	135.0	0.608	1.02	15.2	54.7	2.75	34.4	0.02			302	
318	7.27	7.24	34.231	26.780	131.0	0.631	0.85	12.6	58.3	2.83	35.3	0.02			320	204
375	6.65	6.62	34.251	26.881	121.9	0.704	0.58	8.5	67.7	2.98	37.6	0.01			377	203
400 ISL	6.43	6.39	34.265	26.921	118.3	0.734	0.49	7.1	71.6	3.04	38.4	0.01			403	
436	6.18	6.14	34.286	26.971	113.9	0.775	0.39	5.6	76.4	3.11	39.2	0.01			439	202
500 ISL	5.96	5.92	34.308	27.017	110.3	0.847	0.31	4.4	80.9	3.16	39.9	0.01			503	
516	5.91	5.86	34.314	27.028	109.4	0.865	0.29	4.2	82.0	3.17	40.1	0.01			520	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 45.2 N	121 19.2 W	21/07/03	0325	UTC	3741 m	310	16 kn	300 03 06	2	1017.0 mb	17.2 C	16.4 C		8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.60	17.60	32.909	23.769	412.1	0.000	5.67	103.6	1.1	0.37	0.2	0.00	0.17	0.04	0	
2	17.60	17.60	32.909	23.769	412.2	0.008	5.67	103.6	1.1	0.37	0.2	0.00	0.17	0.04	2	221
10 ISL	17.61	17.61	32.909	23.767	412.6	0.041	5.67	103.6	1.0	0.36	0.1	0.00	0.19	0.04	10	
11	17.61	17.61	32.909	23.767	412.7	0.045	5.67	103.6	1.0	0.36	0.1	0.00	0.19	0.04	11	219
20 ISL	17.37	17.37	32.936	23.845	405.5	0.082	5.71	103.9	0.8	0.36	0.2	0.00	0.23	0.07	20	
21	17.33	17.33	32.939	23.857	404.4	0.086	5.72	104.0	0.8	0.36	0.2	0.00	0.24	0.07	21	218
30 ISL	16.72	16.72	32.952	24.010	390.0	0.122	5.85	105.1	0.9	0.37	0.2	0.00	0.47	0.14	30	
31	16.65	16.65	32.954	24.028	388.4	0.126	5.86	105.1	0.9	0.37	0.2	0.00	0.49	0.15	31	217
39	13.12	13.11	32.922	24.761	318.5	0.154	6.35	106.0	2.3	0.59	2.7	0.13	1.34	0.48	39	216
50	11.85	11.84	33.008	25.072	289.1	0.188	5.77	93.9	6.2	0.93	7.6	0.38	0.93	0.45	50	215
61	11.50	11.49	33.100	25.208	276.4	0.219	5.54	89.5	8.1	1.10	10.1	0.66	0.36	0.23	61	214
70	10.62	10.61	33.103	25.367	261.4	0.243	5.27	83.5	10.1	1.15	11.9	0.38	0.17	0.17	70	213
75 ISL	10.67	10.66	33.194	25.429	255.6	0.256	5.07	80.5	11.3	1.24	13.5	0.23	0.13	0.15	75	
84	10.84	10.83	33.380	25.545	244.9	0.278	4.72	75.3	13.8	1.42	16.5	0.03	0.09	0.12	84	212
99	9.47	9.46	33.470	25.847	216.2	0.313	4.28	66.3	18.7	1.56	19.4	0.02	0.03	0.07	99	211
100 ISL	9.47	9.46	33.484	25.858	215.2	0.315	4.23	65.5	19.1	1.58	19.7	0.02	0.03	0.07	100	
120	9.46	9.45	33.654	25.993	202.8	0.357	3.47	53.8	25.1	1.88	24.2	0.01	0.03	0.08	121	210
125 ISL	9.39	9.38	33.675	26.021	200.3	0.367	3.47	53.7	25.0	1.87	24.1	0.01	0.03	0.07	126	
140	9.12	9.10	33.731	26.108	192.2	0.396	3.48	53.6	24.9	1.80	23.4	0.01	0.01	0.05	141	209
150 ISL	8.99	8.97	33.799	26.182	185.4	0.415	3.32	51.0	26.4	1.84	24.1	0.01	0.01	0.04	151	
170	8.78	8.76	33.935	26.322	172.5	0.451	2.90	44.3	30.6	1.98	26.3	0.01	0.00	0.03	171	208
200	8.51	8.49	34.032	26.440	161.7	0.501	2.44	37.1	35.8	2.15	28.6	0.01	0.01	0.03	201	207
232	8.02	8.00	34.071	26.545	152.2	0.551	2.13	32.0	41.3	2.30	30.6	0.00			233	206
250 ISL	7.73	7.71	34.074	26.590	148.1	0.578	2.02	30.2	44.4	2.37	31.6	0.00			251	
271	7.43	7.40	34.076	26.635	144.0	0.609	1.88	27.9	47.9	2.45	32.6	0.00			273	205
300 ISL	7.21	7.18	34.105	26.689	139.3	0.650	1.56	23.0	52.2	2.58	34.0	0.00			302	
319	7.11	7.08	34.126	26.719	136.6	0.676	1.34	19.7	54.8	2.66	34.9	0.00			321	204
375	6.66	6.63	34.157	26.806	129.0	0.751	0.95	13.9	62.8	2.85	37.1	0.00			377	203
400 ISL	6.50	6.46	34.169	26.836	126.3	0.783	0.84	12.2	65.9	2.91	37.8	0.00			403	
440	6.25	6.21	34.188	26.884	122.2	0.832	0.69	10.0	70.7	2.99	38.7	0.00			443	202
500 ISL	5.87	5.83	34.229	26.965	115.0	0.904	0.47	6.7	78.8	3.10	40.1	0.00			503	
520	5.74	5.70	34.243	26.993	112.5	0.926	0.40	5.7	81.5	3.14	40.6	0.00			524	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 25.1 N	121 59.6 W	20/07/03	2150	UTC	3868 m	330	08 kn	320 04 07	2	1018.9 mb	19.0 C	18.0 C	14m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.06	17.06	32.861	23.860	403.4	0.000	5.79	104.7	6.4	0.37	0.1	0.00	0.20	0.05	0	
1	17.06	17.06	32.861	23.860	403.4	0.004	5.79	104.7	6.4	0.37	0.1	0.00	0.20	0.05	1	221
10 ISL	16.83	16.83	32.857	23.911	398.9	0.040	5.79	104.2	6.6	0.37	0.1	0.00	0.22	0.06	10	
11	16.79	16.79	32.857	23.920	398.0	0.044	5.79	104.1	6.6	0.37	0.1	0.00	0.22	0.06	11	219
20 ISL	16.54	16.54	32.870	23.988	391.8	0.080	5.83	104.3	6.8	0.37	0.1	0.00	0.27	0.08	20	
21	16.52	16.52	32.872	23.995	391.2	0.084	5.83	104.3	6.8	0.37	0.1	0.00	0.28	0.08	21	218
30	16.52	16.52	32.894	24.012	389.9	0.119	5.84	104.5	6.9	0.37	0.1	0.00	0.40	0.12	30	217
40	16.50	16.49	32.898	24.020	389.4	0.158	5.83	104.2	7.2	0.37	0.0	0.00	0.64	0.17	40	216
50	16.45	16.44	32.892	24.027	389.1	0.197	5.81	103.8	7.2	0.37	0.1	0.00	0.66	0.22	50	215
60	15.18	15.17	32.771	24.218	371.1	0.235	5.96	103.7	8.0	0.39	0.0	0.00	0.65	0.29	60	214
69	14.48	14.47	32.844	24.424	351.6	0.267	5.96	102.3	8.4	0.40	0.0	0.00	0.46	0.31	69	213
75 ISL	13.88	13.87	32.877	24.574	337.4	0.288	5.89	99.9	8.9	0.45	0.5	0.17	0.37	0.31	75	
84	13.00	12.99	32.913	24.779	318.0	0.317	5.75	95.8	9.8	0.55	1.8	0.40	0.27	0.32	84	212
99	12.06	12.05	32.935	24.977	299.4	0.364	5.63	91.9	11.4	0.69	4.6	0.16	0.21	0.23	99	211
100 ISL	11.97	11.96	32.936	24.995	297.7	0.367	5.62	91.6	11.6	0.71	4.9	0.15	0.20	0.22	100	
121	10.14	10.13	33.041	25.402	259.1	0.425	5.23	82.0	16.4	1.07	11.2	0.02	0.08	0.12	121	210
125 ISL	9.93	9.92	33.087	25.473	252.4	0.435	5.15	80.4	17.5	1.13	12.3	0.02	0.06	0.10	126	
140	9.38	9.36	33.287	25.719	229.2	0.471	4.80	74.1	21.9	1.33	16.0	0.01	0.02	0.04	141	209
150 ISL	9.13	9.11	33.418	25.862	215.8	0.494	4.51	69.3	25.1	1.47	18.4	0.01	0.02	0.04	151	
168	8.88	8.86	33.644	26.078	195.5	0.531	3.89	59.5	30.9	1.71	22.3	0.01	0.01	0.03	169	208
198	8.81	8.79	33.962	26.339	171.4	0.586	2.70	41.3	39.2	2.03	27.1	0.00	0.00	0.04	199	207
200 ISL	8.79	8.77	33.971	26.349	170.5	0.589	2.66	40.7	39.6	2.04	27.3	0.00			201	
227	8.50	8.48	34.031	26.441	162.1	0.634	2.37	36.0	43.8	2.17	29.1	0.00			228	206
250 ISL	8.24	8.21	34.043	26.491	157.8	0.671	2.35	35.5	46.2	2.21	29.8	0.00			251	
268	8.02	7.99	34.042	26.523	154.9	0.699	2.33	35.0	48.3	2.24	30.3	0.00			269	205
300 ISL	7.52	7.49	34.063	26.612	146.7	0.747	1.91	28.4	55.2	2.43	32.6	0.00			302	
318	7.24	7.21	34.078	26.664	142.0	0.773	1.64	24.2	59.4	2.55	34.0	0.00			320	204
379	6.65	6.62	34.124	26.781	131.4	0.857	1.16	16.9	69.3	2.78	36.6	0.00			381	203
400 ISL	6.46	6.42	34.143	26.821	127.7	0.884	0.98	14.2	73.4	2.86	37.5	0.00			402	
439	6.16	6.12	34.179	26.889	121.6	0.932	0.69	9.9	80.6	2.99	39.1	0.00			442	202
500 ISL	5.85	5.81	34.221	26.961	115.3	1.005	0.48	6.9	88.1	3.10	40.4	0.00			503	
519	5.75	5.71	34.234	26.984	113.3	1.026	0.42	6.0	90.4	3.13	40.8	0.00			522	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 6.0 N	122 40.1 W	20/07/03	1701	UTC	4041 m	020	14 kn	010 04 07	2	1019.1 mb	17.5 C	16.9 C	21m	8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	18.30	18.30	33.005	23.672	421.3	0.000	5.50	101.9	1.6	0.36	0.3	0.00	0.10	0.03	0	
3 A	18.30	18.30	33.005	23.673	421.4	0.013	5.50	101.9	1.6	0.36	0.3	0.00	0.10	0.03	3	221
10 ISL	18.29	18.29	33.004	23.674	421.4	0.042	5.50	101.9	1.5	0.37	0.2	0.00	0.10	0.03	10	
13 A	18.28	18.28	33.003	23.676	421.4	0.055	5.50	101.9	1.5	0.37	0.2	0.00	0.10	0.03	13	220
20 ISL	18.28	18.28	33.003	23.677	421.6	0.084	5.49	101.7	1.7	0.37	0.2	0.00	0.10	0.03	20	
28 A	18.27	18.27	33.001	23.678	421.7	0.118	5.49	101.7	1.9	0.37	0.2	0.00	0.11	0.03	28	219
30 ISL	18.26	18.25	32.999	23.679	421.7	0.126	5.49	101.6	1.9	0.37	0.2	0.00	0.11	0.03	30	
40 A	18.23	18.22	32.990	23.680	422.0	0.169	5.51	101.9	1.8	0.36	0.3	0.00	0.13	0.03	40	218
50 ISL	17.46	17.45	33.032	23.898	401.4	0.210	5.66	103.2	1.8	0.36	0.3	0.00	0.18	0.05	50	
57 A	16.82	16.81	33.070	24.079	384.4	0.237	5.77	103.9	1.9	0.37	0.3	0.00	0.21	0.07	57	217
68	16.26	16.25	33.085	24.219	371.3	0.279	5.78	103.0	2.0	0.37	0.2	0.00	0.21	0.09	68	216
75 ISL	15.61	15.60	33.041	24.332	360.7	0.304	5.84	102.7	1.9	0.38	0.3	0.00	0.24	0.12	75	
80 A	15.13	15.12	33.012	24.415	352.9	0.322	5.87	102.2	1.9	0.40	0.3	0.00	0.26	0.15	80	215
87	14.65	14.64	33.019	24.524	342.7	0.347	5.86	101.0	2.0	0.44	0.0	0.00	0.25	0.21	87	214
93	13.88	13.87	33.019	24.685	327.4	0.367	5.81	98.6	2.5	0.49	0.2	0.03	0.36	0.32	93	213
100 ISL	12.99	12.98	32.960	24.818	314.7	0.389	5.72	95.3	3.2	0.60	1.8	0.12	0.31	0.27	100	
103	12.65	12.64	32.935	24.865	310.3	0.399	5.68	93.9	3.6	0.65	2.7	0.15	0.27	0.25	103	212
114	11.86	11.85	32.960	25.034	294.3	0.432	5.50	89.4	5.4	0.81	5.9	0.08	0.18	0.15	114	211
124	11.53	11.51	33.105	25.208	278.0	0.460	5.16	83.4	7.7	1.02	9.5	0.02	0.09	0.10	124	210
125 ISL	11.46	11.44	33.109	25.224	276.4	0.463	5.14	82.9	7.9	1.04	9.8	0.02	0.08	0.10	125	
140	10.37	10.35	33.151	25.449	255.1	0.503	4.88	76.9	11.0	1.22	13.1	0.01	0.04	0.05	141	209
150 ISL	9.97	9.95	33.287	25.623	238.7	0.528	4.65	72.7	13.2	1.31	15.0	0.01	0.02	0.04	151	
164	9.63	9.61	33.511	25.854	217.0	0.560	4.29	66.7	16.6	1.44	17.5	0.01	0.01	0.03	165	208
194	9.06	9.04	33.821	26.189	185.6	0.620	3.41	52.4	25.0	1.79	23.1	0.01	0.00	0.02	195	207
200 ISL	8.98	8.96	33.858	26.231	181.8	0.631	3.34	51.3	26.1	1.81	23.7	0.01			201	
228	8.66	8.64	33.973	26.371	168.9	0.680	3.12	47.6	30.2	1.89	25.5	0.00			229	206
250 ISL	8.48	8.45	34.038	26.450	161.7	0.717	2.71	41.2	34.0	2.05	27.5	0.00			251	
269	8.34	8.31	34.075	26.501	157.2	0.747	2.34	35.5	37.3	2.20	29.1	0.00			270	205
300 ISL	8.03	8.00	34.099	26.567	151.4	0.795	2.07	31.1	41.5	2.33	30.6	0.00			302	
318	7.84	7.81	34.107	26.601	148.3	0.822	1.95	29.2	43.9	2.40	31.3	0.00			320	204
376	7.28	7.24	34.189	26.746	135.2	0.904	1.16	17.2	54.9	2.73	34.5	0.00			378	203
400 ISL	7.11	7.07	34.208	26.785	131.8	0.936	0.97	14.3	58.3	2.81	35.5	0.00			402	
437	6.86	6.82	34.228	26.836	127.4	0.984	0.76	11.1	63.0	2.92	36.8	0.00			440	202
500 ISL	6.33	6.28	34.266	26.936	118.2	1.061	0.47	6.8	72.3	3.12	38.8	0.00			503	
521	6.15	6.10	34.279	26.970	115.2	1.086	0.38	5.5	75.4	3.19	39.4	0.00			524	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 45.4 N	123 20.1 W	20/07/03	1020	UTC	4034 m	010	16 kn			1018.5 mb	19.0 C	17.4 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	19.03	19.03	33.213	23.649	423.5	0.000	5.43	102.1	1.6	0.35	0.2	0.00	0.08	0.02	0	
2	19.03	19.03	33.213	23.650	423.6	0.008	5.43	102.1	1.6	0.35	0.2	0.00	0.08	0.02	2	220
10 ISL	19.03	19.03	33.212	23.649	423.9	0.042	5.43	102.1	1.6	0.35	0.2	0.00	0.08	0.02	10	
15	19.03	19.03	33.212	23.649	424.0	0.064	5.43	102.1	1.6	0.35	0.2	0.00	0.08	0.02	15	219
20 ISL	19.03	19.03	33.212	23.650	424.2	0.085	5.43	102.1	1.7	0.35	0.2	0.00	0.08	0.02	20	
30 ISL	19.03	19.02	33.211	23.649	424.6	0.127	5.42	101.9	1.9	0.35	0.1	0.00	0.09	0.02	30	
31	19.03	19.02	33.211	23.649	424.6	0.131	5.42	101.9	1.9	0.35	0.1	0.00	0.09	0.02	31	218
46	18.89	18.88	33.229	23.699	420.4	0.195	5.47	102.6	1.9	0.35	0.2	0.00	0.11	0.03	46	217
50 ISL	18.55	18.54	33.231	23.786	412.3	0.211	5.55	103.5	1.9	0.35	0.2	0.00	0.12	0.03	50	
60	17.43	17.42	33.223	24.052	387.1	0.251	5.75	104.9	1.9	0.35	0.2	0.00	0.15	0.05	60	216
75	15.59	15.58	33.150	24.420	352.3	0.307	5.90	103.8	2.0	0.37	0.2	0.00	0.22	0.08	75	215
85	14.09	14.08	33.044	24.660	329.5	0.341	5.92	100.9	2.6	0.44	0.2	0.00	0.28	0.22	85	214
95	12.93	12.92	32.941	24.815	314.9	0.373	5.81	96.6	3.4	0.57	1.5	0.08	0.35	0.33	95	213
100 ISL	12.52	12.51	32.913	24.873	309.4	0.389	5.76	95.0	3.8	0.64	2.6	0.10	0.34	0.31	100	
104	12.25	12.24	32.905	24.918	305.1	0.401	5.71	93.6	4.1	0.70	3.6	0.11	0.32	0.30	104	212
114	11.77	11.76	32.960	25.051	292.7	0.431	5.51	89.4	5.4	0.80	5.7	0.10	0.25	0.23	114	211
125 ISL	11.24	11.22	33.070	25.233	275.5	0.462	5.21	83.7	7.6	0.97	9.1	0.05	0.16	0.16	125	
127	11.16	11.14	33.097	25.269	272.2	0.468	5.14	82.4	8.0	1.00	9.7	0.04	0.15	0.15	127	210
139	11.04	11.02	33.310	25.456	254.6	0.499	4.68	74.9	10.6	1.18	12.6	0.03	0.12	0.15	140	209
150 ISL	10.63	10.61	33.456	25.642	237.1	0.526	4.29	68.1	13.7	1.35	15.5	0.02	0.09	0.12	151	
166	9.94	9.92	33.625	25.892	213.5	0.562	3.77	59.0	18.6	1.58	19.6	0.01	0.05	0.06	167	208
194	9.35	9.33	33.865	26.177	186.9	0.618	2.97	46.0	26.2	1.88	24.5	0.01	0.02	0.03	195	207
200 ISL	9.25	9.23	33.898	26.219	183.0	0.630	2.90	44.8	27.3	1.92	25.1	0.01			201	
231	8.78	8.76	34.011	26.383	167.9	0.684	2.71	41.5	32.1	2.05	27.0	0.01			232	206
250 ISL	8.53	8.50	34.055	26.456	161.2	0.715	2.48	37.7	35.5	2.14	28.4	0.01			251	
266	8.33	8.30	34.081	26.507	156.6	0.741	2.28	34.5	38.3	2.22	29.5	0.01			267	205
300 ISL	7.92	7.89	34.112	26.593	148.8	0.793	1.93	29.0	43.7	2.40	31.4	0.01			302	
321	7.67	7.64	34.121	26.637	144.9	0.823	1.74	26.0	47.1	2.50	32.4	0.01			323	204
376	6.98	6.94	34.143	26.751	134.4	0.900	1.33	19.5	57.0	2.71	35.3	0.01			378	203
400 ISL	6.74	6.70	34.163	26.800	130.0	0.932	1.10	16.1	61.3	2.80	36.5	0.01			402	
438	6.43	6.39	34.199	26.870	123.7	0.980	0.75	10.9	67.7	2.94	38.1	0.00			441	202
500 ISL	6.04	6.00	34.257	26.966	115.1	1.054	0.44	6.3	76.8	3.10	39.9	0.01			503	
518	5.93	5.88	34.274	26.994	112.6	1.075	0.35	5.0	79.4	3.15	40.4	0.01			521	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 57.3 N	117 18.4 W	17/07/03	1825 UTC	69 m	230 07 kn	240 03 07	2	1014.3 mb	21.8 C	19.9 C	04m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	22.10	22.10	33.588	23.119	474.1	0.000	6.76	134.8	0.8	0.05	0.0	0.01	4.06	0.93	0	
2 B	22.10	22.10	33.588	23.119	474.2	0.009	6.76	134.8	0.8	0.05	0.0	0.01	4.06	0.93	2	212
4 B	21.85	21.85	33.579	23.182	468.3	0.019	6.77	134.4	0.6	0.04	0.0	0.01	3.78	0.90	4	210
5 B	21.79	21.79	33.579	23.198	466.8	0.024	6.80	134.9	0.6	0.04	0.0	0.01	4.00 A	1.06 A	5	209
8 B	19.13	19.13	33.392	23.761	413.1	0.037	5.95	112.3	1.2	0.21	0.0	0.00	0.85	0.27	8	208
10 ISL	17.83	17.83	33.366	24.064	384.3	0.045	6.14	113.0	1.1	0.24	0.0	0.00	0.80	0.26	10	
12 B	16.76	16.76	33.374	24.324	359.5	0.052	6.33	114.1	1.0	0.27	0.0	0.00	0.74	0.25	12	207
15 B	15.34	15.34	33.393	24.660	327.6	0.063	6.60	115.7	1.1	0.28	0.0	0.00	0.78	0.31	15	206
20 ISL	14.13	14.13	33.428	24.947	300.4	0.078	6.22	106.4	1.6	0.41	1.5	0.06	0.75	0.41	20	
22	13.84	13.84	33.429	25.008	294.7	0.084	5.94	101.0	2.1	0.50	2.5	0.12	0.74	0.45	22	205
30	12.27	12.27	33.346	25.255	271.3	0.107	5.18	85.2	6.1	0.96	8.7	0.62	0.92	0.63	30	204
40	10.90	10.90	33.292	25.465	251.5	0.133	4.58	73.1	11.7	1.22	14.6	0.09	0.30	0.28	40	203
49	10.69	10.68	33.401	25.587	240.1	0.155	4.27	67.9	14.2	1.34	17.0	0.04	0.11	0.14	49	202
50 ISL	10.70	10.69	33.414	25.595	239.3	0.157	4.21	67.0	14.5	1.37	17.1	0.05	0.11	0.15	50	
61	10.81	10.80	33.552	25.683	231.2	0.183	3.59	57.3	18.0	1.65	18.4	0.17	0.14	0.28	61	213

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

B) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 54.3 N	117 23.7 W	17/07/03	2046 UTC	560 m	190 05 kn	220 02 06	2	1014.6 mb	21.6 C	19.8 C	09m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	20.20	20.20	33.416	23.503	437.5	0.000	5.89	113.4	0.7	0.20	0.1	0.00	0.52	0.19	0	
3	20.20	20.20	33.416	23.503	437.6	0.013	5.89	113.4	0.7	0.20	0.1	0.00	0.52	0.19	3	221
10	18.96	18.96	33.364	23.783	411.1	0.043	6.01	113.0	1.0	0.26	0.1	0.00	0.56	0.13	10	219
20	14.03	14.03	33.280	24.853	309.3	0.079	6.42	109.5	1.6	0.43	0.9	0.07	1.00	0.47	20	218
29	13.63	13.63	33.369	25.004	295.2	0.106	5.84	98.8	2.6	0.63	3.8	0.22	1.10	0.61	29	217
30 ISL	13.47	13.47	33.359	25.029	292.8	0.109	5.77	97.3	3.0	0.67	4.4	0.24	1.07	0.61	30	
40	11.84	11.83	33.256	25.266	270.4	0.137	5.02	81.8	8.2	1.07	10.4	0.36	0.70	0.49	40	216
49	11.26	11.25	33.270 D	25.384	259.5	0.161									49	215
50 ISL	11.20	11.19	33.292	25.411	256.8	0.164	4.34	69.7	13.0	1.36	15.3	0.21	0.41	0.33	50	
60	10.75	10.74	33.526	25.674	232.1	0.188	3.75	59.8	16.8	1.57	18.8	0.03	0.22	0.20	60	214
70	10.57	10.56	33.601	25.764	223.7	0.211	3.26	51.8	18.9	1.71	20.7	0.03	0.14	0.16	70	213
75 ISL	10.41	10.40	33.650	25.830	217.5	0.222	3.10	49.1	20.3	1.77	21.6	0.02	0.10	0.13	75	
86	10.07	10.06	33.757	25.972	204.3	0.245	2.87	45.1	23.1	1.87	23.2	0.01	0.04	0.08	86	212
100	9.96	9.95	33.849	26.062	196.0	0.273	2.64	41.4	25.3	1.95	24.2	0.01	0.02	0.07	100	211
120	9.79	9.78	33.923	26.149	188.2	0.311	2.56	40.0	27.0	1.99	24.7	0.01	0.01	0.06	121	210
125 ISL	9.73	9.72	33.942	26.174	185.9	0.321	2.53	39.5	27.4	2.00	24.9	0.01	0.01	0.06	126	
140	9.58	9.56	34.004	26.247	179.2	0.348	2.46	38.3	29.0	2.04	25.6	0.01	0.01	0.05	141	209
150 ISL	9.60	9.58	34.057	26.286	175.8	0.366	2.17	33.8	30.7	2.14	26.6	0.01	0.01	0.06	151	
170	9.68	9.66	34.150	26.345	170.6	0.401	1.58	24.7	34.1	2.33	28.4	0.01	0.01	0.08	171	208
200 ISL	9.45	9.43	34.192	26.417	164.4	0.451	1.59	24.7	36.1	2.37	28.7	0.01	0.00	0.07	201	
203	9.42	9.40	34.193	26.422	163.9	0.456	1.59	24.7	36.2	2.37	28.7	0.01	0.00	0.07	204	207
233	9.15	9.12	34.228	26.494	157.6	0.504	1.37	21.2	39.5	2.47	29.9	0.01			234	206
250 ISL	8.95	8.92	34.228	26.526	154.8	0.531	1.33	20.5	41.2	2.51	30.4	0.01			251	
267	8.74	8.71	34.225	26.557	152.1	0.557	1.30	19.9	42.9	2.54	30.9	0.01			269	205
300 ISL	8.44	8.41	34.251	26.624	146.2	0.606	1.17	17.8	46.4	2.62	31.8	0.01			302	
322	8.27	8.24	34.271 D	26.666	142.6	0.638									324	204
375	7.87	7.83	34.279	26.733	137.0	0.712	0.81	12.2	53.9	2.81	33.7	0.01			377	203
400 ISL	7.74	7.70	34.289	26.760	134.7	0.746	0.71	10.6	56.0	2.86	34.4	0.01			403	
436	7.54	7.50	34.302	26.799	131.4	0.794	0.56	8.3	59.0	2.93	35.4	0.01			439	202
500 ISL	6.85	6.80	34.300	26.895	122.8	0.875									503	
505	6.80	6.75	34.300 D	26.901	122.2	0.881									508	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 50.6 N	117 32.0 W	18/07/03	0000	UTC	863 m	190	05 kn	230 02 07	1	1014.3 mb	22.2 C	20.0 C	08m	3/8	CS

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	20.16	20.16	33.491	23.570	431.0	0.000	5.96	114.7	0.9	0.18	0.1	0.00	0.45	0.15	0	
2	20.16	20.16	33.491	23.571	431.1	0.009	5.96	114.7	0.9	0.18	0.1	0.00	0.45	0.15	2	221
10	20.00	20.00	33.483	23.607	427.9	0.043	6.06	116.3	0.8	0.16	0.1	0.00	0.56	0.18	10	219
20 ISL	15.46	15.46	33.445	24.674	326.4	0.081	6.61	116.2	1.6	0.30	0.1	0.01	0.78	0.36	20	
21	14.94	14.94	33.446	24.789	315.5	0.084	6.64	115.5	1.7	0.31	0.1	0.01	0.80	0.38	21	218
29	12.85	12.85	33.255	25.072	288.7	0.108	5.93	98.7	2.1	0.71	5.1	0.26	3.57	1.21	29	217
30 ISL	12.70	12.70	33.244	25.093	286.7	0.111	5.84	96.9	2.6	0.75	5.7	0.26	3.43	1.18	30	
40	11.80	11.79	33.213	25.240	272.9	0.139	5.05	82.2	8.3	1.08	10.6	0.30	0.79	0.54	40	216
50	11.46	11.45	33.299	25.370	260.8	0.166	4.74	76.6	11.0	1.25	13.6	0.25	0.33	0.31	50	215
59	10.86	10.85	33.412	25.566	242.3	0.188	4.33	69.1	14.3	1.42	16.7	0.04	0.15	0.16	59	214
70	10.38	10.37	33.470	25.695	230.3	0.214	4.03	63.7	16.4	1.51	18.2	0.03	0.10	0.11	70	213
75 ISL	10.37	10.36	33.546	25.756	224.6	0.226	3.72	58.8	18.0	1.59	19.4	0.03	0.11	0.13	75	
84	10.34	10.33	33.672	25.859	214.9	0.245	3.16	50.0	20.9	1.75	21.6	0.02	0.14	0.17	84	212
99	10.06	10.05	33.759	25.975	204.2	0.277	2.83	44.5	23.1	1.87	23.4	0.02	0.05	0.10	99	211
100 ISL	10.05	10.04	33.766	25.982	203.6	0.279	2.82	44.3	23.2	1.87	23.4	0.02	0.05	0.10	100	
120	9.86	9.85	33.910	26.127	190.2	0.318	2.64	41.4	25.9	1.93	24.2	0.01	0.02	0.09	121	210
125 ISL	9.87	9.86	33.945	26.153	187.9	0.328	2.49	39.0	26.9	1.98	24.7	0.01	0.02	0.09	126	
139	9.90	9.88	34.031	26.215	182.3	0.354	2.06	32.3	29.7	2.13	26.2	0.01	0.03	0.10	140	209
150 ISL	9.84	9.82	34.069	26.255	178.7	0.373	2.00	31.3	30.9	2.17	26.7	0.01	0.02	0.10	151	
168	9.68	9.66	34.109	26.313	173.6	0.405	1.91	29.8	32.2	2.20	27.1	0.01	0.01	0.09	169	208
199	9.42	9.40	34.175	26.408	165.2	0.458	1.70	26.4	35.2	2.32	28.4	0.01	0.01	0.05	200	207
200 ISL	9.42	9.40	34.177	26.410	165.0	0.459	1.69	26.3	35.3	2.32	28.4	0.01			201	
228	9.27	9.24	34.223	26.471	159.8	0.505	1.41	21.8	38.1	2.42	29.3	0.01			229	206
250 ISL	9.01	8.98	34.228	26.517	155.8	0.540	1.36	20.9	40.2	2.46	30.1	0.01			251	
270	8.77	8.74	34.228	26.555	152.4	0.570	1.34	20.5	42.0	2.49	30.7	0.01			272	205
300 ISL	8.61	8.58	34.255	26.601	148.5	0.615	1.18	18.0	44.6	2.57	31.3	0.01			302	
319	8.52	8.49	34.273	26.630	146.2	0.643	1.06	16.1	46.3	2.63	31.7	0.01			321	204
379	7.99	7.95	34.293	26.726	137.8	0.729	0.76	11.4	52.9	2.79	33.5	0.01			381	203
400 ISL	7.80	7.76	34.301	26.760	134.7	0.757	0.67	10.0	55.5	2.84	34.2	0.01			403	
442	7.42	7.38	34.313	26.825	129.0	0.813	0.52	7.7	60.8	2.93	35.6	0.01			445	202
500 ISL	6.87	6.82	34.316	26.904	121.9	0.885	0.39	5.7	68.2	3.03	37.4	0.01			503	
518	6.70	6.65	34.318	26.929	119.6	0.907	0.35	5.1	70.5	3.06	38.0	0.01			522	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 40.6 N	117 52.4 W	18/07/03	0411	UTC	614 m	170	05 kn			1014.0 mb	19.0 C	18.1 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	19.47	19.47	33.482	23.743	414.6	0.000	5.66	107.5	1.2	0.28	0.1	0.00	0.24	0.09	0	
2	19.47	19.47	33.482	23.743	414.7	0.008	5.66	107.5	1.2	0.28	0.1	0.00	0.24	0.09	2	220
10 ISL	18.86	18.86	33.490	23.904	399.5	0.041	5.58	104.8	1.2	0.27	0.1	0.00	0.27	0.10	10	
11	18.78	18.78	33.491	23.925	397.6	0.045	5.57	104.5	1.2	0.27	0.1	0.00	0.27	0.10	11	219
20	15.74	15.74	33.372	24.556	337.7	0.078	6.25	110.4	1.4	0.39	0.4	0.02	0.30	0.18	20	218
30 ISL	13.37	13.37	33.298	25.002	295.4	0.110	5.72	96.2	2.4	0.82	5.5	0.27	0.93	0.52	30	
31	13.20	13.20	33.292	25.032	292.6	0.113	5.64	94.6	2.6	0.86	6.1	0.29	0.98	0.55	31	217
41	12.23	12.22	33.248	25.187	278.0	0.141	5.25	86.2	6.5	1.04	8.5	0.26	0.58	0.37	41	216
50	12.61	12.60	33.470	25.286	268.9	0.166	5.22	86.5	8.0	1.13	9.8	0.37	0.31	0.25	50	215
61	11.42	11.41	33.382	25.442	254.2	0.194	4.81	77.7	11.0	1.28	13.4	0.29	0.33	0.25	61	214
69	10.73	10.72	33.364	25.551	243.9	0.214	4.42	70.3	14.1	1.43	16.6	0.08	0.20	0.21	69	213
75 ISL	10.30	10.29	33.407	25.659	233.7	0.229	4.25	67.0	15.7	1.48	17.7	0.07	0.12	0.17	75	
85	9.80	9.79	33.512	25.825	218.1	0.251	4.07	63.5	17.7	1.52	18.7	0.05	0.04	0.10	85	212
100	9.63	9.62	33.620	25.938	207.7	0.283	3.75	58.3	20.0	1.63	20.3	0.04	0.02	0.09	100	211
120	9.38	9.37	33.793	26.115	191.3	0.323	3.36	52.0	23.8	1.76	22.6	0.02	0.01	0.05	121	210
125 ISL	9.34	9.33	33.821	26.143	188.7	0.333	3.26	50.5	24.7	1.80	23.2	0.02	0.01	0.05	126	
140	9.21	9.19	33.888	26.217	182.0	0.360	2.99	46.2	27.2	1.91	24.8	0.02	0.01	0.07	141	209
150 ISL	9.05	9.03	33.935	26.279	176.2	0.378	2.88	44.3	29.1	1.96	25.7	0.02	0.01	0.07	151	
170	8.78	8.76	34.027	26.394	165.6	0.413	2.63	40.2	32.8	2.06	27.1	0.02	0.01	0.05	171	208
200	8.83	8.81	34.144	26.478	158.3	0.461	1.91	29.3	37.5	2.31	29.0	0.01	0.00	0.04	201	207
230	8.65	8.63	34.210	26.559	151.2	0.508	1.43	21.8	42.2	2.50	30.9	0.01			231	206
250 ISL	8.48	8.45	34.213	26.588	148.8	0.538	1.42	21.6	43.8	2.53	31.4	0.01			251	
270	8.27	8.24	34.205	26.614	146.6	0.567	1.41	21.3	45.3	2.55	31.8	0.01			272	205
300 ISL	7.85	7.82	34.213	26.683	140.3	0.610	1.20	18.0	50.2	2.66	33.2	0.01			302	
319	7.62	7.59	34.226	26.726	136.4	0.636	1.03	15.4	53.4	2.74	34.1	0.01			321	204
379	7.52	7.48	34.315	26.812	129.3	0.716	0.56	8.3	58.9	2.95	35.4	0.01			381	203
400 ISL	7.41	7.37	34.320	26.831	127.7	0.743	0.50	7.4	60.6	2.98	35.8	0.01			403	
440	7.18	7.14	34.316	26.861	125.3	0.794	0.45	6.6	63.6	3.01	36.5	0.01			443	202
500 ISL	6.91	6.86	34.327	26.908	121.6	0.868	0.36	5.3	67.7	3.08	37.5	0.01			503	
520	6.82	6.77	34.331	26.923	120.4	0.892	0.33	4.8	69.1	3.10	37.8	0.01			524	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 31.0 N	118 13.3 W	18/07/03	0752 UTC	1597 m	070 04 kn			1015.1 mb	19.7 C	18.0 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	19.24	19.24	33.317	23.676	421.0	0.000	5.73	108.3	1.4	0.29	0.0	0.00	0.35	0.09	0	
2	19.24	19.24	33.317	23.676	421.1	0.008	5.73	108.3	1.4	0.29	0.0	0.00	0.35	0.09	2	220
10	17.14	17.14	33.282	24.164	374.7	0.040	6.12	111.1	1.4	0.30	0.0	0.00	0.34	0.10	10	219
20	14.54	14.54	33.284	24.749	319.2	0.075	6.30	108.6	1.3	0.49	1.6	0.11	1.24	0.50	20	218
30	12.80	12.80	33.184	25.027	293.0	0.106	5.63	93.5	4.0	0.80	5.7	0.22	1.18	0.66	30	217
41	11.74	11.73	33.200	25.241	272.8	0.137	5.03	81.7	8.7	1.07	10.7	0.22	0.45	0.33	41	216
50 ISL	11.10	11.09	33.250	25.397	258.2	0.161	4.72	75.7	11.0	1.20	12.9	0.13	0.26	0.21	50	
51	11.05	11.04	33.258	25.412	256.8	0.163	4.69	75.1	11.2	1.21	13.1	0.12	0.25	0.20	51	215
61	10.90	10.89	33.393	25.544	244.5	0.188	4.40	70.3	13.4	1.33	15.3	0.11	0.14	0.15	61	214
69	10.93	10.92	33.481	25.607	238.6	0.208	4.34	69.4	14.9	1.45	17.3	0.04	0.09	0.13	69	213
75 ISL	10.69	10.68	33.525	25.684	231.5	0.222	4.21	67.0	16.7	1.53	18.7	0.03	0.07	0.11	75	
85	10.19	10.18	33.591	25.822	218.5	0.244	3.88	61.1	19.9	1.66	20.7	0.02	0.06	0.10	85	212
100	9.94	9.93	33.723	25.967	205.0	0.276	3.21	50.3	23.8	1.83	23.3	0.02	0.05	0.12	100	211
119	9.48	9.47	33.809	26.111	191.7	0.314	2.93	45.5	27.3	1.93	25.1	0.02	0.02	0.10	120	210
125 ISL	9.40	9.39	33.827	26.138	189.2	0.325	2.93	45.4	27.5	1.92	25.1	0.02	0.02	0.10	126	
138	9.26	9.24	33.865	26.191	184.4	0.349	2.95	45.6	27.9	1.91	25.1	0.03	0.03	0.09	139	209
150 ISL	9.12	9.10	33.926	26.261	177.9	0.371	2.79	43.0	30.0	1.97	25.9	0.03	0.02	0.07	151	
169	8.92	8.90	34.025	26.370	167.9	0.404	2.45	37.6	34.1	2.10	27.6	0.02	0.01	0.05	170	208
199	8.74	8.72	34.107	26.463	159.6	0.453	2.00	30.6	38.4	2.26	29.4	0.02	0.01	0.05	200	207
200 ISL	8.74	8.72	34.110	26.466	159.4	0.455	1.98	30.3	38.5	2.27	29.5	0.02			201	
229	8.55	8.53	34.186	26.555	151.4	0.500	1.54	23.5	43.0	2.44	30.9	0.02			230	206
250 ISL	8.29	8.26	34.213	26.616	145.9	0.531	1.31	19.8	46.7	2.55	31.9	0.02			251	
271	8.01	7.98	34.228	26.670	141.0	0.561	1.13	17.0	50.2	2.64	32.8	0.01			273	205
300 ISL	7.78	7.75	34.240	26.714	137.3	0.601	0.97	14.5	53.6	2.72	33.8	0.01			302	
318	7.66	7.63	34.244	26.735	135.6	0.626	0.90	13.4	55.5	2.76	34.4	0.01			320	204
378	7.15	7.11	34.272	26.830	127.2	0.705	0.60	8.9	63.9	2.91	36.5	0.01			380	203
400 ISL	6.97	6.93	34.277	26.859	124.7	0.733	0.54	7.9	66.4	2.95	37.1	0.01			403	
442	6.64	6.60	34.284	26.909	120.3	0.784	0.45	6.6	71.2	3.03	38.1	0.01			445	202
500 ISL	6.16	6.12	34.303	26.987	113.2	0.852	0.33	4.8	79.3	3.12	39.6	0.01			503	
516	6.03	5.98	34.309	27.009	111.3	0.870	0.30	4.3	81.5	3.14	40.0	0.01			520	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 20.7 N	118 33.5 W	18/07/03	1200 UTC	1366 m	200 12 kn			1014.0 mb	19.0 C	18.1 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	19.18	19.18	33.515	23.842	405.1	0.000	5.67	107.2	1.2	0.27	0.1	0.00	0.55	0.15	0	
2	19.18	19.18	33.515	23.842	405.2	0.008	5.67	107.2	1.2	0.27	0.1	0.00	0.55	0.15	2	220
10	17.44	17.44	33.529	24.282	363.5	0.039	6.11	111.7	1.2	0.26	0.1	0.01	0.77	0.24	10	219
20	13.72	13.72	33.581	25.150	281.1	0.071	6.18	104.9	1.1	0.61	4.2	0.17	1.49	0.60	20	218
30 ISL	11.36	11.36	33.612	25.631	235.5	0.097	4.23	68.3	13.3	1.46	16.1	0.30	1.29	0.69	30	
31	11.20	11.20	33.614	25.661	232.6	0.099	4.01	64.6	14.7	1.54	17.3	0.30	1.27	0.70	31	217
40	10.52	10.52	33.657	25.816	218.1	0.120	3.21	50.9	20.2	1.76	21.4	0.09	0.38	0.31	40	216
50	10.36	10.35	33.696	25.874	212.8	0.141	3.00	47.5	21.7	1.81	22.2	0.06	0.22	0.18	50	215
60	10.20	10.19	33.754	25.947	206.1	0.162	2.82	44.5	22.9	1.87	23.2	0.07	0.16	0.17	60	214
69	9.94	9.93	33.797	26.024	198.9	0.180	2.76	43.3	24.4	1.91	24.0	0.04	0.06	0.14	69	213
75 ISL	9.70	9.69	33.817	26.080	193.7	0.192	2.80	43.7	25.7	1.94	24.6	0.04	0.05	0.12	75	
84	9.37	9.36	33.845	26.156	186.6	0.209	2.86	44.3	27.5	1.97	25.4	0.03	0.03	0.09	84	212
100	9.18	9.17	33.916	26.243	178.7	0.238	2.67	41.2	29.5	2.02	26.2	0.03	0.01	0.07	101	211
119	9.15	9.14	34.019	26.328	170.9	0.272	2.21	34.1	33.0	2.19	27.9	0.02	0.01 A	0.08 A	120	210
125 ISL	9.17	9.16	34.058	26.356	168.5	0.282	2.05	31.7	33.9	2.24	28.3	0.02	0.01	0.08	126	
138	9.21	9.19	34.135	26.410	163.6	0.303	1.75	27.1	35.7	2.32	29.1	0.01	0.01	0.08	139	209
150 ISL	9.12	9.10	34.163	26.446	160.4	0.323	1.64	25.3	37.0	2.39	29.6	0.01	0.01	0.08	151	
170	8.98	8.96	34.203	26.500	155.6	0.354	1.46	22.5	39.3	2.46	30.3	0.01	0.01	0.07	171	208
199	7.98	7.96	34.130	26.597	146.7	0.398	1.74	26.2	44.7	2.47	31.8	0.02	0.01	0.05	200	207
200 ISL	7.96	7.94	34.129	26.599	146.5	0.400	1.74	26.1	44.8	2.47	31.8	0.02			201	
230	7.71	7.69	34.126	26.634	143.6	0.443	1.70	25.4	47.3	2.51	32.6	0.02			231	206
250 ISL	7.61	7.59	34.158	26.673	140.1	0.472	1.46	21.8	50.2	2.60	33.4	0.02			252	
270	7.53	7.50	34.195	26.714	136.6	0.499	1.18	17.6	53.3	2.71	34.3	0.01			272	205
300 ISL	7.33	7.30	34.216	26.760	132.7	0.540	0.97	14.4	56.9	2.80	35.2	0.01			302	
320	7.19	7.16	34.224	26.786	130.5	0.566	0.88	13.0	59.1	2.84	35.8	0.01			322	204
377	6.86	6.82	34.262	26.862	124.0	0.638	0.60	8.8	65.5	2.99	37.4	0.01			379	203
400 ISL	6.68	6.64	34.278	26.899	120.7	0.667	0.50	7.3	68.8	3.07	38.2	0.01			403	
439	6.36	6.32	34.305	26.963	114.9	0.713	0.37	5.4	74.5	3.20	39.4	0.01			442	202
500 ISL	5.99	5.95	34.339	27.037	108.3	0.781	0.26	3.7	81.6	3.22	40.6	0.00			503	
514	5.90	5.86	34.347	27.055	106.8	0.796	0.23	3.3	83.2	3.23	40.9	0.00			518	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 10.1 N	118 54.3 W	18/07/03	1720 UTC	1491 m	260 03 kn	260 03 06	1	1016.5 mb	20.9 C	18.5 C	11m	7/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	18.57	18.57	33.558	24.028	387.3	0.000	5.72	106.9	0.8	0.26	0.0	0.00	0.35	0.08	0	
1 B	18.57	18.57	33.558	24.028	387.4	0.004	5.72	106.9	0.8	0.26	0.0	0.00	0.35	0.08	1	221
6 B	18.06	18.06	33.556	24.153	375.7	0.023	5.79	107.1	0.8	0.26	0.0	0.00	0.45	0.13	6	220
10 ISL	15.82	15.82	33.541	24.667	326.8	0.037	5.71	101.1	1.8	0.51	3.4	0.16	1.82	0.60	10	
15 B	12.80	12.80	33.531	25.295	267.1	0.052	5.47	91.1	4.0	0.90	8.8	0.39	3.58	1.20	15	219
20 ISL	11.75	11.75	33.480	25.456	251.8	0.065	5.08	82.7	7.1	1.16	12.4	0.45	3.63	1.19	20	
22 B	11.65	11.65	33.539	25.521	245.8	0.070	4.90	79.6	8.5	1.25	13.6	0.48	3.65	1.18	22	218
30 B	11.27	11.27	33.530	25.583	240.0	0.089	4.28	69.0	13.5	1.47	16.9	0.26	2.37	0.95	30	217
41 B	10.67	10.67	33.598	25.744	225.0	0.115	3.68	58.6	18.7	1.69	20.4	0.04	0.39	0.24	41	216
50 ISL	10.03	10.02	33.703	25.936	206.9	0.134	3.17	49.8	23.5	1.86	23.2	0.02	0.09	0.07	50	
51	9.97	9.96	33.714	25.954	205.1	0.136	3.13	49.1	23.9	1.87	23.4	0.02	0.06 A	0.07 A	51	215
59	9.85	9.84	33.741	25.996	201.4	0.152	3.05	47.7	24.8	1.90	23.8	0.02	0.04	0.09	59	214
69	9.64	9.63	33.798	26.075	194.0	0.172	2.83	44.1	26.9	1.97	25.0	0.02	0.02	0.09	69	213
75 ISL	9.58	9.57	33.807	26.092	192.5	0.184	2.79	43.4	27.3	1.99	25.3	0.02	0.01	0.08	75	
85	9.49	9.48	33.833	26.127	189.4	0.203	2.75	42.7	27.9	2.00	25.5	0.02	0.01	0.07	85	212
98	9.27	9.26	33.964	26.266	176.5	0.227	2.53	39.1	30.0	2.05	26.3	0.02	0.01	0.06	99	211
100 ISL	9.23	9.22	33.974	26.280	175.1	0.230	2.52	38.9	30.3	2.05	26.4	0.02	0.01	0.06	101	
118	8.90	8.89	34.029	26.376	166.4	0.261	2.44	37.4	33.3	2.11	27.5	0.02	0.01	0.05	119	210
125 ISL	8.85	8.84	34.058	26.407	163.6	0.273	2.30	35.3	34.6	2.16	28.0	0.02	0.01	0.05	126	
138	8.79	8.78	34.112	26.458	158.9	0.293	2.01	30.8	37.0	2.27	29.0	0.02	0.01	0.05	139	209
150 ISL	8.73	8.71	34.151	26.499	155.3	0.312	1.81	27.7	38.8	2.35	29.6	0.02	0.01	0.04	151	
169	8.61	8.59	34.194	26.551	150.7	0.341	1.57	24.0	41.5	2.45	30.4	0.02	0.01	0.03	170	208
198	8.28	8.26	34.217	26.620	144.6	0.384	1.32	20.0	45.8	2.57	31.7	0.02	0.01	0.04	199	207
200 ISL	8.26	8.24	34.218	26.624	144.2	0.387	1.30	19.7	46.1	2.58	31.8	0.02			201	
227	7.97	7.95	34.234	26.680	139.3	0.425	1.11	16.7	49.8	2.67	33.0	0.01			228	206
250 ISL	7.84	7.81	34.250	26.712	136.6	0.457	0.96	14.4	52.1	2.73	33.6	0.01			252	
269	7.75	7.72	34.262	26.735	134.7	0.483	0.86	12.9	53.7	2.78	34.0	0.01			271	205
300 ISL	7.54	7.51	34.268	26.771	131.8	0.524	0.75	11.2	56.5	2.84	34.8	0.01			302	
319	7.38	7.35	34.270	26.795	129.7	0.549	0.70	10.4	58.6	2.88	35.4	0.01			321	204
378	6.73	6.70	34.292	26.903	120.0	0.623	0.57	8.3	68.5	3.05	37.8	0.01			380	203
400 ISL	6.54	6.50	34.301	26.935	117.1	0.649	0.47	6.8	71.5	3.10	38.5	0.01			403	
441	6.26	6.22	34.315	26.983	112.9	0.696	0.30	4.3	76.2	3.18	39.4	0.00			444	202
500 ISL	6.07	6.03	34.328	27.019	110.2	0.762	0.27	3.9	80.9	3.19	39.8	0.00			503	
523	6.00	5.95	34.333	27.032	109.2	0.787	0.26	3.7	82.7	3.20	39.9	0.00			527	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

B) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 0.5 N	119 14.1 W	18/07/03	2011 UTC	1601 m	160 03 kn	280 03 06	2	1017.0 mb	18.7 C	17.6 C	09m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.06	17.06	33.317	24.210	370.0	0.000	6.10	110.6	0.7	0.40	0.1	0.02	0.57	0.13	0	
2	17.06	17.06	33.317	24.210	370.1	0.007	6.10	110.6	0.7	0.40	0.1	0.02	0.57	0.13	2	221
10	16.09	16.09	33.341	24.453	347.2	0.036	6.16	109.6	0.8	0.41	0.2	0.03	1.16	0.31	10	219
20	15.28	15.28	33.337	24.630	330.6	0.070	6.07	106.2	1.2	0.51	1.4	0.10	1.34	0.40	20	218
30	13.40	13.40	33.170	24.897	305.4	0.102	5.85	98.4	3.0	0.66	3.7	0.17	1.31	0.50	30	217
40	12.42	12.41	33.189	25.105	285.8	0.131	5.52	91.0	5.9	0.96	7.9	0.59	1.05	0.44	40	216
50 ISL	11.50	11.49	33.177	25.268	270.5	0.159	5.07	81.9	8.8	1.11	11.1	0.20	0.61	0.41	50	
51	11.41	11.40	33.181	25.287	268.7	0.162	5.02	81.0	9.2	1.13	11.5	0.15	0.56	0.41	51	215
61	10.64	10.63	33.403	25.597	239.3	0.187	4.30	68.3	15.3	1.47	17.2	0.05	0.14	0.19	61	214
70	10.36	10.35	33.464	25.693	230.4	0.208	4.09	64.6	17.1	1.56	18.7	0.04	0.10	0.13	70	213
75 ISL	10.23	10.22	33.502	25.745	225.5	0.220	4.00	63.0	18.1	1.61	19.6	0.04	0.09	0.14	75	
86	9.94	9.93	33.599	25.870	213.9	0.244	3.74	58.6	20.8	1.72	21.6	0.03	0.07	0.16	86	212
100 ISL	9.47	9.46	33.760	26.074	194.8	0.273	3.10	48.1	25.8	1.92	24.6	0.04	0.03	0.14	100	
101	9.44	9.43	33.771	26.087	193.5	0.275	3.05	47.3	26.1	1.93	24.8	0.04	0.03	0.14	101	211
119	9.15	9.14	33.883	26.222	181.0	0.308	2.68	41.3	29.7	2.03	26.6	0.02	0.02	0.12	120	210
125 ISL	9.15	9.14	33.927	26.256	177.9	0.319	2.56	39.5	30.4	2.06	26.9	0.02	0.02	0.11	126	
139	9.16	9.14	34.017	26.326	171.6	0.343	2.31	35.6	32.0	2.13	27.4	0.03	0.01	0.09	140	209
150 ISL	8.94	8.92	34.042	26.380	166.6	0.362	2.24	34.4	34.0	2.18	28.2	0.05	0.01	0.09	151	
168	8.54	8.52	34.068	26.463	159.0	0.391	2.14	32.6	37.6	2.26	29.5	0.08	0.01	0.09	169	208
199	8.43	8.41	34.186	26.573	149.1	0.439	1.61	24.5	42.3	2.46	30.7	0.03	0.01	0.06	200	207
200 ISL	8.42	8.40	34.188	26.576	148.8	0.441	1.59	24.2	42.5	2.47	30.8	0.03			201	
230	8.09	8.07	34.231	26.660	141.3	0.484	1.10	16.6	49.1	2.67	32.9	0.02			231	206
250 ISL	7.92	7.89	34.255	26.705	137.4	0.512	0.90	13.5	52.2	2.76	33.8	0.01			251	
272	7.72	7.69	34.273	26.748	133.5	0.542	0.76	11.4	55.2	2.83	34.6	0.01			274	205
300 ISL	7.37	7.34	34.275	26.800	128.9	0.579	0.64	9.5	60.0	2.91	35.8	0.01			302	
321	7.10	7.07	34.274	26.838	125.5	0.605	0.58	8.6	63.5	2.96	36.7	0.01			323	204
380	6.63	6.60	34.298	26.921	118.2	0.677	0.40	5.8	70.9	3.08	38.2	0.01			382	203
400 ISL	6.46	6.42	34.306	26.950	115.6	0.701	0.36	5.2	73.9	3.12	38.8	0.01			403	
439	6.16	6.12	34.320	27.000	111.2	0.745	0.29	4.2	79.2	3.17	39.7	0.01			442	202
500 ISL	5.99	5.95	34.330	27.030	109.0	0.812			82.7	3.20	40.1	0.01			503	
512	5.96	5.92	34.332	27.036	108.6	0.825	0.34 U	4.9U	83.4	3.21	40.2	0.01			516	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 50.7 N	119 34.4 W	19/07/03	0010 UTC	1831 m	080 02 kn	290 03 07	2	1016.1 mb	18.6 C	17.0 C	30m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	18.05	18.05	33.165	23.856	403.8	0.000	5.55	102.4	1.8	0.37	0.1	0.00	0.09	0.02	0	
2	18.05	18.05	33.165	23.856	403.8	0.008	5.55	102.4	1.8	0.37	0.1	0.00	0.09	0.02	2	221
10 ISL	17.81	17.81	33.164	23.914	398.6	0.040	5.58	102.5	1.8	0.38	0.1	0.00	0.10	0.03	10	
11	17.77	17.77	33.164	23.924	397.7	0.044	5.58	102.4	1.8	0.38	0.1	0.00	0.10	0.03	11	219
20 ISL	17.72	17.72	33.163	23.935	396.9	0.080	5.60	102.7	1.7	0.37	0.1	0.00	0.13	0.03	20	
21	17.72	17.72	33.163	23.935	396.9	0.084	5.60	102.7	1.7	0.37	0.1	0.00	0.13	0.03	21	218
30	16.40	16.40	33.101	24.198	372.1	0.118	5.88	105.1	2.0	0.39	0.1	0.00	0.17	0.05	30	217
38	13.93	13.92	33.078	24.718	322.6	0.146	6.07	103.2	3.0	0.52	0.9	0.13	0.51	0.18	38	216
50 ISL	13.08	13.07	33.067	24.882	307.4	0.184	5.77	96.4	3.7	0.73	4.0	0.19	0.49	0.19	50	
51	13.01	13.00	33.066	24.895	306.1	0.187	5.73	95.5	3.8	0.75	4.3	0.20	0.49	0.19	51	215
60	11.89	11.88	32.996	25.055	291.0	0.214	5.51	89.7	5.7	1.02	6.3	0.13	0.47	0.22	60	214
69	11.24	11.23	33.084	25.243	273.3	0.239	5.20	83.5	8.2	1.03	9.7	0.07	0.47	0.24	69	213
75 ISL	10.93	10.92	33.133	25.336	264.5	0.256	5.04	80.4	9.6	1.11	11.6	0.05	0.37	0.20	75	
84	10.55	10.54	33.229	25.478	251.2	0.279	4.74	75.1	12.1	1.28	14.3	0.03	0.18	0.12	84	212
99	9.96	9.95	33.525	25.809	219.9	0.314	3.87	60.6	18.6	1.64	19.9	0.02	0.02	0.06	99	211
100 ISL	9.92	9.91	33.534	25.823	218.6	0.316	3.86	60.4	18.8	1.64	20.1	0.02	0.02	0.06	100	
119	9.31	9.30	33.637	26.004	201.7	0.356	3.73	57.6	21.8	1.71	21.6	0.01	0.01	0.05	120	210
125 ISL	9.22	9.21	33.681	26.053	197.2	0.368	3.65	56.3	22.8	1.74	22.2	0.01	0.01	0.04	126	
139	9.08	9.06	33.794	26.164	186.9	0.395	3.41	52.5	25.4	1.82	23.6	0.01	0.00	0.03	140	209
150 ISL	8.98	8.96	33.901	26.264	177.7	0.415	3.08	47.3	28.5	1.92	25.1	0.01	0.00	0.03	151	
169	8.82	8.80	34.056	26.411	164.1	0.448	2.54	38.9	33.7	2.09	27.5	0.01	0.00	0.03	170	208
200	8.51	8.49	34.089	26.485	157.5	0.497	2.39	36.4	37.3	2.24	28.8	0.01	0.00	0.03	201	207
230	8.05	8.03	34.090	26.555	151.2	0.544	2.16	32.5	41.6	2.33	30.6	0.01			231	206
250 ISL	8.02	7.99	34.147	26.605	146.8	0.574	1.80	27.1	44.3	2.44	31.5	0.00			251	
268	7.99	7.96	34.192	26.645	143.4	0.600	1.47	22.1	46.6	2.55	32.2	0.00			270	205
300 ISL	7.90	7.87	34.229	26.688	139.9	0.645	1.17	17.6	49.8	2.67	33.1	0.00			302	
319	7.81	7.78	34.239	26.709	138.1	0.671	1.06	15.9	51.8	2.73	33.6	0.00			321	204
379	7.17	7.13	34.272	26.827	127.5	0.751	0.66	9.7	61.3	2.93	36.4	0.00			381	203
400 ISL	6.85	6.81	34.252	26.855	124.9	0.778	0.65	9.5	64.8	2.97	37.4	0.00			403	
439	6.33	6.29	34.222	26.901	120.7	0.825	0.63	9.1	70.9	3.04	38.9	0.01			442	202
500 ISL	6.17	6.13	34.301	26.984	113.5	0.897	0.48	6.9	77.2	3.15	39.9	0.00			503	
518	6.12	6.07	34.325	27.010	111.3	0.917	0.44	6.3	79.0	3.18	40.2	0.00			521	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 31.1 N	120 15.0 W	19/07/03	0543 UTC	3944 m	300 11 kn			1015.8 mb	17.0 C	16.1 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.98	17.98	33.112	23.832	406.0	0.000	5.55	102.3	1.8	0.36	0.1	0.00	0.12	0.03	0	
2	17.98	17.98	33.112	23.833	406.1	0.008	5.55	102.3	1.8	0.36	0.1	0.00	0.12	0.03	2	221
10 ISL	17.97	17.97	33.114	23.837	405.9	0.041	5.56	102.4	1.8	0.37	0.1	0.00	0.12	0.04	10	
11	17.97	17.97	33.114	23.837	406.0	0.045	5.56	102.4	1.8	0.37	0.1	0.00	0.12	0.04	11	219
20 ISL	17.70	17.70	33.112	23.901	400.2	0.081	5.62	103.0	1.8	0.37	0.1	0.00	0.15	0.05	20	
21	17.67	17.67	33.111	23.908	399.6	0.085	5.63	103.1	1.8	0.37	0.1	0.00	0.15	0.05	21	218
30 ISL	16.48	16.48	33.065	24.152	376.5	0.120	5.89	105.4	2.1	0.38	0.1	0.00	0.18	0.07	30	
31	16.29	16.29	33.059	24.191	372.8	0.124	5.92	105.5	2.1	0.38	0.1	0.00	0.19	0.07	31	217
40	14.54	14.53	33.039	24.561	337.7	0.156	6.16	106.0	2.3	0.43	0.1	0.00	0.28	0.11	40	216
50	13.77	13.76	33.054	24.733	321.6	0.189	5.85	99.1	3.0	0.59	2.0	0.27	0.58	0.18	50	215
60	12.93	12.92	33.099	24.936	302.4	0.220	5.52	91.9	4.3	0.86	6.1	0.35	0.62	0.30	60	214
70	12.15	12.14	33.199	25.165	280.9	0.249	5.12	83.9	7.4	1.06	10.3	0.10	0.40	0.30	70	213
75 ISL	11.87	11.86	33.220	25.234	274.4	0.263	5.01	81.6	8.5	1.12	11.5	0.08	0.30	0.27	75	
85	11.34	11.33	33.268	25.368	261.8	0.290	4.76	76.7	10.8	1.24	13.5	0.03	0.15	0.18	85	212
100	10.23	10.22	33.474	25.724	228.1	0.326	3.99	62.8	17.1	1.56	18.7	0.02	0.02	0.07	100	211
120	9.67	9.66	33.615	25.928	209.0	0.370	3.57	55.6	21.2	1.72	21.6	0.01	0.01	0.06	121	210
125 ISL	9.58	9.57	33.657	25.976	204.6	0.380	3.45	53.6	22.2	1.76	22.3	0.01	0.01	0.06	126	
139	9.38	9.36	33.770	26.097	193.4	0.408	3.13	48.5	25.0	1.87	24.0	0.01	0.01	0.05	140	209
150 ISL	9.21	9.19	33.833	26.174	186.3	0.429	2.99	46.1	26.8	1.92	25.0	0.01	0.01	0.04	151	
171	8.92	8.90	33.921	26.289	175.6	0.467	2.80	42.9	29.8	1.99	26.4	0.01	0.00	0.03	172	208
200 ISL	8.64	8.62	34.014	26.406	165.0	0.517	2.48	37.8	34.0	2.13	28.2	0.00	0.00	0.03	201	
201	8.63	8.61	34.016	26.409	164.7	0.518	2.47	37.7	34.2	2.13	28.3	0.00	0.00	0.03	202	207
231	8.13	8.11	34.056	26.517	154.9	0.566	2.32	35.0	39.4	2.24	29.8	0.01			232	206
250 ISL	7.83	7.81	34.065	26.568	150.2	0.595	2.20	32.9	42.5	2.31	30.7	0.01			251	
269	7.56	7.53	34.072	26.613	146.1	0.623	2.06	30.7	45.5	2.38	31.7	0.00			271	205
300 ISL	7.22	7.19	34.097	26.681	140.0	0.668	1.75	25.8	50.7	2.53	33.3	0.00			302	
317	7.06	7.03	34.113	26.716	136.9	0.691	1.56	23.0	53.6	2.61	34.2	0.00			319	204
379	6.53	6.50	34.171	26.834	126.3	0.773	0.93	13.5	64.6	2.87	37.2	0.00			381	203
400 ISL	6.35	6.31	34.184	26.868	123.2	0.799	0.78	11.3	68.2	2.94	38.1	0.00			402	
439	6.01	5.97	34.204	26.927	117.8	0.846	0.58	8.3	74.8	3.06	39.6	0.00			442	202
500 ISL	5.52	5.48	34.237	27.014	109.9	0.915	0.43	6.1	84.2	3.16	41.2	0.00			503	
516	5.39	5.35	34.246	27.037	107.8	0.933	0.39	5.5	86.7	3.18	41.6	0.00			519	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 10.9 N	120 55.4 W	19/07/03	1110 UTC	3848 m	320 06 kn			1016.5 mb	16.1 C	15.3 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.76	16.76	33.072	24.092	381.3	0.000	5.79	104.2	1.1	0.40	0.2	0.00	0.31	0.07	0	
2	16.76	16.76	33.072	24.092	381.3	0.008	5.79	104.2	1.1	0.40	0.2	0.00	0.31	0.07	2	220
10 ISL	16.64	16.64	33.081	24.127	378.3	0.038	5.84	104.8	1.1	0.39	0.2	0.00	0.36	0.12	10	
11	16.62	16.62	33.082	24.132	377.8	0.042	5.85	105.0	1.1	0.39	0.2	0.00	0.37	0.13	11	219
20	15.94	15.94	33.130	24.325	359.7	0.075	6.08	107.7	1.1	0.42	0.3	0.01	0.44	0.13	20	218
29	15.31	15.31	33.085	24.430	349.9	0.107	6.04	105.6	1.2	0.46	0.9	0.10	0.91	0.10	29	217
30 ISL	15.19	15.19	33.076	24.449	348.1	0.110	6.03	105.2	1.2	0.47	1.0	0.11	0.90	0.12	30	
41	13.95	13.94	33.011	24.663	328.1	0.148	5.85	99.4	1.5	0.60	2.3	0.25	0.59	0.35	41	216
49	13.60	13.59	33.034	24.752	319.7	0.174	5.73	96.7	3.2	0.68	3.3	0.41	0.52	0.32	49	215
50 ISL	13.52	13.51	33.036	24.770	318.1	0.177	5.72	96.4	3.3	0.69	3.5	0.40	0.50	0.32	50	
61	12.24	12.23	33.003	24.995	296.8	0.211	5.61	92.0	5.4	0.87	6.5	0.18	0.28	0.32	61	214
71	10.49	10.48	32.882	25.217	275.6	0.239	5.43	85.7	9.1	1.09	11.0	0.08	0.11	0.14	71	213
75 ISL	10.36	10.35	32.979	25.315	266.4	0.250	5.30	83.5	10.4	1.17	12.4	0.05	0.08	0.11	75	
84	10.08	10.07	33.187	25.525	246.6	0.273	4.92	77.1	13.3	1.33	15.0	0.02	0.04	0.07	84	212
100	9.67	9.66	33.446	25.796	221.2	0.310	4.12	64.1	18.2	1.57	19.3	0.02	0.02	0.06	100	211
120	9.58	9.57	33.726	26.030	199.4	0.353	3.20	49.8	23.9	1.84	23.3	0.01	0.01	0.06	121	210
125 ISL	9.51	9.50	33.770	26.076	195.1	0.362	3.06	47.5	25.0	1.88	24.0	0.01	0.01	0.06	126	
139	9.30	9.28	33.866	26.185	185.0	0.389	2.78	43.0	27.7	1.98	25.4	0.01	0.01	0.07	140	209
150 ISL	9.14	9.12	33.930	26.261	178.0	0.409	2.62	40.4	29.8	2.04	26.3	0.01	0.01	0.06	151	
169	8.88	8.86	34.014	26.368	168.1	0.442	2.42	37.1	33.3	2.13	27.6	0.01	0.00	0.05	170	208
198	8.55	8.53	34.081	26.472	158.7	0.489	2.11	32.1	37.6	2.26	29.2	0.01	0.00	0.04	199	207
200 ISL	8.52	8.50	34.082	26.478	158.2	0.492	2.11	32.1	37.8	2.27	29.3	0.01			201	
229	8.05	8.03	34.081	26.548	151.8	0.537	2.07	31.2	41.5	2.34	30.5	0.01			230	206
250 ISL	7.74	7.72	34.089	26.600	147.1	0.569	1.91	28.5	45.2	2.43	31.6	0.01			251	
269	7.49	7.46	34.100	26.645	143.1	0.596	1.72	25.6	48.8	2.52	32.6	0.01			271	205
300 ISL	7.17	7.14	34.124	26.709	137.3	0.640	1.42	21.0	54.2	2.65	34.1	0.01			302	
318	7.00	6.97	34.138	26.744	134.2	0.664	1.26	18.5	57.2	2.72	34.9	0.01			320	204
379	6.38	6.35	34.159	26.844	125.2	0.743	0.90	13.0	67.1	2.91	37.1	0.01			381	203
400 ISL	6.25	6.21	34.180	26.878	122.2	0.769	0.76	11.0	70.3	2.97	37.7	0.01			403	
438	6.07	6.03	34.223	26.935	117.2	0.815	0.54	7.8	75.6	3.08	38.7	0.01			441	202
500 ISL	5.74	5.70	34.271	27.015	110.2	0.885	0.36	5.1	83.2	3.19	39.9	0.01			503	
516	5.66	5.62	34.283	27.034	108.5	0.903	0.31	4.4	85.1	3.22	40.2	0.01			519	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
30 51.3 N	121 36.0 W	19/07/03	1858 UTC	4067 m	010 06 kn	010 04 05	2	1018.8 mb	18.9 C	17.1 C	19m	8/8 SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.21	17.21	32.739	23.731	415.7	0.000	5.67	102.7	1.9	0.39	0.1	0.00	0.17	0.04	0	
3 A	17.21	17.21	32.739	23.731	415.8	0.012	5.67	102.7	1.9	0.39	0.1	0.00	0.17	0.04	3	222
10 ISL	17.16	17.16	32.739	23.743	414.8	0.042	5.67	102.6	1.8	0.38	0.1	0.00	0.18	0.04	10	
13 A	17.13	17.13	32.739	23.751	414.3	0.054	5.67	102.5	1.7	0.38	0.1	0.00	0.18	0.04	13	220
20 ISL	17.13	17.13	32.745	23.755	414.0	0.083	5.66	102.4	1.7	0.39	0.0	0.00	0.20	0.05	20	
24 A	17.13	17.13	32.749	23.759	413.9	0.100	5.66	102.4	1.8	0.39	0.0	0.00	0.21	0.06	24	219
30 ISL	17.09	17.09	32.785	23.796	410.5	0.124	5.67	102.5	1.8	0.39	0.0	0.00	0.25	0.08	30	
37 A	16.98	16.97	32.804	23.836	406.8	0.153	5.70	102.8	1.8	0.38	0.0	0.00	0.30	0.10	37	218
44	16.74	16.73	33.008	24.049	386.8	0.181	5.76	103.5	1.8	0.38	0.1	0.00	0.34	0.13	44	217
50 ISL	16.17	16.16	33.081	24.236	369.1	0.203	5.80	103.1	1.8	0.37	0.1	0.00	0.33	0.17	50	
51 A	16.07	16.06	33.086	24.263	366.6	0.207	5.81	103.1	1.8	0.37	0.1	0.00	0.33	0.18	51	216
61	15.46	15.45	33.073	24.389	354.8	0.243	5.85	102.6	1.9	0.40	0.0	0.00	0.35	0.26	61	215
72 A	14.64	14.63	33.052	24.551	339.7	0.281	5.86	101.0	2.2	0.49	0.0	0.00	0.39	0.35	72	214
75 ISL	14.31	14.30	33.029	24.603	334.8	0.291	5.84	100.0	2.4	0.48	0.1	0.02	0.39	0.36	75	
77	14.10	14.09	33.016	24.636	331.6	0.298	5.83	99.4	2.5	0.48	0.2	0.03	0.39	0.37	77	213
85	13.75	13.74	33.022	24.713	324.4	0.324	5.77	97.7	2.8	0.51	0.6	0.09	0.34	0.38	85	212
94	12.30	12.29	32.977	24.964	300.5	0.352	5.53	90.8	4.5	0.79	4.8	0.06	0.21	0.24	94	211
100 ISL	12.17	12.16	33.075	25.065	291.1	0.370	5.36	87.8	5.8	0.92	7.1	0.04	0.14	0.17	100	
110	11.95	11.94	33.196	25.201	278.4	0.399	5.04	82.2	8.2	1.09	10.3	0.01	0.05	0.08	110	210
125	10.96	10.94	33.317	25.475	252.4	0.438	4.49	71.8	12.6	1.35	14.7	0.01	0.02	0.04	125	209
144	10.14	10.12	33.525	25.780	223.7	0.484	3.77	59.3	18.4	1.62	19.8	0.00	0.01	0.04	145	208
150 ISL	9.93	9.91	33.587	25.864	215.9	0.497	3.62	56.7	19.9	1.68	20.8	0.00	0.01	0.04	151	
169	9.41	9.39	33.761	26.086	195.1	0.536	3.28	50.8	23.8	1.81	23.0	0.01	0.00	0.04	170	207
200 ISL	9.04	9.02	33.933	26.280	177.1	0.594	2.96	45.5	28.1	1.94	25.2	0.01	0.00	0.03	201	
227	8.86	8.84	34.007	26.367	169.4	0.640	2.76	42.3	31.4	2.02	26.7	0.00	0.00	0.02	228	206
250 ISL	8.53	8.50	34.040	26.444	162.3	0.679	2.49	37.9	35.4	2.14	28.6	0.00			251	
268	8.27	8.24	34.054	26.495	157.7	0.707	2.28	34.5	38.5	2.23	30.0	0.00			269	205
300 ISL	7.92	7.89	34.087	26.573	150.7	0.757	1.96	29.4	43.1	2.37	31.6	0.00			302	
319	7.74	7.71	34.106	26.615	147.0	0.785	1.77	26.5	45.9	2.46	32.5	0.00			321	204
378	7.13	7.09	34.168	26.751	134.7	0.868	1.09	16.1	57.2	2.77	35.9	0.00			380	203
400 ISL	6.93	6.89	34.184	26.791	131.0	0.897	0.93	13.6	60.7	2.85	36.8	0.00			402	
439	6.60	6.56	34.209	26.855	125.3	0.947	0.72	10.5	66.7	2.97	38.2	0.00			442	202
500 ISL	6.05	6.01	34.251	26.960	115.7	1.021	0.47	6.8	77.1	3.10	40.3	0.00			503	
518	5.89	5.84	34.264	26.991	112.8	1.041	0.39	5.6	80.2	3.14	40.9	0.00			521	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 30.8 N	122 15.7 W	19/07/03	2333 UTC	4186 m	340 10 kn	360 04 08	2	1018.1 mb	18.1 C	16.9 C	23m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	17.96	17.96	32.848	23.635	424.8	0.000	5.60	103.0	1.9	0.38	0.3	0.00	0.13	0.02	0	
2	17.96	17.96	32.848	23.635	424.9	0.008	5.60	103.0	1.9	0.38	0.3	0.00	0.13	0.02	2	221
10 ISL	17.84	17.84	32.846	23.663	422.5	0.042	5.61	102.9	1.9	0.37	0.2	0.00	0.12	0.03	10	
15	17.75	17.75	32.845	23.684	420.7	0.063	5.61	102.8	1.9	0.37	0.2	0.00	0.12	0.03	15	219
20 ISL	17.74	17.74	32.848	23.689	420.4	0.084	5.61	102.7	1.9	0.37	0.2	0.00	0.13	0.03	20	
30 ISL	17.71	17.70	32.847	23.696	420.0	0.127	5.61	102.7	1.9	0.37	0.2	0.00	0.15	0.03	30	
31	17.71	17.70	32.846	23.695	420.1	0.131	5.61	102.7	1.9	0.37	0.2	0.00	0.15	0.03	31	218
46	17.33	17.32	33.234	24.084	383.6	0.191	5.76	104.9	1.6	0.35	0.2	0.00	0.19	0.05	46	217
50 ISL	17.16	17.15	33.258	24.143	378.1	0.206	5.78	104.9	1.6	0.35	0.2	0.00	0.19	0.05	50	
59	16.65	16.64	33.245	24.252	367.9	0.240	5.82	104.6	1.7	0.36	0.2	0.00	0.20	0.07	59	216
74	15.33	15.32	33.145	24.474	347.2	0.293	5.90	103.2	2.0	0.39	0.2	0.00	0.23	0.14	74	215
75 ISL	15.22	15.21	33.138	24.492	345.4	0.297	5.90	103.0	2.0	0.39	0.2	0.00	0.24	0.15	75	
85	14.15	14.14	33.079	24.675	328.1	0.331	5.86	100.0	2.4	0.47	0.3	0.00	0.31	0.28	85	214
94	13.24	13.23	33.045	24.834	313.1	0.359	5.68	95.1	3.6	0.61	2.0	0.14	0.31	0.36	94	213
100 ISL	12.50	12.49	33.058	24.989	298.4	0.378	5.47	90.2	5.1	0.76	4.9	0.10	0.24	0.30	100	
104	12.05	12.04	33.083	25.094	288.4	0.390	5.32	86.9	6.2	0.86	6.9	0.05	0.19	0.25	104	212
115	11.49	11.48	33.209	25.296	269.4	0.420	4.96	80.1	8.7	1.04	9.9	0.02	0.14	0.18	115	211
125	11.41	11.39	33.358	25.427	257.2	0.447	4.54	73.3	10.9	1.18	12.2	0.01	0.10	0.13	125	210
138	11.10	11.08	33.516	25.606	240.4	0.479	4.09	65.7	13.6	1.34	14.8	0.01	0.03	0.06	139	209
150 ISL	10.63	10.61	33.612	25.764	225.6	0.507	3.81	60.6	16.4	1.48	17.2	0.01	0.02	0.05	151	
161	10.20	10.18	33.685	25.895	213.2	0.531	3.61	56.9	19.1	1.59	19.2	0.00	0.02	0.04	162	208
192	9.70	9.68	33.932	26.172	187.5	0.593	2.98	46.5	25.7	1.85	23.2	0.00	0.00	0.03	193	207
200 ISL	9.57	9.55	33.968	26.222	182.9	0.608	2.96	46.1	26.8	1.88	23.8	0.00			201	
227	9.08	9.06	34.037	26.356	170.5	0.656	2.90	44.7	30.3	1.93	25.2	0.00			228	206
250 ISL	8.59	8.56	34.053	26.445	162.3	0.694	2.86	43.6	34.1	1.99	26.6	0.00			251	
268	8.23	8.20	34.055	26.502	157.1	0.723	2.82	42.6	37.3	2.06	27.8	0.00			269	205
300 ISL	7.79	7.76	34.080	26.587	149.3	0.772	2.36	35.3	43.7	2.27	30.2	0.00			302	
317	7.61	7.58	34.095	26.625	145.9	0.797	2.07	30.8	47.0	2.39	31.5	0.00			319	204
379	6.99	6.95	34.138	26.746	135.0	0.884	1.41	20.7	56.3	2.67	34.9	0.00			381	203
400 ISL	6.93	6.89	34.176	26.785	131.6	0.912	1.13	16.6	59.1	2.77	35.8	0.00			402	
438	6.84	6.80	34.243	26.850	126.0	0.961	0.69	10.1	64.3	2.93	37.2	0.00			441	202
500 ISL	6.25	6.21	34.265	26.946	117.2	1.036	0.48	6.9	74.2	3.07	39.4	0.00			503	
516	6.10	6.05	34.272	26.971	115.0	1.055	0.43	6.2	76.8	3.11	40.0	0.00			519	201

RV NEW HORIZON CALCOFI CRUISE 0307 STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 10.9 N	122 55.7 W	20/07/03	0456 UTC	3742 m	360 08 kn			1018.3 mb	18.2 C	17.1 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	19.03	19.03	33.157	23.607	427.6	0.000	5.43	102.1	1.5	0.36	0.3	0.00	0.08	0.02	0	
2	19.03	19.03	33.157	23.607	427.6	0.009	5.43	102.1	1.5	0.36	0.3	0.00	0.08	0.02	2	220
10 ISL	19.01	19.01	33.157	23.612	427.4	0.043	5.43	102.1	1.5	0.36	0.2	0.00	0.08	0.01	10	
16	19.00	19.00	33.157	23.615	427.4	0.068	5.44	102.2	1.5	0.36	0.2	0.00	0.08	0.01	16	219
20 ISL	18.96	18.96	33.157	23.625	426.5	0.085	5.45	102.3	1.5	0.36	0.2	0.00	0.09	0.01	20	
30	18.85	18.84	33.157	23.653	424.2	0.128	5.46	102.3	1.5	0.36	0.2	0.00	0.13	0.03	30	218
46	17.83	17.82	33.130	23.885	402.6	0.194	5.66	104.0	1.6	0.36	0.2	0.00	0.19	0.04	46	217
50 ISL	17.55	17.54	33.115	23.941	397.4	0.210	5.70	104.2	1.6	0.36	0.2	0.00	0.20	0.04	50	
61	16.84	16.83	33.104	24.100	382.5	0.253	5.78	104.2	1.7	0.37	0.2	0.00	0.22	0.06	61	216
75 ISL	16.35	16.34	33.237	24.316	362.3	0.305	5.81	103.8	1.4	0.37	0.1	0.00	0.24	0.10	75	
76	16.30	16.29	33.243	24.332	360.8	0.309	5.81	103.7	1.4	0.37	0.1	0.00	0.24	0.11	76	215
84	15.37	15.36	33.160	24.477	347.2	0.337	5.83	102.1	1.6	0.40	0.2	0.00	0.24	0.17	84	214
94	14.04	14.03	33.080	24.699	326.1	0.371	5.82	99.1	2.3	0.47	0.5	0.03	0.32	0.28	94	213
100 ISL	13.21	13.20	33.031	24.830	313.7	0.390	5.74	96.1	3.0	0.57	1.9	0.10	0.30	0.29	100	
104	12.71	12.70	33.009	24.911	306.0	0.402	5.66	93.7	3.6	0.64	3.1	0.13	0.28	0.29	104	212
115	11.80	11.79	33.040	25.108	287.3	0.435	5.41	87.9	5.7	0.84	6.9	0.05	0.22	0.21	115	211
125	11.66	11.64	33.174	25.238	275.2	0.463	5.07	82.2	7.4	0.98	9.1	0.02	0.17	0.18	125	210
140	10.69	10.67	33.304	25.513	249.1	0.502	4.77	75.8	10.8	1.17	12.9	0.01	0.09	0.11	141	209
150 ISL	10.30	10.28	33.424	25.674	234.0	0.527	4.41	69.5	13.6	1.33	15.6	0.00	0.06	0.08	151	
165	9.94	9.92	33.609	25.880	214.7	0.560	3.84	60.1	17.9	1.55	19.1	0.00	0.03	0.04	166	208
195	9.52	9.50	33.894	26.172	187.5	0.621	3.17	49.3	24.6	1.80	23.0	0.00	0.00	0.02	196	207
200 ISL	9.48	9.46	33.928	26.205	184.4	0.630	3.09	48.0	25.5	1.83	23.4	0.00			201	
231	9.21	9.18	34.065	26.357	170.6	0.685	2.72	42.0	30.2	1.99	25.5	0.00			232	206
250 ISL	8.86	8.83	34.086	26.429	163.9	0.717	2.65	40.6	32.9	2.05	26.6	0.00			251	
269	8.50	8.47	34.094	26.491	158.2	0.747	2.56	38.9	35.8	2.11	27.8	0.00			270	205
300 ISL	8.25	8.22	34.155	26.578	150.5	0.795	1.94	29.3	41.4	2.35	30.1	0.00			302	
320	8.13	8.10	34.193	26.626	146.2	0.825	1.50	22.6	45.2	2.52	31.6	0.00			322	204
381	7.33	7.29	34.206	26.753	134.7	0.910	1.07	15.9	55.1	2.74	34.6	0.00			383	203
400 ISL	7.18	7.14	34.215	26.781	132.2	0.936	0.95	14.0	57.6	2.80	35.3	0.00			402	
435	6.95	6.91	34.237	26.830	127.9	0.981	0.74	10.9	62.0	2.91	36.5	0.00			438	202
500 ISL	6.58	6.53	34.292	26.924	119.7	1.062	0.42	6.1	69.7	3.06	38.2	0.00			503	
514	6.50	6.45	34.304	26.944	117.9	1.078	0.35	5.1	71.4	3.09	38.6	0.00			517	201

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON — CALCOFI CRUISE 0307 — STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 54.2 N	121 12.1 W	29/07/03	1841 UTC	10 m		1210 - 1933 PST	1210 PST	1935 PST	644.6 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	15.38	33.176	24.484	6.52	114.2	1.4	0.54	3.3	0.15	0.52	0.28	74. A	20.8	20.0	20.4	0.31
7	15.29	33.188	24.513	6.57	114.9	1.2	0.53	3.4	0.15	0.71	0.35	34.	31.7	32.7	32.2	0.32
12	12.06	33.389	25.328	6.83	111.9	3.1	0.86	5.7	0.27	1.76	0.55	16.	32.7	34.5	33.6	0.33
20	10.93	33.410	25.551	5.56	88.9	12.7	1.35	15.0	0.34	1.72	0.70	4.6	13.8	19.1	16.4	0.25
26	10.82	33.407	25.568	5.42	86.4	13.8	1.39	15.5	0.36	1.58	0.68	1.8	6.2	6.8	6.5	0.31
38	10.55	33.524	25.707	4.98	79.0	18.2	1.58	17.7	0.34	0.57	0.43	0.29	0.00	0.04	0.02	0.21

RV NEW HORIZON — CALCOFI CRUISE 0307 — STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 42.7 N	123 38.1 W	28/07/03	2015 UTC	23 m		1315 - 1940 PST	1220 PST	1947 PST	131.0 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	17.43	32.645	23.607	5.66	102.9	1.6	0.36	0.0	0.00	0.15	0.04	88. A	3.3	3.1	3.2	0.27
13	17.18	32.639	23.662	5.67	102.6	1.6	0.36	0.0	0.00	0.15	0.04	42.	3.2	3.3	3.2	0.30
30	14.34	32.687	24.331	6.18	105.7	2.2	0.38	0.0	0.00	0.16	0.05	14.	1.7	1.5	1.6	0.25
44	14.47	32.983	24.533	6.03	103.6	2.4	0.35	0.0	0.00	0.22	0.10	5.3	1.0	1.1	1.1	0.14
53	14.28	33.087	24.653	5.96	102.0	2.5	0.34	0.0	0.00	0.27	0.19					
62	13.23	32.982	24.787	5.87	98.3	3.2	0.45	0.9	0.08	0.35	0.30	1.6	0.94	0.96	0.95	0.25
67	12.65	32.996	24.911	5.70	94.3	4.0	0.58	2.7	0.21	0.31	0.31					
78	11.21	32.898	25.104	5.62	90.1	6.0	0.79	6.3	0.12	0.17	0.26					
86	10.92	33.004	25.238	5.45	86.9	7.1	0.87	7.8	0.05	0.14	0.19	0.32	-0.02	0.00	-0.01	0.15

RV NEW HORIZON — CALCOFI CRUISE 0307 — STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 29.5 N	122 31.6 W	27/07/03	1912 UTC	16 m		1223 - 1942 PST	1217 PST	1943 PST	496.4 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	16.16	32.958	24.142	6.02	107.0	3.0	0.57	2.7	0.11	0.41	0.11	75. A	15.2	14.0	14.6	0.29
11	15.01	33.001	24.430	6.10	106.0	2.9	0.60	3.1	0.16	0.41	0.17	35.	17.9	18.0	18.0	0.29
21	13.73	33.014	24.709	6.30	106.6	4.2	0.71	4.8	0.17	0.61	0.32	13.	15.0	15.7	15.4	0.47
32	12.99	33.110	24.932	5.93	98.9	3.1	0.92	6.5	0.20	0.35	0.18	4.6	3.8	3.7	3.8	0.16
39	12.39	33.113	25.051	5.77	95.0	4.5	0.98	7.6	0.28	0.55	0.36					
45	11.88	33.145	25.173	5.62	91.6	6.8	1.10	9.3	0.26	0.32	0.25	1.3	1.5	1.9	1.7	0.29
53	11.70	33.231	25.273	5.60	90.9	8.5	1.19	10.7	0.26	0.25	0.24					
61	11.01	33.324	25.471	5.05	80.8	12.0	1.38	13.6	0.30	0.09	0.15	0.29	-0.01	0.07	0.03	0.17

RV NEW HORIZON — CALCOFI CRUISE 0307 — STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 17.2 N	120 1.3 W	26/07/03	1831 UTC	5 m		1208 - 1942 PST	1207 PST	1940 PST	2152.1 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	19.41	33.477	23.754	6.35	120.5	1.0	0.08	0.0	0.01	1.83	0.55	54. A	167.3	201.6	184.5	1.4
3	19.26	33.474	23.791	6.39	120.9	1.1	0.09	0.0	0.02	1.91	0.58	40.	238.6	184.3	211.5	5.6
7	18.88	33.469	23.883	6.39	120.0	1.1	0.11	-0.2	0.22	2.54	0.95	12.	198.6	120.4	159.5	2.1
11	18.47	33.472	23.988	6.47	120.6	1.0	0.13	-0.3	0.34	2.74	0.86	3.4	90.4	90.0	90.2	2.2
15	17.15	33.444	24.286	6.69	121.6	1.0	0.19	-0.4	0.35	4.48	1.53	1.00	19.9	61.0	40.5	2.6
19	15.91	33.467	24.590	6.16	109.2	2.4	0.38	0.1	0.05	2.09	1.01	0.29	1.3	0.09	0.67	1.1

A) INCUBATION LIGHT INTENSITIES WERE 94, 39, 13, 5.0, 1.5, 0.29 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON — CALCOFI CRUISE 0307 — STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 14.1 N	121 25.8 W	25/07/03	1835 UTC	20 m		1155 - 1935 PST	1210 PST	1934 PST	562.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	17.14	32.968	23.923	5.69	103.1	1.5	0.38	0.0	0.00	0.23	0.06	86. A	6.6	6.8	6.7	0.16
12	17.00	32.959	23.950	5.71	103.1	1.5	0.38	0.0	0.00	0.25	0.07	40.	8.6	9.3	8.9	0.13
20	15.23	32.902	24.306	6.13	106.9	1.4	0.45	0.8	0.08	0.67	0.21					
28	13.74	32.817	24.555	6.22	105.1	1.4	0.52	1.6	0.18	0.90	0.31	12.	20.4	21.3	20.8	0.19
38	13.32	32.933	24.730	5.97	100.1	2.3	0.70	3.8	0.30	0.72	0.33	5.4	8.2	8.9	8.6	0.20
47	12.73	33.006	24.903	5.78	95.8	5.1	0.86	6.1	0.31	0.40	0.28					
56	12.14	33.028	25.033	5.59	91.5	6.4	1.01	8.1	0.40	0.20	0.16	1.4	0.48	0.54	0.51	0.22
66	12.61	33.361	25.202	5.48	90.8	6.8	1.02	6.6	0.30	0.08	0.14					
75	11.18	33.260	25.391	5.10	81.9	11.3	1.31	12.6	0.52	0.11	0.15	0.32	-0.02	0.03	0.01	0.15

RV NEW HORIZON — CALCOFI CRUISE 0307 — STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 9.3 N	120 1.0 W	23/07/03	1810 UTC	7 m		1215 - 1934 PST	1206 PST	1930 PST	738.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	16.84	33.511	24.410	6.02	108.8	0.9	0.31	0.1	0.02	2.09	0.44	64. A	68.5	67.3	67.9	0.51
6	16.74	33.510	24.433	5.99	108.0	0.8	0.32	0.0	0.02	2.12	0.48	27.	60.4	60.4	60.4	0.55
9	16.43	33.524	24.516	5.96	106.8	0.8	0.37	0.4	0.03	2.15	0.64	14.	35.0	35.4	35.2	0.41
15	16.09	33.538	24.604	5.83	103.8	0.9	0.42	1.0	0.05	2.05	0.70	3.7	14.9	16.4	15.7	0.27
19	14.48	33.587	24.996	5.34	92.1	2.7	0.79	4.8	0.13	2.25	1.13	1.6	2.2	2.3	2.3	0.25
27	12.16	33.628	25.495	4.41	72.5	11.5	1.32	12.6	0.23	0.91	0.75	0.27	1.2	1.4	1.3	0.18

RV NEW HORIZON — CALCOFI CRUISE 0307 — STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 29.0 N	117 46.1 W	22/07/03	1859 UTC	7 m		1205 - 1937 PST	1200 PST	1931 PST	351.5 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	20.50	33.505	23.491	6.01	116.4	1.1	0.17	0.0	0.00	1.03	0.38	64. A	48.3	52.5	50.4	0.37
4	19.35	33.476	23.769	6.13	116.2	1.2	0.24	0.0	0.00	0.52	0.13	42.	21.0	20.6	20.8	0.34
10	15.74	33.286	24.489	6.65	117.4	1.3	0.31	0.0	0.00	0.65	0.19	11.	12.7	12.5	12.6	0.39
13	14.46	33.299	24.778	6.74	116.0	1.4	0.37	0.0	0.00	0.89	0.32	5.8	6.5	7.2	6.8	0.39
19	13.48	33.276	24.963	6.26	105.6	2.1	0.55	2.1	0.11	1.37	0.58	1.6	4.0	4.5	4.2	0.29
27	12.58	33.317	25.173	5.30	87.7	5.5	0.94	7.4	0.48	1.12	0.57	0.27	0.08	0.12	0.10	0.13

RV NEW HORIZON — CALCOFI CRUISE 0307 — STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 25.6 N	119 58.2 W	21/07/03	1632 UTC	9 m		1210 - 1930 PST	1205 PST	1930 PST	636.8 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	16.07	33.331	24.449	6.11	108.6	1.1	0.45	0.9	0.06	0.93	0.28	71. A	15.8	30.1	23.0	0.29
5	16.06	33.332	24.452	6.14	109.1	1.1	0.45	0.9	0.06	0.93	0.29	43.	38.8	38.8	38.8	0.27
12	14.47	33.247	24.735	6.15	105.8	1.6	0.57	2.1	0.15	1.45	0.48	13.	32.9	33.4	33.2	0.26
18	14.19	33.303	24.838	5.97	102.2	1.9	0.68	3.1	0.19	1.68	0.63	4.6	15.6	16.1	15.8	0.25
25	13.57	33.282	24.949	5.65	95.5	3.1	0.84	4.7	0.34	1.06	0.50	1.4	4.9	5.9	5.4	0.18
34	13.28	33.373	25.078	5.46	91.7	5.1	1.01	6.1	0.36	0.67	0.42	0.30	0.15	0.12	0.13	0.12

A) INCUBATION LIGHT INTENSITIES WERE 94, 39, 13, 5.0, 1.5, 0.29 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON — CALCOFI CRUISE 0307 — STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 6.0 N	122 40.1 W	20/07/03	1701 UTC	21 m		1215 - 1933 PST	1215 PST	1936 PST	103.3 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	18.30	33.005	23.673	5.50	101.9	1.6	0.36	0.3	0.00	0.10	0.03	80. A	1.8	1.6	1.7	0.10
13	18.28	33.003	23.676	5.50	101.9	1.5	0.37	0.2	0.00	0.10	0.03	39.	2.8	2.7	2.8	0.12
28	18.27	33.001	23.678	5.49	101.7	1.9	0.37	0.2	0.00	0.11	0.03	13.	2.1	2.1	2.1	0.11
40	18.23	32.990	23.680	5.51	101.9	1.8	0.36	0.3	0.00	0.13	0.03	5.4	0.87	0.86	0.87	0.09
57	16.82	33.070	24.079	5.77	103.9	1.9	0.37	0.3	0.00	0.21	0.07	1.6	0.64	0.69	0.67	0.08
68	16.26	33.085	24.219	5.78	103.0	2.0	0.37	0.2	0.00	0.21	0.09					
80	15.13	33.012	24.415	5.87	102.2	1.9	0.40	0.3	0.00	0.26	0.15	0.29	0.03	0.03	0.03	0.05

RV NEW HORIZON — CALCOFI CRUISE 0307 — STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 57.3 N	117 18.4 W	17/07/03	1825 UTC	4 m		1140 - 1935 PST	1155 PST	1926 PST	598.6 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	22.10	33.588	23.119	6.76	134.8	0.8	0.05	0.0	0.01	4.06	0.93	46. A	98.8	101.5	100.2	1.5
4	21.85	33.579	23.182	6.77	134.4	0.6	0.04	0.0	0.01	3.78	0.90	22.	101.3	101.3	101.3	1.1
5	21.79	33.579	23.198	6.80	134.9	0.6	0.04	0.0	0.01	4.00 B	1.06 B	15.	54.4	54.8	54.6	1.1
8	19.13	33.392	23.761	5.95	112.3	1.2	0.21	0.0	0.00	0.85	0.27	4.6	7.0	7.6	7.3	0.56
12	16.76	33.374	24.324	6.33	114.1	1.0	0.27	0.0	0.00	0.74	0.25	1.00	3.0	3.4	3.2	0.38
15	15.34	33.393	24.660	6.60	115.7	1.1	0.28	0.0	0.00	0.78	0.31	0.32	0.06	0.04	0.05	0.35

B) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON — CALCOFI CRUISE 0307 — STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 10.1 N	118 54.3 W	18/07/03	1720 UTC	11 m		1215 - 1933 PST	1210 PST	1933 PST	756.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	18.57	33.558	24.028	5.72	106.9	0.8	0.26	0.0	0.00	0.35	0.08	87. A	13.7	14.4	14.0	0.27
6	18.06	33.556	24.153	5.79	107.1	0.8	0.26	0.0	0.00	0.45	0.13	43.	14.6	14.9	14.7	0.37
15	12.80	33.531	25.295	5.47	91.1	4.0	0.90	8.8	0.39	3.58	1.20	12.	44.1	47.0	45.6	0.71
22	11.65	33.539	25.521	4.90	79.6	8.5	1.25	13.6	0.48	3.65	1.18	4.6	22.8	25.5	24.2	0.43
30	11.27	33.530	25.583	4.28	69.0	13.5	1.47	16.9	0.26	2.37	0.95	1.5	6.1	6.2	6.1	0.24
41	10.67	33.598	25.744	3.68	58.6	18.7	1.69	20.4	0.04	0.39	0.24	0.33	0.21	0.06	0.13	0.13

RV NEW HORIZON — CALCOFI CRUISE 0307 — STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 51.3 N	121 36.0 W	19/07/03	1858 UTC	19 m		1235 - 1928 PST	1210 PST	1939 PST	141.7 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	17.21	32.739	23.731	5.67	102.7	1.9	0.39	0.1	0.00	0.17	0.04	78. A	3.8	3.8	3.8	0.20
13	17.13	32.739	23.751	5.67	102.5	1.7	0.38	0.1	0.00	0.18	0.04	35.	4.0	3.8	3.9	0.14
24	17.13	32.749	23.759	5.66	102.4	1.8	0.39	0.0	0.00	0.21	0.06	14.	2.8	2.8	2.8	0.20
37	16.98	32.804	23.836	5.70	102.8	1.8	0.38	0.0	0.00	0.30	0.10	5.0	1.8	1.9	1.8	0.09
44	16.74	33.008	24.049	5.76	103.5	1.8	0.38	0.1	0.00	0.34	0.13					
51	16.07	33.086	24.263	5.81	103.1	1.8	0.37	0.1	0.00	0.33	0.18	1.6	0.65	0.71	0.68	0.07
61	15.46	33.073	24.389	5.85	102.6	1.9	0.40	0.0	0.00	0.35	0.26					
72	14.64	33.052	24.551	5.86	101.0	2.2	0.49	0.0	0.00	0.39	0.35	0.30	0.06	0.05	0.05	0.05

A) INCUBATION LIGHT INTENSITIES WERE 94, 39, 13, 5.0, 1.5, 0.29 PERCENT RESPECTIVELY.

MACROZOOPLANKTON BIOMASS
Net Mesh Size: 0.505mm

Line	Sta.	Latitude N	Longitude W	Date Mo/Day	Time (PST) Start	Time (PST) End	Water Volume Strained (m^3)	Max. Tow Depth (m)	Volume per 1000 m^3 Strained Total (cm^3)	Volume per 1000 m^3 Strained Small (cm^3)
77	49	35 05.4	120 47.6	07/29	1739	1745	123	49	114	114
77	51	35 00.9	120 54.5	07/29	1441	1502	417	209	141	141
77	55	34 54.1	121 12.2	07/29	0935	0957	449	203	468	468
77	60	34 43.7	121 33.5	07/29	0635	0657	444	211	126	126
77	70	34 23.9	122 15.7	07/29	0102	0124	448	221	89	89
77	80	34 03.9	122 58.1	07/28	1912	1933	456	210	162	162
77	90	33 42.2	123 38.7	07/28	1319	1341	457	212	20	20
77	100	33 24.1	124 20.5	07/28	0738	0759	458	210	13	13
80	51	34 26.9	120 31.3	07/26	1646	1652	136	56	88	88
80	55	34 19.5	120 49.8	07/26	1955	2017	490	206	69	69
80	60	34 09.1	121 11.7	07/26	2322	2344	462	202	204	204
80	70	33 47.7	121 49.5	07/27	0433	0454	437	214	300	300
80	80	33 28.9	122 30.1	07/27	1218	1240	453	206	525	525
80	90	33 08.2	123 12.1	07/27	2012	2033	455	212	79	79
80	100	32 48.4	123 55.4	07/28	0142	0204	472	211	32	32
82	47	34 18.3	120 00.3	07/26	1242	1303	432	216	58	58
83	40.6	34 13.0	119 24.5	07/26	0707	0710	76	25	40	40
83	42	34 11.6	119 30.7	07/26	0539	0547	159	69	132	132
83	51	33 52.1	120 08.4	07/26	0010	0021	244	104	566	566
83	55	33 44.6	120 25.9	07/25	2054	2115	470	196	345	345
83	60	33 34.6	120 42.4	07/25	1703	1724	457	210	306	306
83	70	33 14.6	121 26.6	07/25	0940	1002	488	202	156	156
83	80	32 54.8	122 06.9	07/25	0514	0535	415	213	516	516
83	90	32 36.1	122 48.8	07/24	2346	0008	454	217	37	37
83	100	32 15.9	123 30.2	07/24	1817	1838	461	212	41	41
87	33	33 52.7	118 29.9	07/22	1711	1717	119	48	68	68
87	35	33 49.5	118 38.9	07/22	1935	1957	465	210	189	189
87	40	33 38.7	118 59.4	07/22	2302	2323	455	204	103	103
87	45	33 29.9	119 20.3	07/23	0258	0319	430	202	536	536
87	50	33 19.8	119 40.6	07/23	0618	0625	140	63	136	136
87	55	33 09.3	120 02.0	07/23	0907	0928	437	209	73	73
87	60	32 58.4	120 22.5	07/23	1512	1533	457	214	162	162
87	70	32 38.3	121 03.5	07/23	2038	2060	501	211	116	116
87	80	32 18.9	121 42.0	07/24	0159	0220	458	211	131	131
87	90	31 59.3	122 24.5	07/24	0713	0734	448	212	58	58
87	100	31 40.6	123 05.1	07/24	1235	1256	469	213	51	51
90	28	33 28.5	117 46.5	07/22	0946	0954	181	74	294	294
90	30	33 24.0	117 55.2	07/22	0754	0816	438	200	130	130
90	35	33 14.4	118 16.8	07/22	0352	0414	458	204	98	98
90	37	33 11.3	118 25.4	07/22	0050	0112	467	208	94	94
90	45	32 55.1	118 57.4	07/21	1949	2010	449	212	67	67
90	53	32 39.9	119 30.1	07/21	1501	1522	448	210	181	181
90	60	32 25.3	119 57.8	07/21	0734	0755	424	208	219	219
90	70	32 05.6	120 39.8	07/21	0244	0306	464	201	222	222
90	80	31 45.3	121 20.6	07/20	2057	2118	469	210	160	160
90	90	31 25.1	122 00.3	07/20	1502	1524	470	205	109	87
90	100	31 05.4	122 39.8	07/20	0807	0829	428	213	19	19
90	110	30 46.5	123 21.1	07/20	0336	0357	457	208	42	42
93	26.7	32 57.0	117 18.5	07/17	1134	1139	113	41	89	89
93	28	32 52.8	117 23.1	07/17	1423	1445	470	204	38	38
93	30	32 49.4	117 31.9	07/17	1738	1759	448	218	45	45
93	35	32 39.5	117 53.3	07/17	2121	2143	484	198	122	122
93	40	32 32.3	118 15.1	07/18	0122	0143	479	200	140	140
93	45	32 19.6	118 33.9	07/18	0519	0540	458	207	120	120
93	50	32 10.3	118 54.0	07/18	0811	0832	453	210	141	141
93	55	32 59.6	119 14.9	07/18	1342	1403	461	208	217	217
93	60	31 50.1	119 35.1	07/18	1728	1750	467	205	73	73
93	70	31 31.9	120 15.8	07/18	2252	2313	451	206	106	106
93	80	31 11.3	120 56.5	07/19	0424	0446	454	211	298	262
93	90	30 51.3	121 36.0	07/19	0851	0912	440	216	52	52
93	100	30 31.2	122 16.3	07/19	1648	1709	464	212	62	30
93	110	30 11.4	122 56.7	07/19	2203	2224	468	215	26	26

FIGURES

Avifauna Observations

CalCOFI Cruise 0307

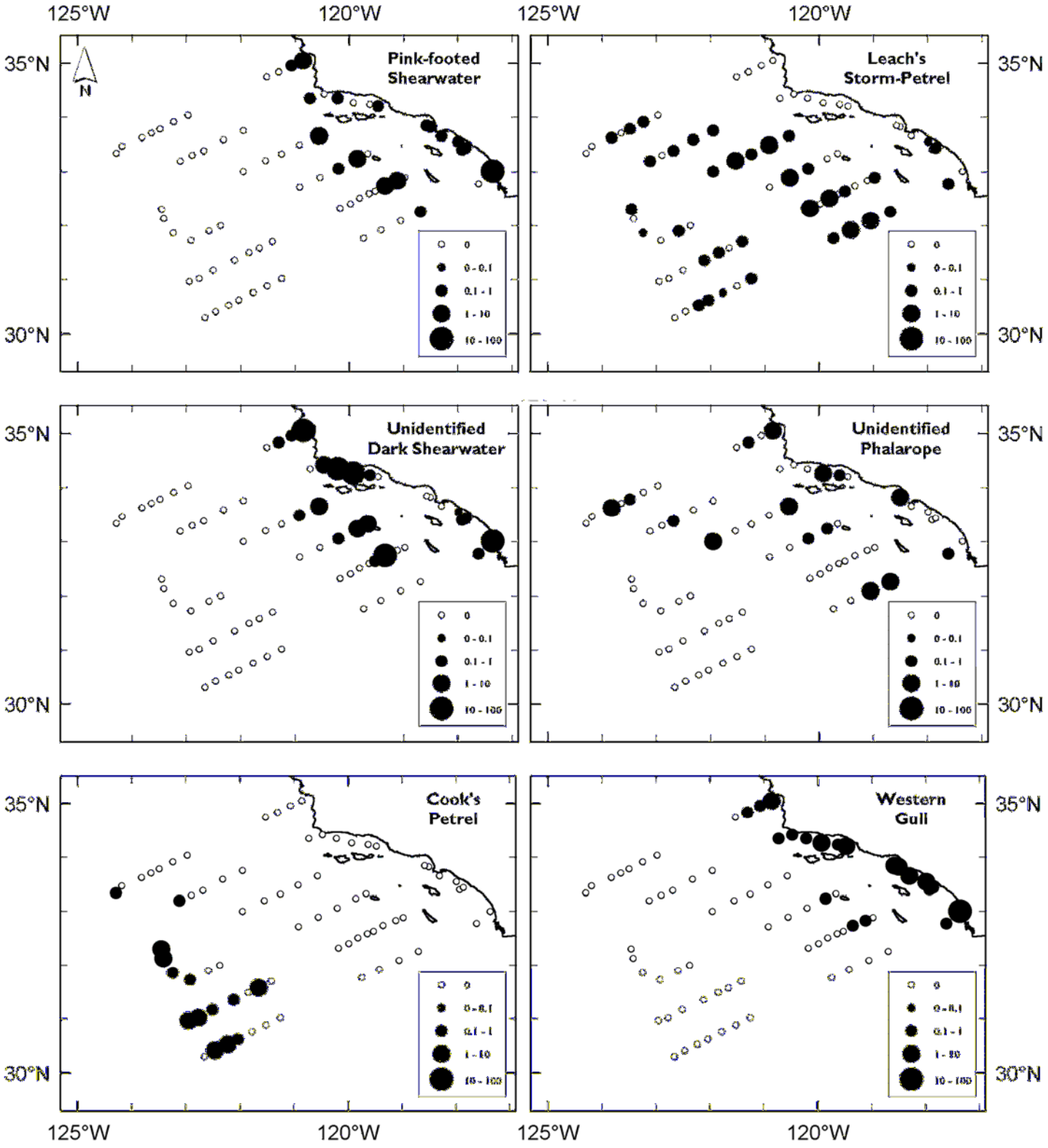
1a. Pink-footed Shearwater distribution.

1b. Leach's Storm Petrel distribution.

1c. Unidentified Dark Shearwater distribution.

1d. Unidentified Phalarope distribution.

1e. Cook's Petrel distribution.

1f. Western Gull distribution.

CalCOFI Cruise 0307