UNIVERSITY OF CALIFORNIA, SAN DIEGO

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093-0227

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 9807
9 – 27 July 1998

CalCOFI Cruise 9808
12 – 18 August 1998

CalCOFI Cruise 9809
13 September – 1 October 1998

CalCOFI Cruise 9810
16 – 22 October 1998

CalCOFI Cruise 9811
18 – 24 November 1998

CalCOFI Cruise 9812
10 – 15 December 1998

SIO Reference 99-18
3 November 1999

Approved for distribution:

_____
Charles F. Kennel, Director

CONTENTS

INTRODUCTION

The data in this report were collected during cruises 9807*, 9808, 9809, 9810, 9811 and 9812 of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the RV *New Horizon* and the RV *Robert Gordon Sproul* 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 Marine Life Research Group (MLRG) at Scripps Institution of Oceanography (SIO). MLRG contributes to this program by investigations of the physical, chemical and biological structure of the California Current. Cruises 9807 and 9809 were extended north of the normal cruise pattern to include CalCOFI lines 73, 70, and 67. The three lines were added to improve our ability to correctly estimate the standing biomass of Pacific sardine (Sardinops sagax). On cruise 9807 only underway measurements were made on the added lines except on line 70 the full suite of CalCOFI work was completed on the four inshore stations. On 9809 underway measurements and the full suite of CalCOFI work were done on lines 73, 70 and 67. Cruises 9808, 9810, 9811 and 9812 were part of a series of shorter cruises designed to monitor the response of the California Current to the 1997-1998 El Niño Southern Oscillation (ENSO) event. Data from all of the cruises were collected and processed by personnel of the Marine Life Research Group and the Southwest Fisheries Science Center. Volunteers and other SIO staff members 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 via the World Wide Web (http://www-mlrg.ucsd.edu/calcofi.html).

STANDARD PROCEDURES

CTD/Rosette Cast Data

At each station on these cruises a Sea-Bird Electronics, Inc., Conductivity-Temperature-Depth (CTD) instrument was deployed with a 24-place rosette. The rosette was equipped with 24 ten-liter plastic (PVC) bottles. The 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 and oxygen were determined at sea for all depths sampled. On cruises 9807 and 9809 nutrients were also determined for all depths sampled. Chlorophyll-*a* and phaeopigments were determined at sea within 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. The results were compared with the CTD salinity in order to verify that the rosette bottle did not mis-trip or leak. The salinometer was standardized before and after each group of samples with substandard seawater. Periodic checks on the conductivity of the substandard were made by comparison with IAPSO Standard Seawater batch P132. Salinity values have been calculated using the algorithms for the Practical Salinity Scale, 1978 (UNESCO, 1981a) and were reported to three decimal places, provided that accepted standards were met. If there was doubt concerning the accuracy of the analytical results the salinities were reported to two decimal places.

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).

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

On cruises 9807 and 9809 silicate, phosphate, nitrate and nitrite nutrients were determined at sea using an automated analyzer. The procedures used are similar to those described in Atlas *et al*. (1971).

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 with a cold extraction technique in 90% acetone (Venrick and Hayward, 1984), and the fluorescence determined before and after acidification with a Turner Designs fluorometer (Yentsch and Menzel, 1963; Holm-Hansen *et al*., 1965).

Evaluation of the water sample data involved comparisons with the CTD cast profiles, 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). Estimates of precision of the standard techniques are given in SIO (1991).

Primary Productivity Sampling

On cruises 9807 and 9809 primary productivity samples were taken each day shortly before local apparent noon (LAN). Primary productivity samples were not collected on cruises 9808, 9810, 9811 and 9812. 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 up rosette 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. The ten-liter bottles were equipped with epoxy-coated springs and Viton O-rings. 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 fluor 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 0.505µm 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). On cruises 9807 and 9809 an Optical Plankton Counter (OPC) 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

On cruises 9807, 9809, 9810 and 9811 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 which are not presented in this report. These programs include:

1) *Underway Data*. On all the cruises continuous near surface measurements of temperature, salinity and chlorophyll fluorescence were made from water pumped through the ship, and the data were logged at one-minute intervals. Pelagic fish eggs were collected underway with a separate large volume pump throughout the entire CalCOFI pattern on cruise 9807 and 9809. This pump drew a continuous sample of approximately 640 liters per minute, which was concentrated and then collected by a 505µm sieve. Samples were taken at intervals ranging from 10 to 30 minutes, depending on the sample concentration, for enumeration of all retained fish eggs.

2) *ADCP*. Continuous profiles of ocean currents and acoustic backscatter between 20 and 400 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.

3) *Bio-optics*. In-situ measurements of the apparent and inherent optical properties were obtained twice daily in the top 300 meters of the water column using a bio-optical package. Fast Repetition Rate Fluorometer (FRRF) measurements of chlorophyll-*a* variable fluorescence *in situ*, were also performed on discrete water samples to determine phytoplankton photosynthesis vs. irradiance relationships on 9807. When conditions were favorable, additional optical profiles were completed in coordination with SeaWiFS satellite orbital overpasses. Daily on deck measurements of polarized sky radiances and above-water ocean surface reflectance were also performed in support of NASA-sponsored research by Robert Frouin. Water samples obtained from the CTD/Rosette were collected and analyzed to determine particulate, detrital, and soluble spectral absorption, particulate organic carbon and nitrogen, and phytoplankton pigment concentrations using HPLC. Other measurements using discrete water samples included particle size distribution, and phycoerythrin sampling. Cyanobacterica samples were also collected on 9807.

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 cast. 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 also reported for most daylight stations on cruises 9807 and 9809. They were not recorded on cruises 9808, 9810, 9811 and 9812.

Observed data from individual CTD/rosette trip levels are interpolated and 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 also 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 have been presented to two significant digits (values <1.00) or one decimal (values >1.00). Precision of the higher production values may not warrant all of the digits presented. 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.

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PERSONNEL

CalCOFI Cruise 9807

SHIP'S CAPTAIN

John P. Manion, RV *New Horizon*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participation (Leg)
Renger, Edward H. (Chief Scientist)	Staff Research Associate, SIO	1,2
Anfuso, Stacey R.	Staff Research Associate, SIO	1,2
Cummings, Sherry L.	Staff Research Associate, SIO	1,2
Frame, Elizabeth R.	Graduate Student, SIO	1,2
Goetze, Erica	Graduate Student, SIO	2
Guerra, Omar J.	Volunteer	1,2
Hays, Amy E.	Fishery Biologist, NMFS	1,2
Hollemans, Peter F.	Staff Research Associate, SIO	2
Hyrenbach, K. David	Graduate Student, SIO	1,2
Ireson, Kirk J.	Staff Research Associate, SIO	1,2
Mendez, Maria E.	Graduate Student, SIO	1
Nelson, Jessica K.	Graduate Student, SIO	1,2
Ramirez, Fernando	Staff Research Associate, SIO	1,2
Swenson, Daryl L.	Biological Technician, NMFS	1,2
Wieland, John D.	Staff Research Associate, SIO	1,2
Wilkinson, James R.	Programmer/Analyst, SIO	1,2

Leg 1: San Diego to Dana Point, Ca., 9 July – 15 July, 1998
Leg 2: Dana Point to Redwood City, Ca., 15 July – 27 July, 1998

FIGURES

Cruise 9807

1. CalCOFI Cruise 9807, 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.

CALCOFI CRUISE 9807

9 - 27 JULY 1998

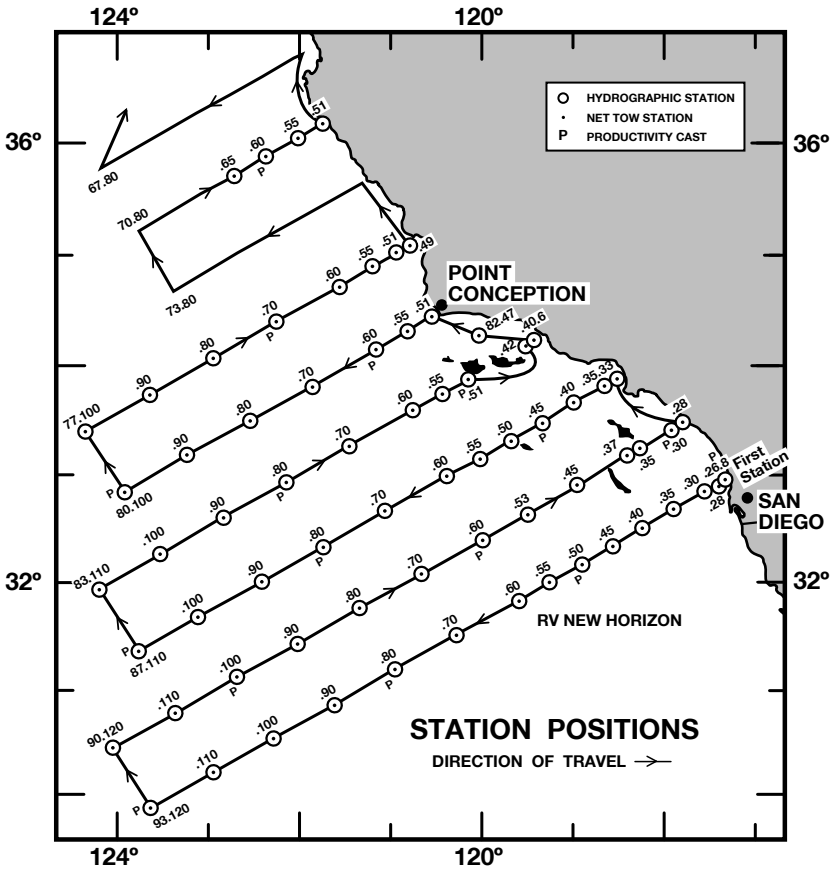

FIGURE 1

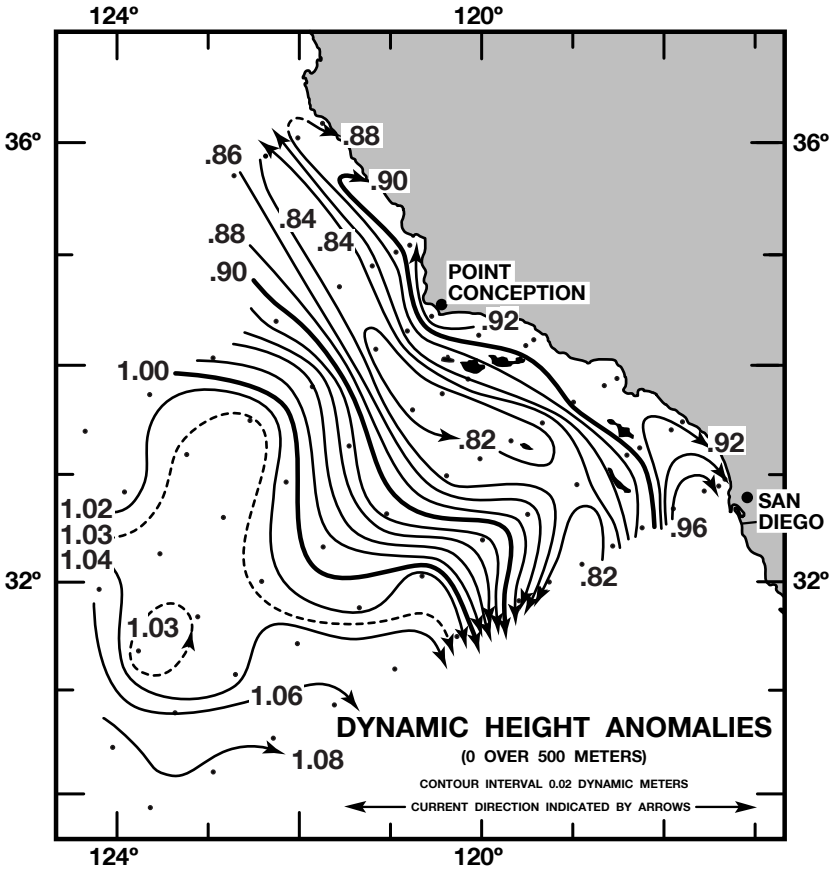

FIGURE 2

CALCOFI CRUISE 9807

9 - 27 JULY 1998

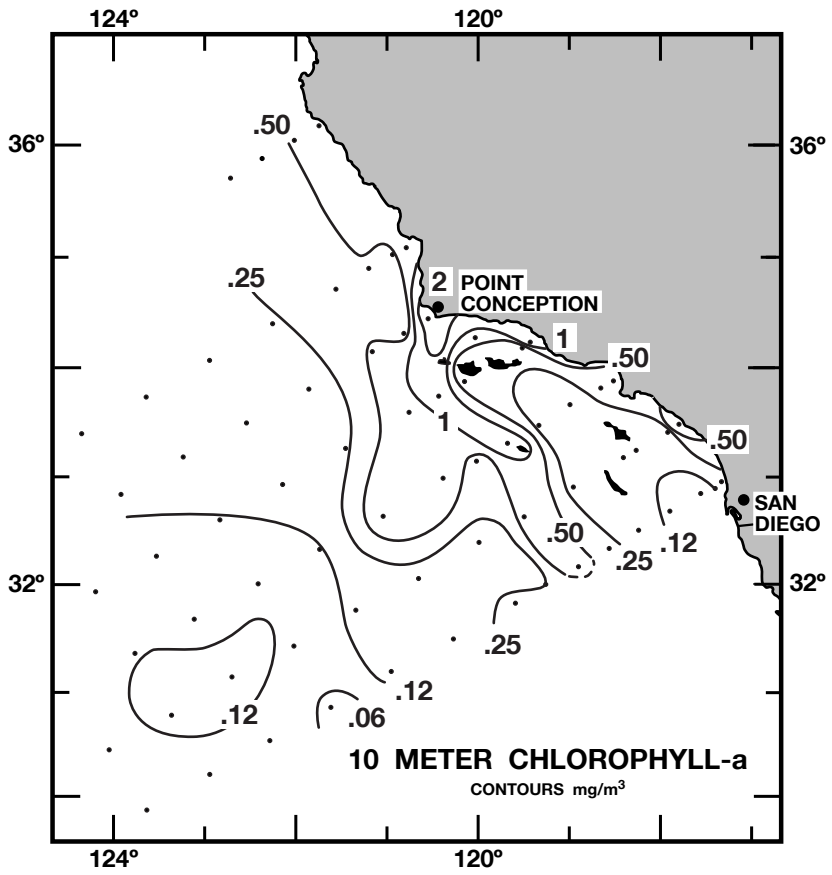

FIGURE 3A

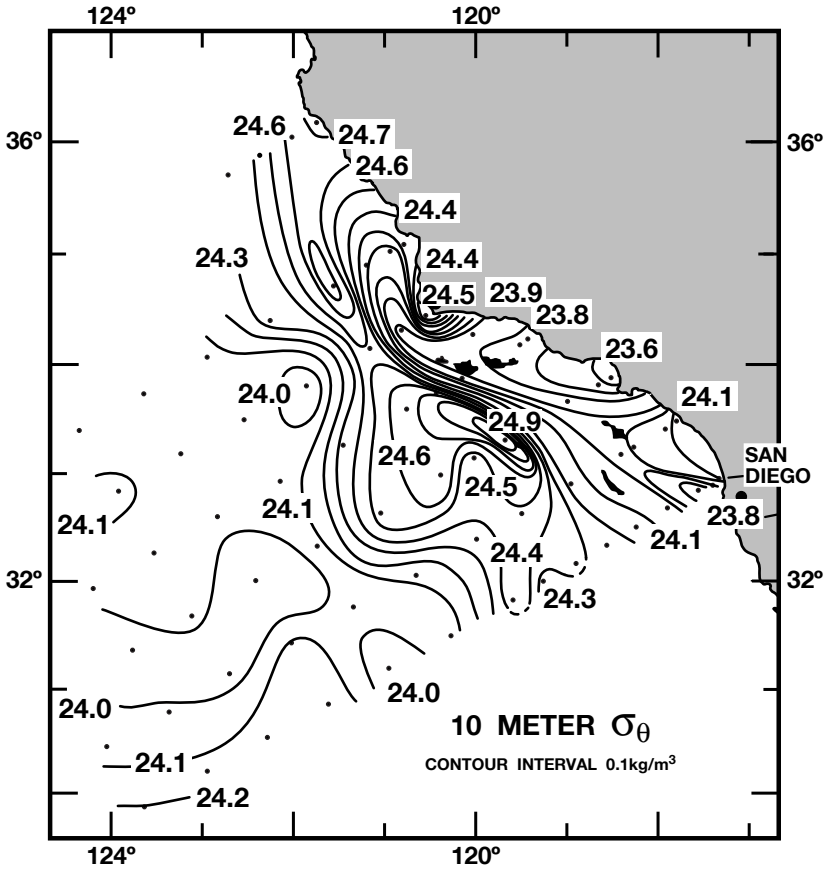

FIGURE 3B

CALCOFI CRUISE 9807

9 - 27 JULY 1998

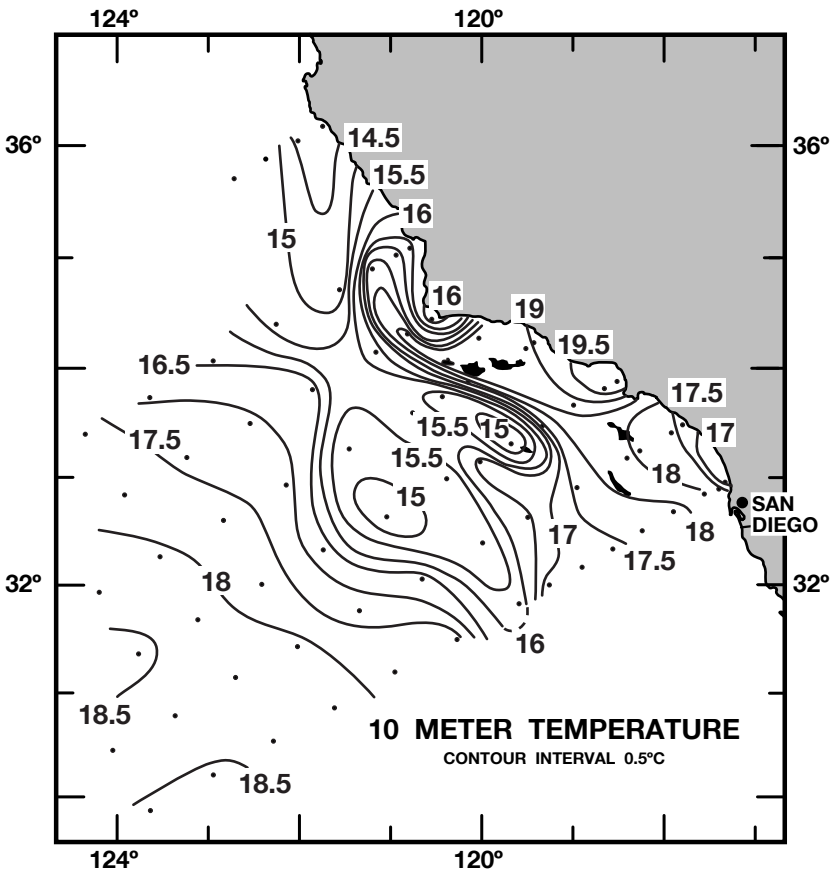

FIGURE 3C

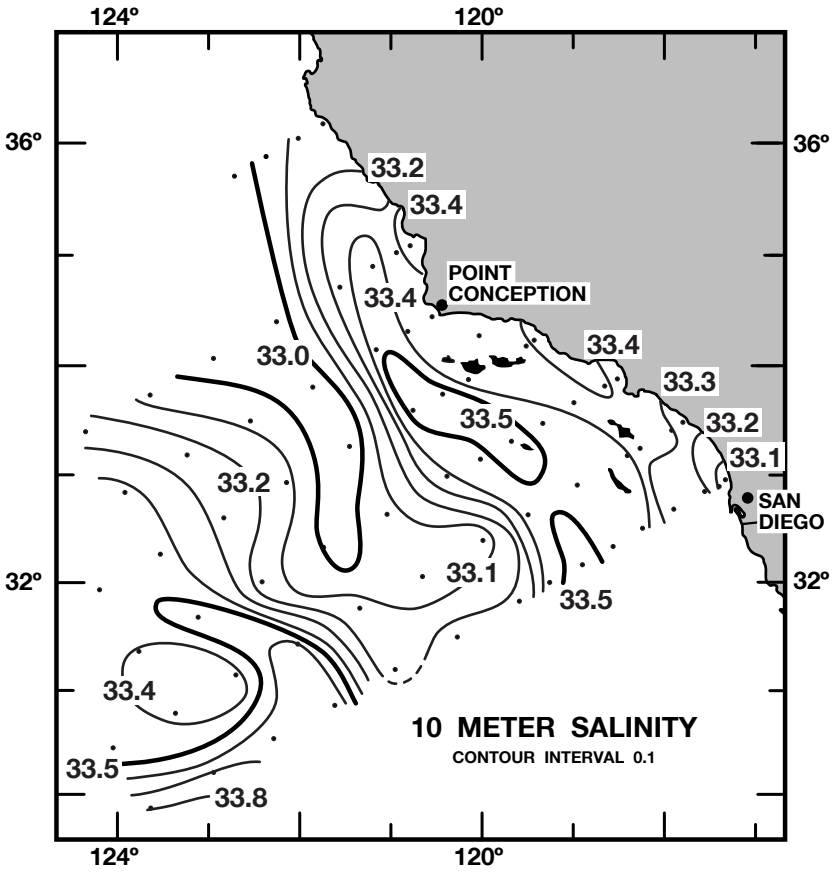

FIGURE 3D

CALCOFI CRUISE 9807

9 - 27 JULY 1998

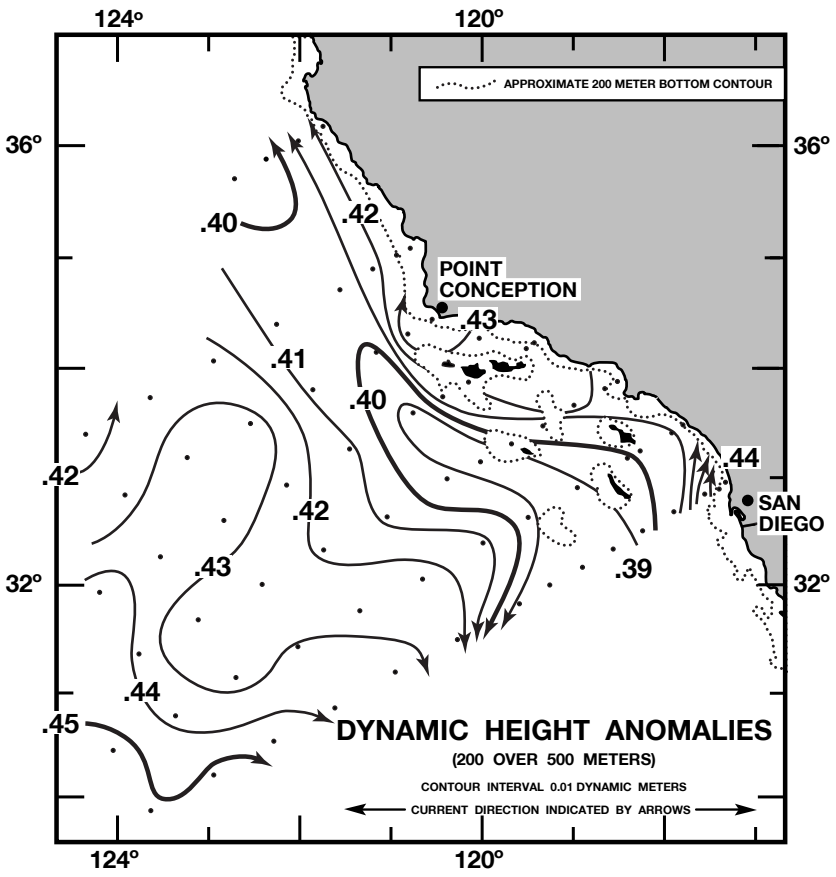

FIGURE 4A

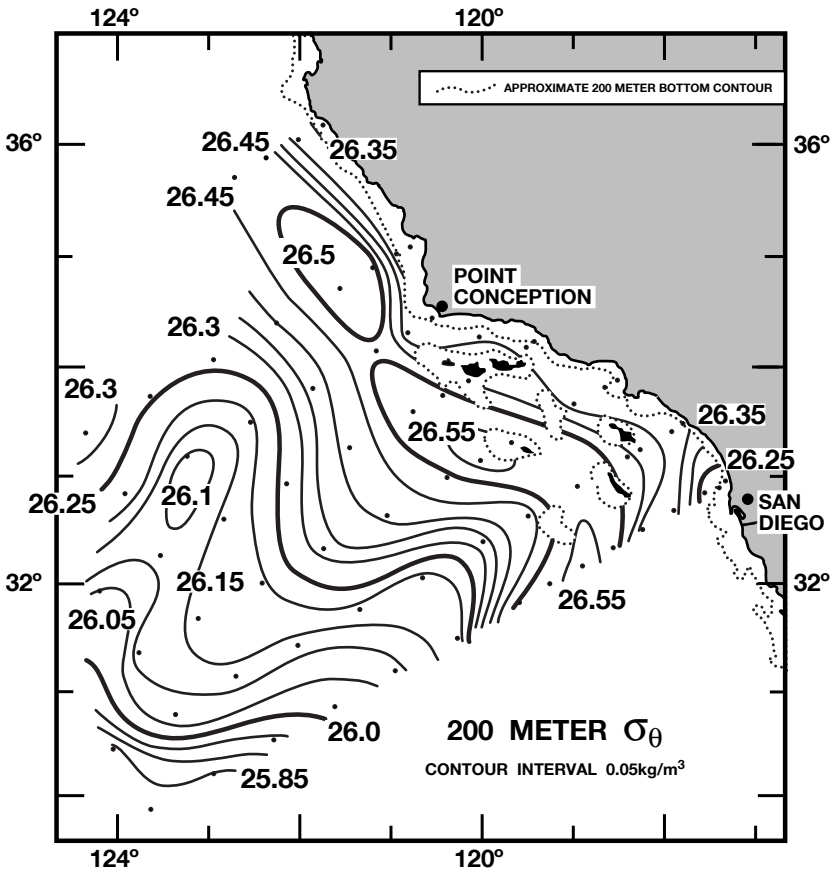

FIGURE 4B

CALCOFI CRUISE 9807

9 - 27 JULY 1998

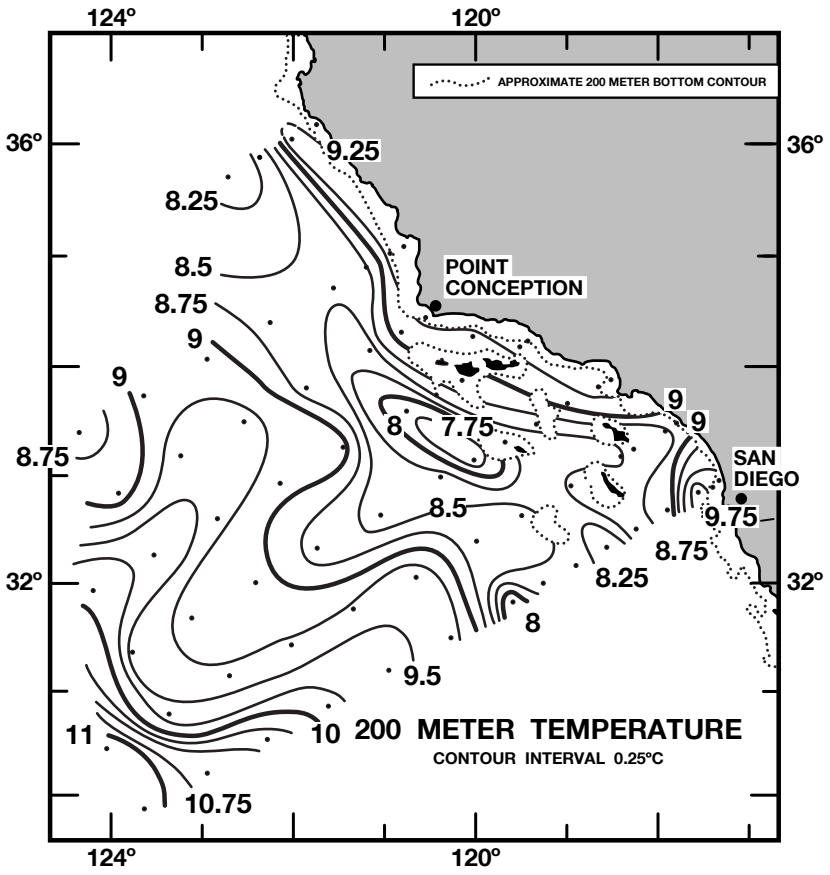

FIGURE 4C

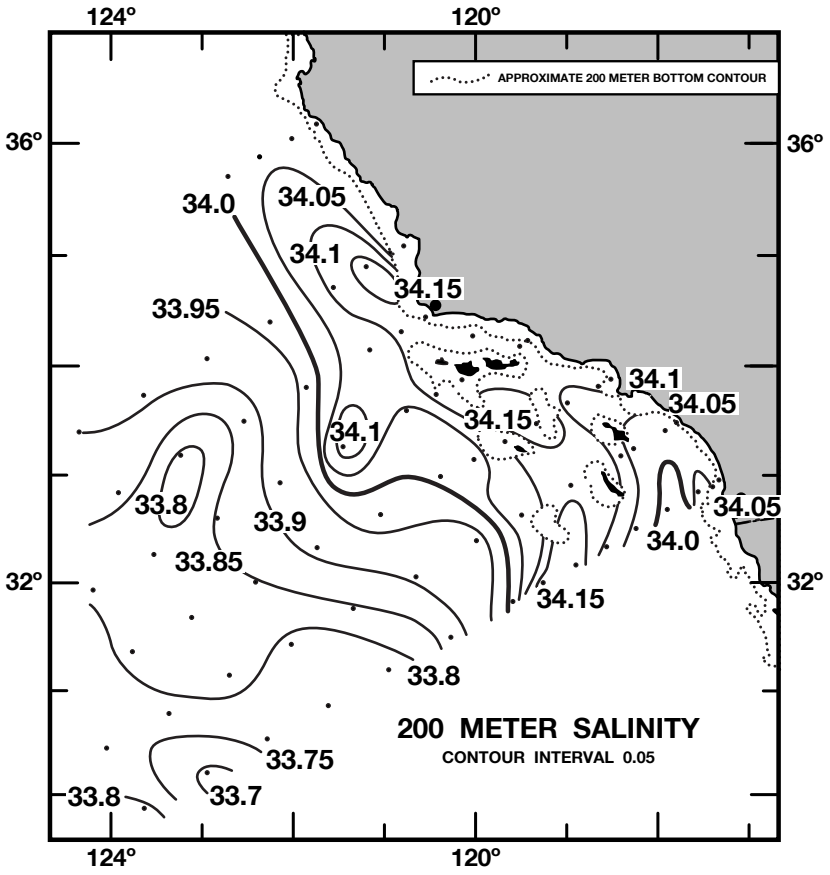

FIGURE 4D

CALCOFI CRUISE 9807

13 - 15 JULY 1998

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

GEOSTROPHIC VELOCITY RELATIVE TO 500m (cm/s)

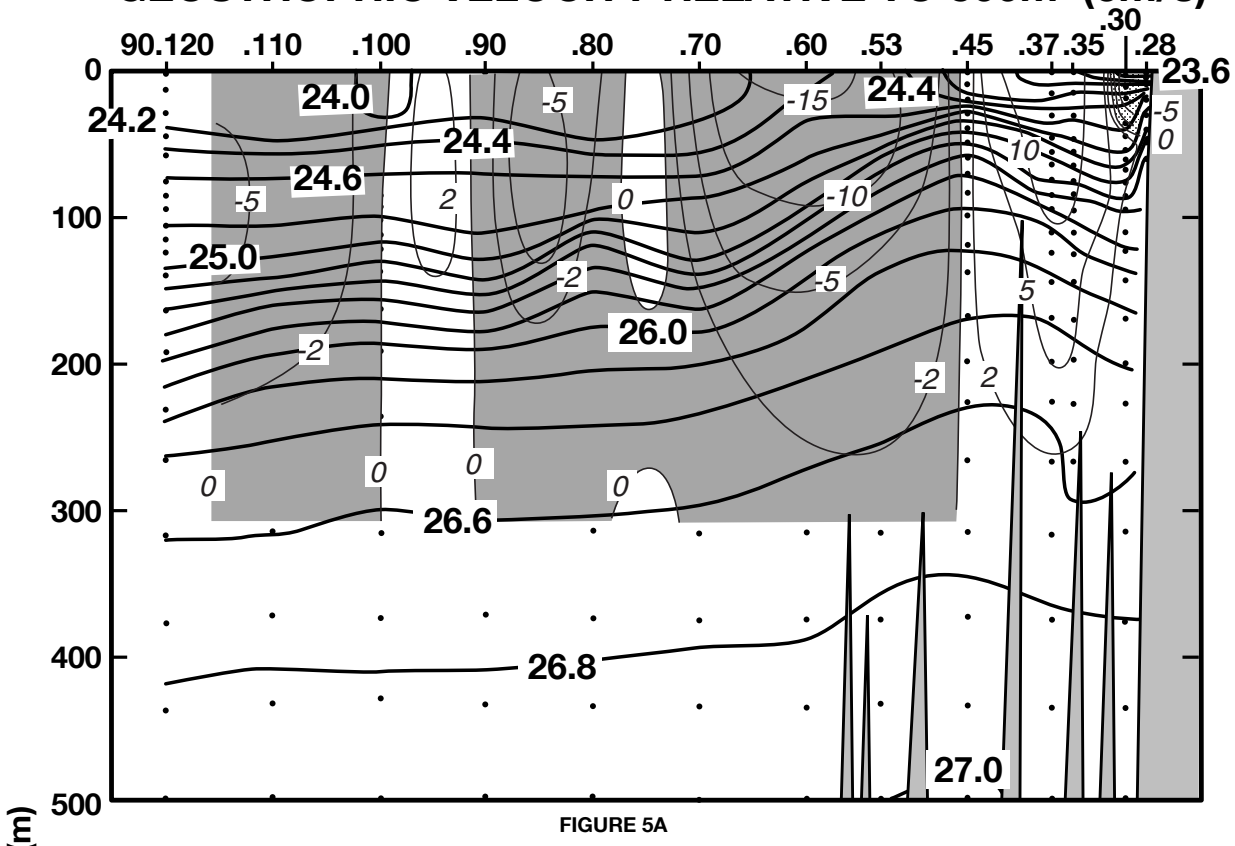

FIGURE 5A

TEMPERATURE (°C) ALONG CALCOFI LINE 90

DEPTH (m)

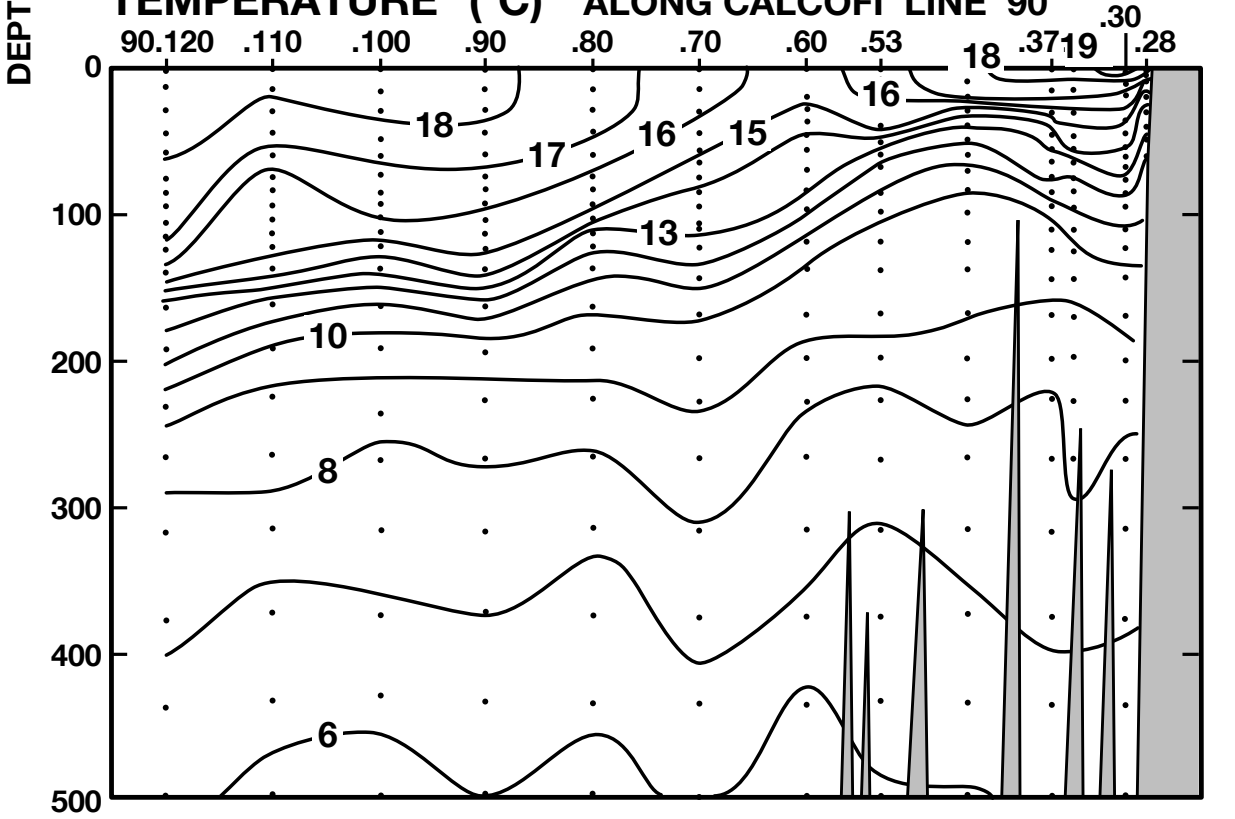

FIGURE 5B

CALCOFI CRUISE 9807

13- 15 JULY 1998

SALINITY ALONG CALCOFI LINE 90

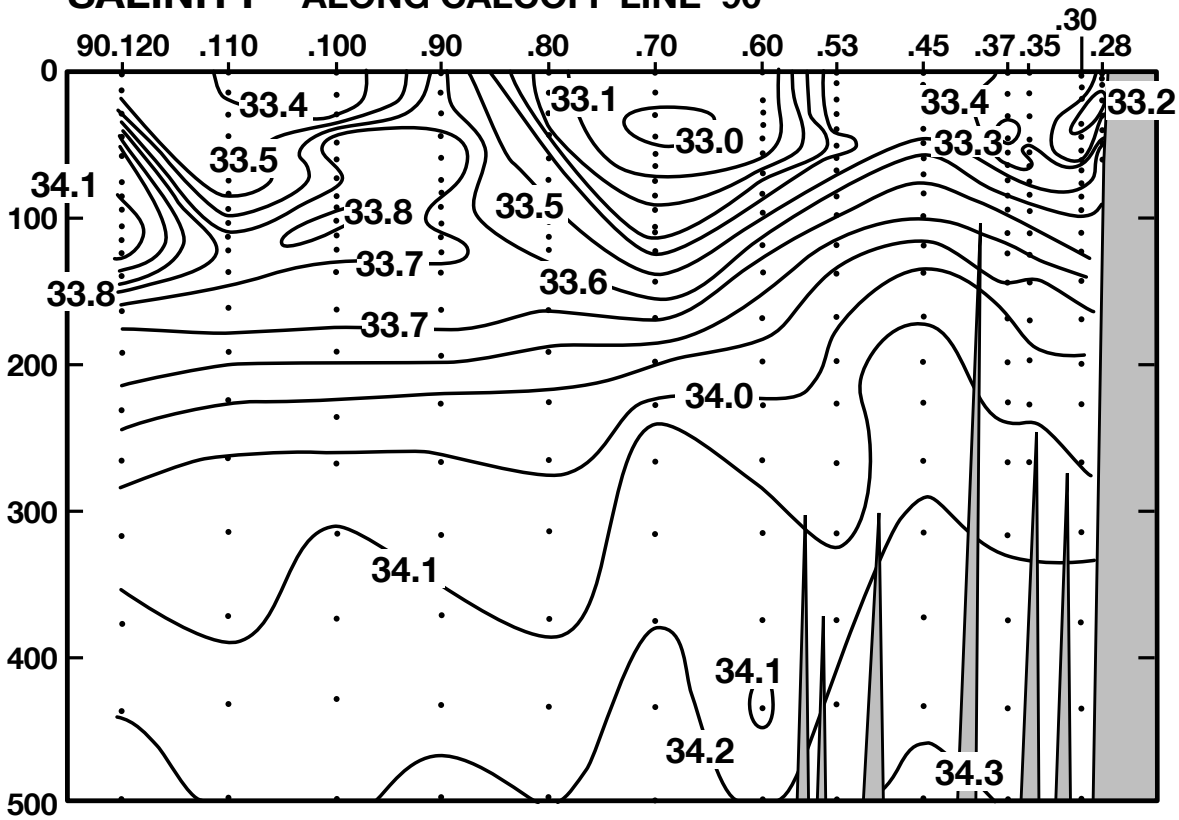

FIGURE 5C

SILICATE (μM/l) ALONG CALCOFI LINE 90

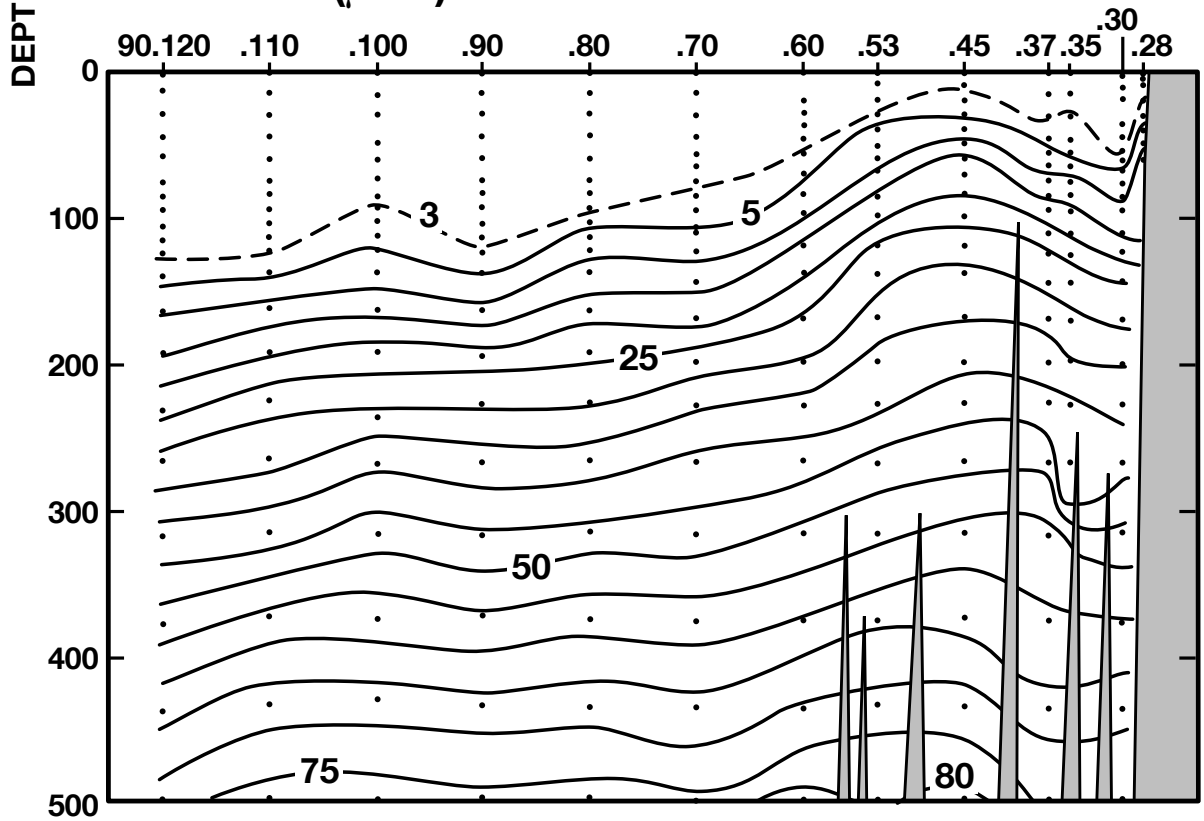

FIGURE 5D

CALCOFI CRUISE 9807

13 - 15 JULY 1998

NITRATE (μM/l) ALONG CALCOFI LINE 90

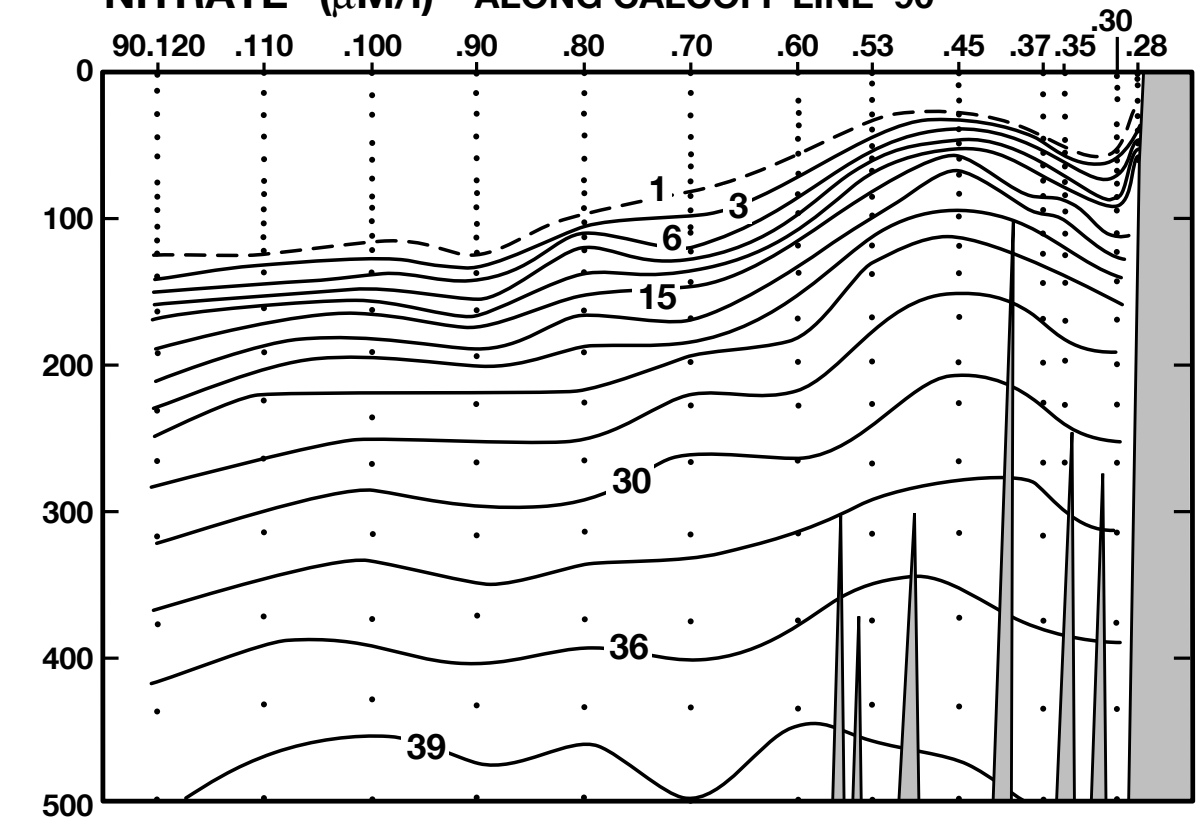

FIGURE 5E

PHOSPHATE (μM/l) ALONG CALCOFI LINE 90

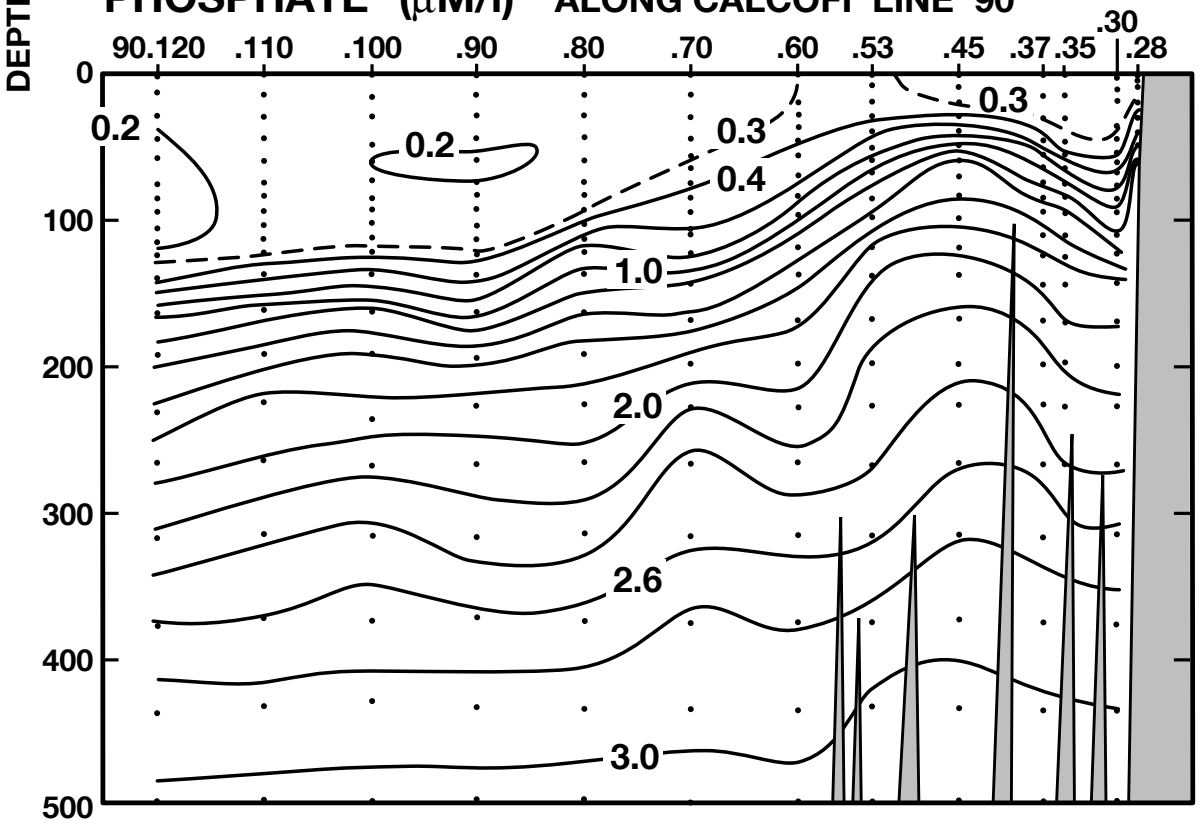

FIGURE 5F

CALCOFI CRUISE 9807

13 - 15 JULY 1998

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

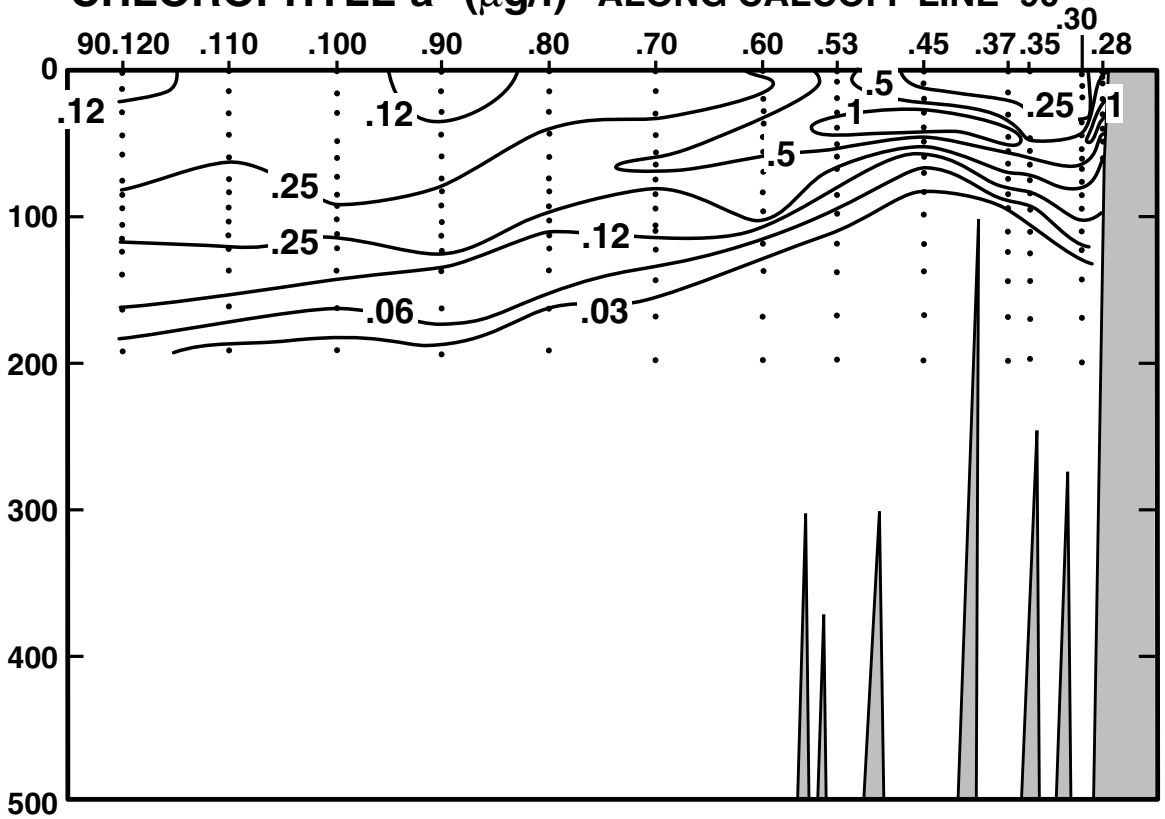

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

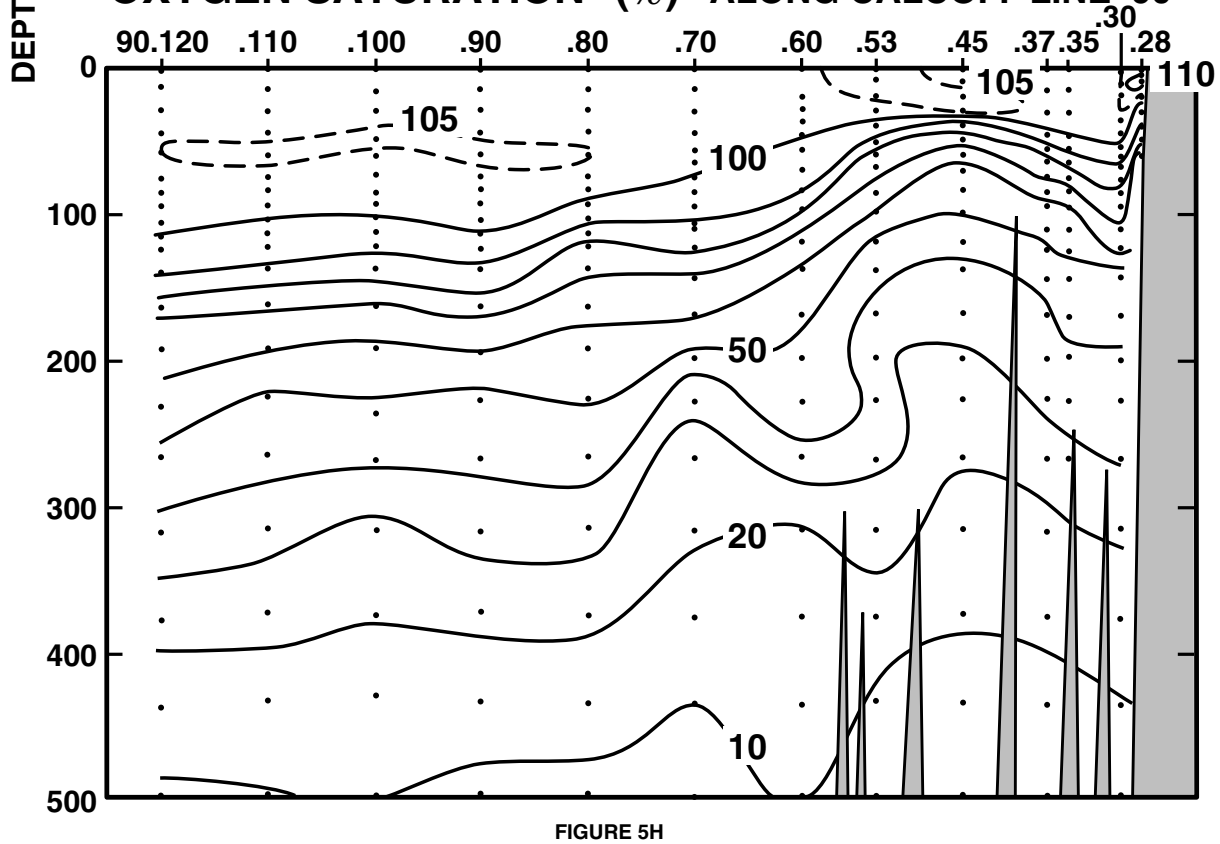

FIGURE 5H

CALCOFI CRUISE 9807

13 - 15 JULY 1998

OXYGEN (ml/l) ALONG CALCOFI LINE 90

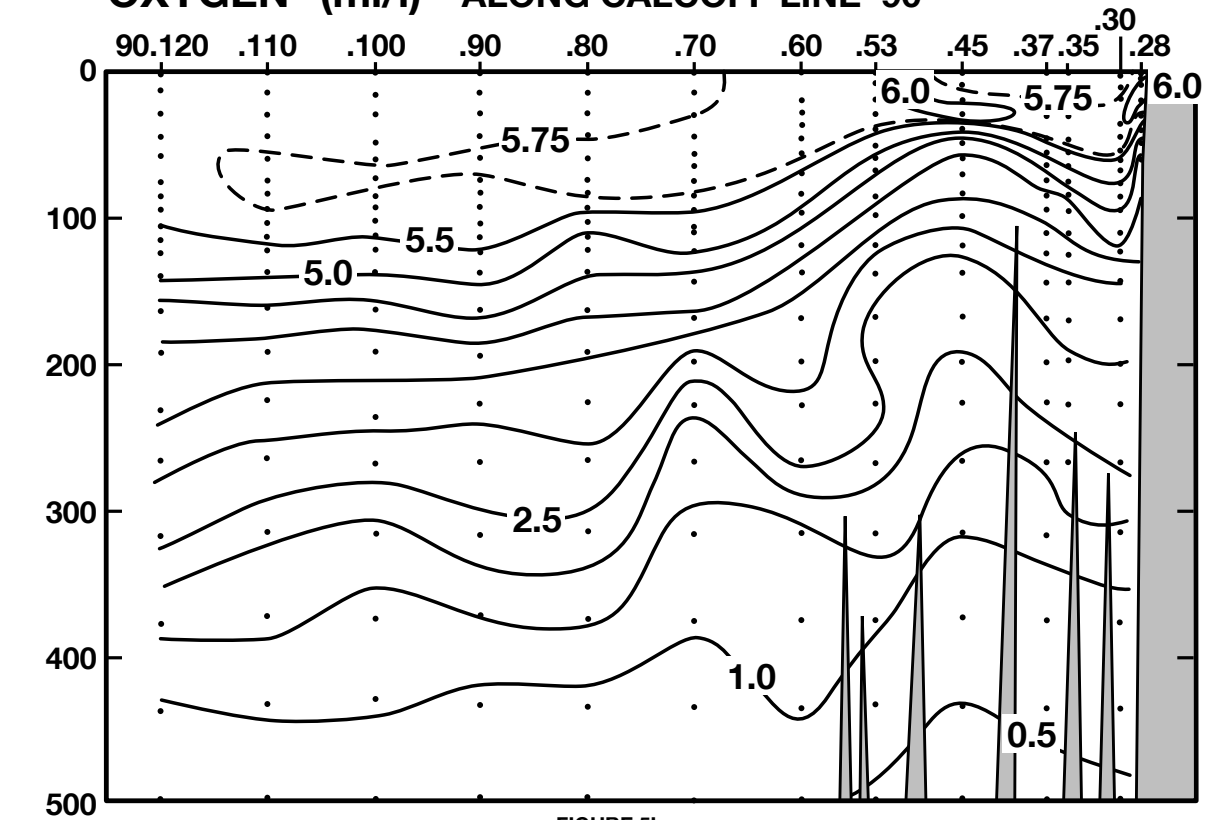

FIGURE 5I

NITRITE (μM/l) ALONG CALCOFI LINE 90

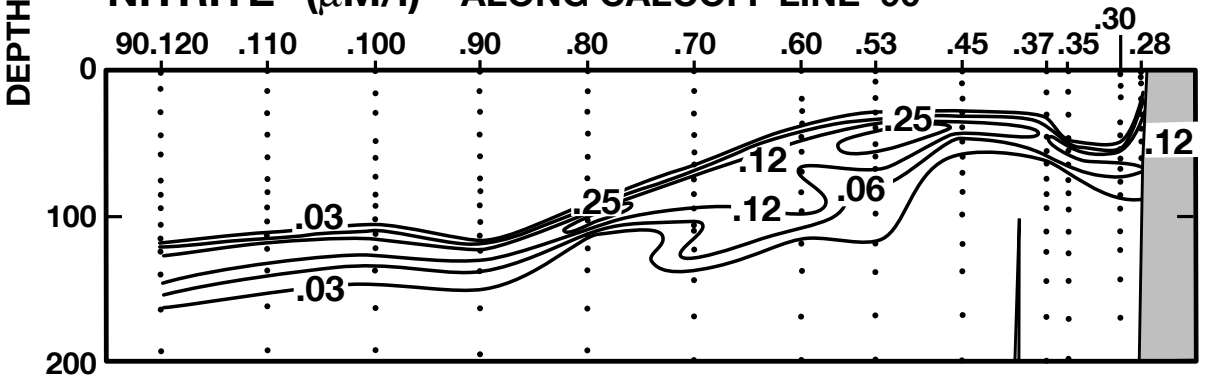

FIGURE 5J

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

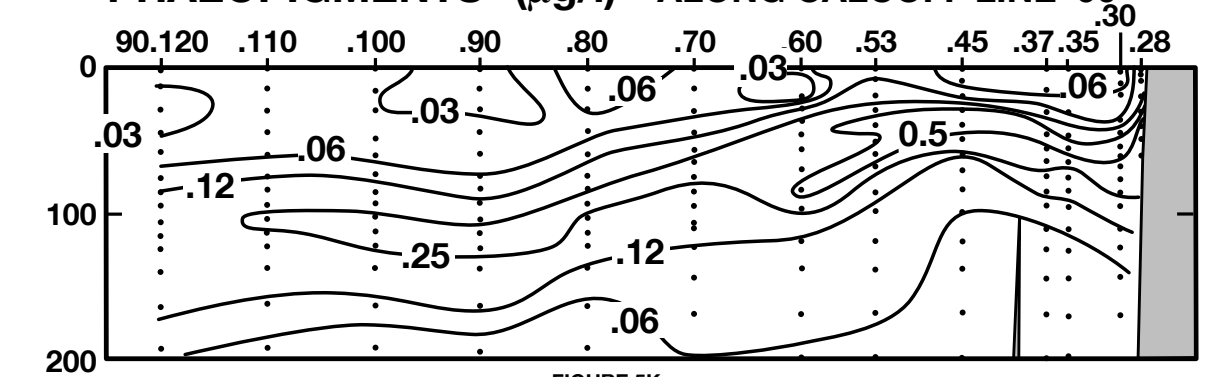

FIGURE 5K

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 70 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
36 10.7 N	121 44.1 W	26/07/98	0432	UTC	400 m	340	02 kn			1016.7 mb	16.0 C	14.9 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	15.50	15.50	33.073	24.378	354.0	0.000	6.15	107.9	2.0	0.36	0.3	0.03	0.66	0.24	0	
1		15.50	15.50	33.073	24.378	354.0	0.004	6.15	107.9	2.0	0.36	0.3	0.03	0.66	0.24	1	217
8		14.42	14.42	33.095	24.628	330.4	0.027	6.29	108.0	1.8	0.38	0.3	0.04	0.78	0.36	8	216
10	ISL	14.18	14.18	33.134	24.709	322.8	0.034	6.24	106.7	2.2	0.41	0.7	0.07	0.91	0.45	10	
19		13.33	13.33	33.315	25.023	293.1	0.062	5.83	98.0	5.1	0.68	3.7	0.22	1.39	0.88	19	215
20	ISL	13.24	13.24	33.321	25.046	291.0	0.065	5.77	96.8	5.5	0.75	4.1	0.24	1.36	0.91	20	
29		12.60	12.60	33.344	25.190	277.5	0.090	5.28	87.4	9.2	1.22	7.5	0.36	0.95	1.13	29	214
30	ISL	12.58	12.58	33.351	25.199	276.6	0.093	5.25	86.9	9.4	1.21	7.7	0.37	0.92	1.16	30	
38		12.40	12.40	33.406	25.277	269.4	0.115	5.01	82.7	10.9	1.05	9.3	0.42	0.71	1.40	38	213
48		11.66	11.65	33.414	25.422	255.8	0.141	4.55	73.9					0.22	0.37	48	212
50	ISL	11.65	11.64	33.454	25.455	252.7	0.146	4.43	71.9	14.7	1.24	13.3	0.38	0.21	0.38	50	
58		11.60	11.59	33.583	25.565	242.5	0.166	4.03	65.4	16.9	1.43	15.6	0.34	0.17	0.41	58	211
69		11.58	11.57	33.596	25.579	241.4	0.193	3.97	64.4	17.3	1.45	15.8	0.34	0.16	0.39	69	210
75	ISL	11.53	11.52	33.608	25.598	239.8	0.207	3.90	63.2	17.7	1.48	16.2	0.32	0.15	0.37	75	
85		11.32	11.31	33.637	25.659	234.2	0.231	3.73	60.2	18.8	1.55	17.4	0.28	0.12	0.34	85	209
98		10.72	10.71	33.692	25.809	220.1	0.260	3.37	53.7	21.7	1.69	20.0	0.23	0.10	0.32	99	208
100	ISL	10.64	10.63	33.704	25.833	217.9	0.265	3.31	52.7	22.1	1.71	20.4	0.21	0.10	0.32	101	
118		10.02	10.01	33.809	26.021	200.3	0.302	2.84	44.6	25.4	1.89	23.5	0.09	0.07	0.28	119	207
125	ISL	9.78	9.77	33.836	26.083	194.5	0.316	2.80	43.8	26.5	1.92	24.2	0.09	0.06	0.28	126	
139		9.40	9.38	33.883	26.182	185.3	0.343	2.76	42.8	28.7	1.98	25.2	0.09	0.04	0.28	140	206
150	ISL	9.28	9.26	33.934	26.242	179.9	0.363	2.55	39.4	30.8	2.07	26.2	0.09	0.03	0.26	151	
169		9.20	9.18	34.009	26.313	173.4	0.396	2.21	34.1	33.9	2.20	27.5	0.09	0.03	0.21	170	205
198		8.94	8.92	34.038	26.378	167.8	0.446	2.24	34.4	35.2	2.22	28.1	0.05	0.02	0.18	199	204
200	ISL	8.92	8.90	34.040	26.383	167.4	0.449	2.23	34.2	35.4	2.22	28.2	0.05			201	
249		8.54	8.51	34.092	26.483	158.6	0.529	1.90	28.9	40.5	2.36	29.9	0.05			251	203
250	ISL	8.53	8.50	34.093	26.486	158.4	0.531	1.90	28.9	40.6	2.36	29.9	0.05			252	
298		8.08	8.05	34.111	26.569	151.2	0.605	1.75	26.4	45.6	2.48	31.3	0.07			300	202
300	ISL	8.07	8.04	34.111	26.570	151.1	0.608	1.75	26.4	45.8	2.48	31.3	0.07			302	
353		7.74	7.70	34.123	26.629	146.3	0.687	1.62	24.2	49.8	2.56	32.5	0.07			355	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 70 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
36 3.4 N	122 1.2 W	26/07/98	0056	UTC	1360 m	230	02 kn	230 02 07	1	1016.6 mb	17.0 C	15.5 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	16.20	16.20	33.073	24.221	368.9	0.000	6.10	108.6	2.8	0.40	0.4	0.03	0.68	0.17	0	
1		16.20	16.20	33.073	24.221	369.0	0.004	6.10	108.6	2.8	0.40	0.4	0.03	0.68	0.17	1	220
1		16.05	16.05	33.072	24.255	365.8	0.004									1	222
1		15.98	15.98	33.072	24.270	364.3	0.004									1	221
9		14.50	14.50	33.098	24.614	331.8	0.032	6.26	107.7	2.9	0.42	0.9	0.06	0.89	0.31	9	219
10	ISL	14.46	14.46	33.105	24.628	330.5	0.035	6.26	107.6	2.9	0.42	0.9	0.06	0.87	0.38	10	
20		14.11	14.11	33.113	24.708	323.2	0.068	6.23	106.3	3.0	0.44	1.1	0.08	0.65	0.94	20	218
29		13.52	13.52	33.330	24.997	295.9	0.095	5.83	98.4	6.0	0.70	3.8	0.20	0.75	0.46	29	217
30	ISL	13.43	13.43	33.352	25.032	292.6	0.098	5.74	96.7	6.6	0.74	4.4	0.23	0.72	0.46	30	
39		12.80	12.79	33.498	25.271	270.1	0.124	5.01	83.4	11.5	1.05	9.0	0.46	0.37	0.43	39	216
48		12.71	12.70	33.526	25.310	266.6	0.148	4.73	78.6	12.5	1.12	10.1	0.56	0.32	0.46	48	215
50	ISL	12.66	12.65	33.553	25.341	263.7	0.153	4.58	76.0	13.2	1.16	11.0	0.54	0.28	0.51	50	
59		12.43	12.42	33.672	25.478	250.9	0.176	3.91	64.7	16.1	1.36	15.2	0.35	0.14	0.66	59	214
69		12.20	12.19	33.678	25.527	246.5	0.201	3.74	61.5	16.7	1.42	16.3	0.05	0.23	0.38	69	213
75	ISL	12.11	12.10	33.680	25.546	244.8	0.216	3.70	60.8	17.0	1.44	16.6	0.04	0.23	0.38	75	
85		11.96	11.95	33.687	25.579	241.8	0.240	3.65	59.8	17.6	1.47	17.2	0.03	0.22	0.39	85	212
98		11.66	11.65	33.712	25.655	234.9	0.271	3.45	56.1	18.9	1.57	18.6	0.02	0.12	0.33	99	211
100	ISL	11.61	11.60	33.716	25.668	233.8	0.276	3.41	55.4	19.1	1.58	18.8	0.02	0.12	0.32	101	
118		11.23	11.22	33.753	25.766	224.8	0.317	3.10	50.0	20.8	1.68	20.3	0.02	0.11	0.29	119	210
125	ISL	11.12	11.10	33.766	25.796	222.0	0.333	3.02	48.6	21.3	1.71	20.8	0.02	0.10	0.29	126	
139		10.87	10.85	33.798	25.866	215.7	0.363	2.90	46.4	22.7	1.78	21.8	0.01	0.09	0.29	140	209
150	ISL	10.49	10.47	33.837	25.963	206.6	0.387	2.85	45.2	24.6	1.86	23.0	0.01	0.08	0.29	151	
169		9.82	9.80	33.918	26.141	190.0	0.424	2.70	42.3	28.2	2.01	25.1	0.01	0.05	0.28	170	208
199		9.40	9.38	34.035	26.302	175.2	0.479	2.08	32.3	33.1	2.21	27.6	0.01	0.02	0.15	200	207
200	ISL	9.37	9.35	34.034	26.306	174.8	0.481	2.09	32.4	33.2	2.21	27.6	0.01			201	
229		8.52	8.50	33.997	26.412	165.0	0.530	2.61	39.7	35.1	2.15	28.2	0.02			230	206
250	ISL	8.14	8.11	34.024	26.491	157.7	0.564	2.50	37.7	38.5	2.23	29.4	0.02			252	
269		7.89	7.86	34.059	26.555	151.8	0.593	2.25	33.7	42.2	2.34	30.6	0.02			271	205
300	ISL	7.47	7.44	34.082	26.634	144.6	0.639	1.96	29.1	47.6	2.47	32.3	0.02			302	
318		7.25	7.22	34.088	26.670	141.4	0.665	1.80	26.6	50.8	2.54	33.3	0.02			320	204
381		6.47	6.44	34.093	26.780	131.3	0.751	1.39	20.2	61.9	2.77	36.7	0.02			384	203
400	ISL	6.31	6.27	34.102	26.808	128.8	0.776	1.23	17.8	64.9	2.83	37.6	0.02			403	
437		6.05	6.01	34.127	26.862	124.1	0.822	0.94	13.5	70.4	2.94	39.0	0.01			440	202
500	ISL	5.74	5.70	34.178	26.941	117.1	0.898	0.65	9.3	78.7	3.09	40.6	0.01			504	
513		5.67	5.63	34.189	26.958	115.5	0.914	0.59	8.4	80.4	3.12	40.9	0.01			517	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 70 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
35 53.2 N	122 22.2 W	25/07/98	1949 UTC	3067 m	220 04 kn	220 02 04	2	1017.4 mb	17.0 C	15.1 C	20m	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	15.87	15.87	33.103	24.319	359.6	0.000	5.91	104.5	2.4	0.38	0.0	0.00	0.31	0.08	0	
1		16.13	16.13	33.103	24.260	365.3	0.004									1	224
1		16.04	16.04	33.104	24.281	363.2	0.004									1	223
2	A	15.87	15.87	33.103	24.319	359.7	0.007	5.91	104.5	2.4	0.38	0.0	0.00	0.31	0.08	2	222
8		15.43	15.43	33.097	24.412	351.0	0.029	5.96	104.5	2.5	0.36	0.0	0.00	0.32	0.10	8	221
10	ISL	15.30	15.30	33.096	24.440	348.4	0.036	5.99	104.7	2.5	0.36	0.0	0.00	0.32	0.12	10	
14	A	15.06	15.06	33.097	24.493	343.4	0.049	6.04	105.1	2.6	0.37	0.0	0.00	0.31	0.17	14	220
20	ISL	14.75	14.75	33.097	24.560	337.2	0.070	6.01	103.9	2.6	0.40	0.4	0.02	0.48	0.23	20	
22		14.64	14.64	33.122	24.603	333.2	0.077	6.00	103.5	2.6	0.41	0.5	0.03	0.55	0.26	22	219
28	A	13.08	13.08	33.077	24.889	306.1	0.096	5.74	95.9	4.0	0.59	2.4	0.22	0.65	0.41	28	218
30	ISL	12.61	12.61	33.065	24.972	298.2	0.102	5.55	91.8	5.1	0.68	3.7	0.35	0.60	0.40	30	
35		11.71	11.71	33.075	25.150	281.4	0.116	5.08	82.4	8.2	0.90	7.2	0.61	0.46	0.39	35	217
43	A	11.44	11.43	33.274	25.354	262.1	0.138	4.80	77.5	11.4	1.09	11.2	0.33	0.47	0.40	43	216
50	ISL	11.11	11.10	33.334	25.460	252.2	0.156	4.55	73.0	12.6	1.18	13.2	0.20	0.37	0.33	50	
53	A	10.95	10.94	33.350	25.501	248.3	0.163	4.44	71.0	13.1	1.22	13.9	0.16	0.31	0.30	53	215
64		10.32	10.31	33.501	25.729	226.8	0.190	4.00	63.1	18.0	1.48	18.1	0.08	0.15	0.31	64	214
75	A	9.96	9.95	33.573	25.846	215.9	0.214	3.78	59.2	20.4	1.61	20.1	0.04	0.09	0.26	75	213
87		9.59	9.58	33.696	26.004	201.1	0.239	3.35	52.1	24.2	1.78	22.8	0.03	0.05	0.22	87	212
99		9.49	9.48	33.726	26.044	197.6	0.263	3.25	50.4	25.2	1.83	23.4	0.03	0.05	0.23	100	211
100	ISL	9.48	9.47	33.727	26.046	197.4	0.265	3.25	50.4	25.3	1.83	23.4	0.03	0.05	0.23	101	
119		9.25	9.24	33.775	26.121	190.6	0.302	3.15	48.6	26.9	1.89	24.4	0.04	0.04	0.19	120	210
125	ISL	9.15	9.14	33.814	26.168	186.3	0.313	3.04	46.8	28.1	1.93	25.1	0.04	0.03	0.18	126	
139		8.92	8.91	33.912	26.281	175.7	0.338	2.73	41.9	31.2	2.04	26.7	0.03	0.02	0.17	140	209
150	ISL	8.75	8.73	33.963	26.348	169.6	0.357	2.54	38.8	33.5	2.12	27.7	0.04	0.01	0.16	151	
169		8.51	8.49	34.019	26.429	162.2	0.389	2.29	34.8	36.8	2.24	29.0	0.06	0.01	0.14	170	208
197		8.37	8.35	34.042	26.469	158.9	0.434	2.18	33.1	38.6	2.28	29.6	0.02	0.01	0.13	198	207
200	ISL	8.33	8.31	34.046	26.479	158.0	0.439	2.16	32.7	39.1	2.29	29.7	0.02			201	
227		7.93	7.91	34.082	26.567	150.0	0.480	1.95	29.3	43.7	2.42	31.2	0.03			228	206
250	ISL	7.69	7.67	34.092	26.610	146.2	0.514	1.86	27.8	46.6	2.48	32.0	0.02			252	
265		7.55	7.52	34.095	26.633	144.2	0.536	1.81	26.9	48.3	2.51	32.5	0.02			267	205
300	ISL	7.17	7.14	34.109	26.698	138.4	0.585	1.58	23.3	53.1	2.62	34.0	0.02			302	
317		6.99	6.96	34.116	26.728	135.7	0.609	1.45	21.3	55.6	2.68	34.8	0.02			319	204
376		6.38	6.35	34.138	26.827	126.7	0.686	1.03	14.9	66.0	2.89	37.8	0.02			379	203
400	ISL	6.17	6.13	34.155	26.868	123.0	0.716	0.86	12.4	70.5	2.98	38.9	0.02			403	
437		5.91	5.87	34.185	26.925	117.9	0.761	0.63	9.0	76.8	3.09	40.2	0.02			440	202
500	ISL	5.68	5.64	34.222	26.983	113.0	0.833	0.48	6.8	81.9	3.16	41.0	0.01			504	
522		5.60	5.56	34.235	27.003	111.3	0.858	0.43	6.1	83.7	3.19	41.3	0.01			526	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 70 65

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
35 42.8 N	122 43.0 W	25/07/98	1538 UTC	1692 m	110 02 kn	120 02 06	4	1016.6 mb	15.1 C	14.2 C	24m	8/8	

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	32.937	24.146	376.1	0.000	5.90	104.6	2.2	0.37	0.3	0.02	0.44	0.11	0	
1		16.07	16.07	32.937	24.146	376.1	0.004	5.90	104.6	2.2	0.37	0.3	0.02	0.44	0.11	1	220
10		15.25	15.25	32.936	24.328	359.1	0.037	5.99	104.5	2.3	0.39	0.4	0.03	0.40	0.12	10	219
19		14.32	14.32	32.944	24.533	339.8	0.068	6.03	103.2	2.7	0.43	0.9	0.05	0.44	0.19	19	218
20	ISL	14.19	14.19	32.940	24.557	337.5	0.072	6.03	103.0	2.8	0.44	0.9	0.06	0.45	0.21	20	
29		13.16	13.16	32.911	24.745	319.8	0.101	6.01	100.4	3.3	0.50	1.4	0.15	0.50	0.31	29	217
30	ISL	13.10	13.10	32.911	24.757	318.7	0.104	6.01	100.3	3.3	0.51	1.5	0.16	0.49	0.30	30	
40		12.71	12.70	32.940	24.856	309.5	0.136	5.89	97.5	3.6	0.59	2.4	0.23	0.31	0.22	40	216
50		12.32	12.31	33.036	25.005	295.5	0.166	5.53	90.9	4.9	0.64	4.0	0.24	0.25	0.22	50	215
59		11.58	11.57	33.221	25.287	268.8	0.192	4.96	80.3	8.8	0.94	9.2	0.16	0.16	0.18	59	214
70		11.24	11.23	33.346	25.447	253.9	0.220	4.56	73.4	11.6	1.12	12.4	0.07	0.15	0.21	70	213
75	ISL	10.98	10.97	33.398	25.534	245.7	0.233	4.42	70.7	13.0	1.21	13.8	0.05	0.14	0.20	75	
85		10.41	10.40	33.487	25.703	229.8	0.257	4.17	65.9	16.0	1.38	16.6	0.03	0.10	0.16	85	212
99		9.69	9.68	33.570	25.889	212.3	0.287	3.86	60.1	20.8	1.59	20.0	0.02	0.04	0.16	99	211
100	ISL	9.65	9.64	33.575	25.900	211.3	0.290	3.85	59.9	21.1	1.60	20.2	0.02	0.04	0.16	100	
120		9.09	9.08	33.686	26.077	194.7	0.330	3.66	56.3	25.1	1.73	22.7	0.02	0.01	0.09	121	210
125	ISL	8.96	8.95	33.722	26.126	190.2	0.340	3.64	55.8	26.0	1.75	23.2	0.02	0.01	0.09	126	
139		8.65	8.64	33.819	26.251	178.6	0.366	3.57	54.4	28.2	1.81	24.3	0.01	0.01	0.09	140	209
150	ISL	8.55	8.53	33.866	26.303	173.8	0.385	3.46	52.6	29.5	1.85	25.0	0.01	0.01	0.13	151	
169		8.46	8.44	33.926	26.364	168.3	0.418	3.19	48.4	31.8	1.94	26.1	0.01	0.00	0.18	170	208
199		8.18	8.16	34.021	26.481	157.7	0.466	2.62	39.5	37.4	2.15	28.6	0.01	0.01	0.04	200	207
200	ISL	8.16	8.14	34.022	26.485	157.3	0.468	2.61	39.4	37.6	2.15	28.7	0.01			201	
229		7.62	7.60	34.031	26.572	149.4	0.512	2.46	36.7	42.8	2.27	30.4	0.01			230	206
250	ISL	7.39	7.37	34.049	26.619	145.1	0.543	2.22	32.9	46.2	2.38	31.7	0.01			252	
268		7.26	7.23	34.069	26.653	142.2	0.569	1.97	29.1	48.9	2.47	32.7	0.01			270	205
300	ISL	7.12	7.09	34.110	26.705	137.7	0.614	1.55	22.8	53.5	2.62	34.3	0.00			302	
318		7.05	7.02	34.131	26.732	135.4	0.639	1.33	19.6	56.1	2.70	35.1	0.00			320	204
378		6.50	6.47	34.168	26.835	126.1	0.717	0.87	12.6	66.1	2.92	37.8	0.00			381	203
400	ISL	6.33	6.29	34.180	26.867	123.3	0.744	0.76	11.0	69.3	2.98	38.5	0.00			403	
438		6.05	6.01	34.196	26.916	118.9	0.791	0.63	9.1	74.6	3.06	39.6	0.01			441	202
500	ISL	5.59	5.55	34.201	26.977	113.5	0.863	0.51	7.3	82.7	3.16	41.1	0.01			504	
521		5.43	5.39	34.204	26.999	111.5	0.886	0.47	6.7	85.4	3.19	41.6	0.01			525	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
35 5.3 N	120 46.7 W	24/07/98	1214 UTC	5065 m	290 07 kn			1016.4 mb	15.9 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	17.04	17.04	33.464	24.327	358.9	0.000	5.91	107.2	4.0	0.31	0.1	0.00	0.64	0.25	0	
1	17.04	17.04	33.464	24.327	358.9	0.004	5.91	107.2	4.0	0.31	0.1	0.00	0.64	0.25	1	208
4	17.04	17.04	33.466	24.329	358.8	0.014	5.92	107.4	4.3	0.30	0.1	0.00	0.70	0.26	4	207
10	16.96	16.96	33.465	24.347	357.3	0.036	5.91	107.0	4.1	0.31	0.1	0.00	0.77	0.28	10	206
19	15.78	15.78	33.478	24.628	330.8	0.067	5.79	102.4	4.7	0.41	0.9	0.03	2.00	0.80	19	205
20 ISL	15.72	15.72	33.479	24.642	329.5	0.070	5.78	102.1	4.7	0.42	1.0	0.03	2.01	0.80	20	
30	15.19	15.19	33.484	24.764	318.2	0.102	5.55	97.0	5.6	0.52	2.3	0.08	2.10	0.81	30	204
40	14.20	14.19	33.505	24.992	296.7	0.133	5.12	87.7	7.7	0.73	5.2	0.21	1.48	0.81	40	203
50	12.88	12.87	33.549	25.295	268.1	0.161	4.45	74.2	11.5	1.04	9.7	0.40	0.60	0.57	50	202
60	11.83	11.82	33.622	25.553	243.7	0.187	3.71	60.6	16.3	1.37	15.2	0.35	0.24	0.45	60	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
35 1.4 N	120 55.2 W	24/07/98	0936 UTC	240 m	250 05 kn			1016.4 mb	16.9 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	17.23	17.23	33.353	24.197	371.2	0.000	5.84	106.2	3.1	0.27	0.1	0.00	0.34	0.14	0	
1	17.23	17.23	33.353	24.197	371.3	0.004	5.84	106.2	3.1	0.27	0.1	0.00	0.34	0.14	1	215
10	17.23	17.23	33.353	24.198	371.6	0.037	5.84	106.2	3.1	0.27	0.1	0.00	0.32	0.14	10	214
20	14.73	14.73	33.424	24.817	312.8	0.071	6.02	104.2	4.3	0.41	0.2	0.02	1.63	0.63	20	213
30	13.97	13.97	33.471	25.013	294.4	0.102	5.38	91.7	7.1	0.63	3.5	0.15	1.57	0.79	30	212
40	12.68	12.67	33.504	25.299	267.4	0.130	4.62	76.7	9.8	0.94	8.8	0.25	0.78	0.54	40	211
50	12.17	12.16	33.546	25.429	255.2	0.156	4.26	70.0	11.6	1.11	11.9	0.11	0.54	0.44	50	210
60	11.52	11.51	33.621	25.609	238.3	0.181	3.77	61.1	15.5	1.36	15.7	0.05	0.33	0.35	60	209
70	11.33	11.32	33.644	25.662	233.5	0.204	3.64	58.8	16.6	1.43	16.7	0.04	0.25	0.28	70	208
75 ISL	11.16	11.15	33.661	25.706	229.4	0.216	3.59	57.8	17.3	1.47	17.4	0.04	0.20	0.23	75	
84	10.84	10.83	33.694	25.789	221.7	0.236	3.48	55.6	18.7	1.54	18.6	0.04	0.13	0.18	84	207
99	10.54	10.53	33.747	25.883	213.0	0.269	3.22	51.1	21.3	1.67	20.4	0.10	0.21	0.26	100	206
100 ISL	10.52	10.51	33.751	25.890	212.4	0.271	3.20	50.8	21.5	1.68	20.5	0.10	0.20	0.26	101	
119	10.20	10.19	33.816	25.996	202.7	0.310	2.87	45.3	24.0	1.83	22.4	0.15	0.05	0.16	120	205
125 ISL	10.14	10.13	33.827	26.015	201.0	0.322	2.82	44.4	24.5	1.86	22.7	0.16	0.05	0.16	126	
140	10.01	9.99	33.852	26.057	197.4	0.352	2.71	42.6	25.7	1.91	23.3	0.19	0.04	0.16	141	204
150 ISL	9.90	9.88	33.878	26.096	193.9	0.372	2.60	40.8	26.7	1.96	23.9	0.18	0.03	0.16	151	
169	9.69	9.67	33.938	26.178	186.4	0.408	2.36	36.8	29.1	2.06	25.3	0.16	0.02	0.16	170	203
200	9.38	9.36	34.049	26.316	173.9	0.464	1.91	29.6	34.0	2.25	27.6	0.23	0.02	0.18	201	202
230	9.25	9.22	34.081	26.363	170.0	0.515	1.77	27.4	36.0	2.32	28.5	0.09			231	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 53.7 N	121 12.0 W	24/07/98	0608 UTC	570 m	300 06 kn			1016.5 mb	16.8 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	17.68	17.68	33.497	24.200	371.0	0.000	5.83	107.1	0.6	0.27	0.1	0.00	0.42	0.13	0	
1	17.68	17.68	33.497	24.200	371.0	0.004	5.83	107.1	0.6	0.27	0.1	0.00	0.42	0.13	1	220
10	17.65	17.65	33.497	24.208	370.6	0.037	5.81	106.6	0.6	0.29	0.0	0.01	0.49	0.15	10	219
19	17.23	17.23	33.505	24.314	360.7	0.070	5.88	107.0	0.6	0.29	0.0	0.00	0.63	0.20	19	218
20 ISL	16.91	16.91	33.504	24.389	353.6	0.074	5.83	105.5	1.1	0.33	0.4	0.02	0.70	0.24	20	
29	13.92	13.92	33.548	25.083	287.7	0.102	5.23	89.1	6.4	0.77	5.2	0.28	1.26	0.55	29	217
30 ISL	13.78	13.78	33.552	25.115	284.7	0.105	5.17	87.9	6.9	0.80	5.6	0.31	1.24	0.55	30	
39	13.07	13.06	33.581	25.281	269.1	0.130	4.60	77.0	11.2	1.01	9.0	0.55	0.97	0.55	39	216
49	12.10	12.09	33.645	25.520	246.6	0.156	3.96	65.0	15.3	1.28	13.8	0.58	1.12	0.50	49	215
50 ISL	11.95	11.94	33.654	25.555	243.2	0.158	3.88	63.5	15.9	1.32	14.5	0.52	1.03	0.49	50	
58	10.90	10.89	33.723	25.801	220.0	0.177	3.31	53.0	20.0	1.63	19.7	0.07	0.24	0.37	58	214
70	10.56	10.55	33.771	25.898	211.0	0.203	3.05	48.5	21.8	1.74	21.2	0.10	0.20	0.31	70	213
75 ISL	10.32	10.31	33.804	25.965	204.7	0.213	2.93	46.3	23.3	1.81	22.1	0.09	0.16	0.26	75	
84	9.93	9.92	33.866	26.080	193.9	0.231	2.74	43.0	26.0	1.92	23.7	0.05	0.08	0.17	84	212
99	9.74	9.73	33.924	26.158	186.9	0.260	2.59	40.5	27.9	2.00	24.9	0.03	0.04	0.19	100	211
100 ISL	9.72	9.71	33.930	26.166	186.1	0.262	2.57	40.1	28.1	2.01	25.0	0.03	0.04	0.19	101	
118	9.34	9.33	34.035	26.310	172.7	0.294	2.21	34.2	32.4	2.17	27.2	0.02	0.01	0.10	119	210
125 ISL	9.28	9.27	34.049	26.331	170.9	0.306	2.14	33.1	33.1	2.20	27.5	0.02	0.01	0.10	126	
138	9.23	9.21	34.062	26.350	169.4	0.328	2.05	31.7	33.9	2.24	27.9	0.02	0.02	0.11	139	209
150 ISL	9.21	9.19	34.086	26.372	167.5	0.348	1.93	29.8	35.1	2.30	28.5	0.02	0.02	0.11	151	
169	9.10	9.08	34.122	26.418	163.5	0.380	1.78	27.4	37.3	2.38	29.4	0.03	0.01	0.12	170	208
197	8.52	8.50	34.151	26.532	153.0	0.424	1.72	26.2	41.3	2.44	30.4	0.02	0.01	0.07	198	207
200 ISL	8.51	8.49	34.159	26.540	152.3	0.429	1.69	25.7	41.7	2.45	30.5	0.02			201	
227	8.44	8.42	34.202	26.585	148.6	0.469	1.38	21.0	44.4	2.57	31.5	0.01			228	206
250 ISL	8.34	8.31	34.217	26.612	146.4	0.503	1.28	19.4	46.1	2.61	32.0	0.01			252	
268	8.24	8.21	34.222	26.631	144.8	0.529	1.24	18.8	47.2	2.63	32.3	0.01			270	205
300 ISL	8.07	8.04	34.233	26.666	142.0	0.575	1.13	17.0	49.6	2.69	33.0	0.01			302	
320	7.96	7.93	34.238	26.686	140.4	0.603	1.07	16.1	51.2	2.73	33.4	0.01			322	204
383	7.55	7.51	34.244	26.751	135.0	0.690	0.96	14.3	56.4	2.83	34.8	0.01			386	203
400 ISL	7.35	7.31	34.233	26.771	133.3	0.713	0.96	14.2	58.5	2.85	35.3	0.01			403	
436	6.89	6.85	34.206	26.814	129.4	0.760	0.95	13.9	63.2	2.90	36.6	0.02			439	202
500 ISL	6.27	6.23	34.188	26.882	123.2	0.841	0.77	11.1	71.0	3.01	38.8	0.02			504	
513	6.15	6.10	34.185	26.896	122.0	0.857	0.73	10.5	72.6	3.03	39.3	0.02			517	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 42.7 N	121 32.7 W	24/07/98	0202	UTC	1014 m	310	06 kn	300 01 06	1	1015.7 mb	18.6 C	15.2 C		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	16.48	16.48	33.562	24.533	339.3	0.000	5.93	106.4	3.1	0.37	0.1	0.01	0.19	0.05	0	
1		16.50	16.50	33.564	24.530	339.6	0.003									1	221
1		16.48	16.48	33.562	24.533	339.3	0.003	5.93	106.4	3.1	0.37	0.1	0.01	0.19	0.05	1	220
1		16.48	16.48	33.562	24.533	339.3	0.003									1	222
10		14.75	14.75	33.343	24.750	318.9	0.033	6.23	107.9	1.6	0.39	0.2	0.04	0.30	0.11	10	219
19		13.82	13.82	33.266	24.886	306.2	0.061	5.97	101.4	2.8	0.52	1.3	0.14	0.46	0.28	19	218
20	ISL	13.64	13.64	33.250	24.910	303.9	0.064	5.89	99.6	3.3	0.56	1.8	0.16	0.47	0.29	20	
30		11.90	11.90	33.168	25.186	277.8	0.093	5.08	82.8	8.8	0.94	7.9	0.34	0.61	0.35	30	217
40		11.34	11.34	33.302	25.394	258.3	0.120	4.68	75.4	13.0	1.19	12.4	0.30	0.26	0.26	40	216
50		10.78	10.77	33.378	25.553	243.3	0.145	4.48	71.4	14.8	1.30	15.0	0.08	0.18	0.27	50	215
60		10.20	10.19	33.493	25.743	225.4	0.169	4.13	65.0	17.6	1.46	17.8	0.05	0.11	0.19	60	214
69		10.03	10.02	33.546	25.813	218.9	0.189	3.91	61.3	19.0	1.54	19.0	0.03	0.11	0.18	69	213
75	ISL	9.89	9.88	33.603	25.881	212.6	0.202	3.72	58.2	20.5	1.61	20.2	0.03	0.08	0.16	75	
85		9.66	9.65	33.704	25.999	201.6	0.222	3.43	53.4	23.1	1.73	22.2	0.02	0.03	0.11	85	212
100		9.45	9.44	33.806	26.113	191.0	0.252	3.26	50.6	25.0	1.80	23.4	0.02	0.01	0.07	101	211
120		9.49	9.48	33.947	26.217	181.6	0.289	2.60	40.4	29.1	2.02	25.6	0.01	0.04	0.19	121	210
125	ISL	9.44	9.43	33.968	26.242	179.4	0.298	2.52	39.1	30.0	2.05	26.0	0.01	0.04	0.19	126	
140		9.22	9.20	34.008	26.309	173.2	0.324	2.38	36.8	32.1	2.12	27.0	0.01	0.03	0.21	141	209
150	ISL	9.07	9.05	34.019	26.342	170.3	0.342	2.38	36.7	32.9	2.13	27.3	0.01	0.03	0.20	151	
169		8.81	8.79	34.039	26.399	165.2	0.373	2.38	36.4	34.6	2.17	28.0	0.01	0.03	0.17	170	208
196		8.59	8.57	34.122	26.498	156.2	0.417	1.89	28.8	39.9	2.37	30.0	0.01	0.02	0.14	197	207
200	ISL	8.58	8.56	34.132	26.508	155.4	0.423	1.83	27.9	40.4	2.39	30.2	0.01			201	
226		8.55	8.53	34.183	26.553	151.6	0.463	1.49	22.7	43.1	2.51	31.1	0.01			227	206
250	ISL	8.33	8.30	34.217	26.614	146.2	0.499	1.26	19.1	46.7	2.62	32.2	0.01			252	
267		8.16	8.13	34.233	26.652	142.8	0.523	1.14	17.2	49.1	2.68	32.9	0.01			269	205
300	ISL	8.07	8.04	34.241	26.672	141.5	0.570	1.09	16.4	50.5	2.71	33.3	0.01			302	
317		8.00	7.97	34.234	26.677	141.3	0.594	1.07	16.1	51.1	2.72	33.5	0.01			319	204
378		6.95	6.91	34.153	26.763	133.3	0.678	1.20	17.6	59.1	2.77	35.8	0.02			381	203
400	ISL	6.86	6.82	34.179	26.797	130.5	0.707	1.04	15.2	61.9	2.84	36.4	0.02			403	
437		6.76	6.72	34.235	26.854	125.5	0.754	0.71	10.4	67.0	2.98	37.6	0.02			440	202
500	ISL	5.88	5.84	34.233	26.967	114.8	0.830	0.50	7.2	79.3	3.14	40.6	0.01			504	
514		5.68	5.64	34.234	26.993	112.3	0.846	0.45	6.4	82.0	3.17	41.3	0.01			518	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 23.4 N	122 15.0 W	23/07/98	1857	UTC	4026 m	260	02 kn	260 01 05	2	1017.2 mb	18.0 C	15.5 C	23m	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	15.35	15.35	32.963	24.327	358.9	0.000	5.90	103.2	2.5	0.34	0.1	0.00	0.20	0.07	0	
1		15.37	15.37	32.959	24.319	359.6	0.004									1	223
2		15.36	15.36	32.959	24.321	359.5	0.007									2	224
2	A	15.35	15.35	32.963	24.327	359.0	0.007	5.90	103.2	2.5	0.34	0.1	0.00	0.20	0.07	2	222
10		15.21	15.21	32.960	24.355	356.5	0.036	5.94	103.6	2.5	0.34	0.1	0.00	0.24	0.09	10	221
18	A	15.08	15.08	33.085	24.480	344.8	0.064	6.03	104.9	2.7	0.37	0.1	0.00	0.31	0.12	18	220
20	ISL	15.07	15.07	33.085	24.482	344.7	0.071	6.02	104.7	2.7	0.37	0.1	0.00	0.33	0.14	20	
25		15.05	15.05	33.087	24.488	344.3	0.088	6.01	104.5	2.6	0.38	0.1	0.00	0.41	0.20	25	219
30	ISL	15.00	15.00	33.089	24.501	343.2	0.105	6.00	104.2	2.7	0.39	0.2	0.01	0.58	0.25	30	
32	A	14.98	14.98	33.090	24.506	342.8	0.112	5.99	104.0	2.7	0.39	0.2	0.02	0.65	0.27	32	218
39		14.46	14.45	33.057	24.592	334.8	0.136	5.97	102.6	2.3	0.35	0.1	0.01	0.68	0.32	39	217
50	A	13.83	13.82	33.093	24.751	319.9	0.172	5.77	97.9	2.8	0.43	0.7	0.14	0.55	0.34	50	216
56		13.54	13.53	33.094	24.811	314.3	0.191	5.68	95.8	3.3	0.50	1.5	0.20	0.36	0.26	56	215
63	A	12.99	12.98	33.090	24.918	304.3	0.212	5.53	92.2	4.3	0.59	2.9	0.24	0.27	0.42	63	214
74		11.73	11.72	33.261	25.291	268.9	0.244	4.80	78.0	10.4	1.04	10.3	0.26	0.19	0.40	74	213
75	ISL	11.64	11.63	33.270	25.315	266.6	0.247	4.76	77.2	10.7	1.06	10.7	0.24	0.18	0.38	75	
87	A	10.78	10.77	33.376	25.552	244.2	0.277	4.43	70.6	13.7	1.24	14.4	0.04	0.13	0.14	87	212
100	ISL	10.21	10.20	33.557	25.792	221.6	0.308	3.91	61.6	17.9	1.48	18.3	0.02	0.06	0.15	100	
102		10.14	10.13	33.584	25.825	218.5	0.312	3.83	60.2	18.5	1.52	18.8	0.02	0.05	0.15	102	211
119		9.67	9.66	33.720	26.010	201.2	0.348	3.50	54.5	22.7	1.70	21.7	0.01	0.01	0.07	120	210
125	ISL	9.53	9.52	33.762	26.066	196.0	0.360	3.40	52.8	23.9	1.75	22.5	0.01	0.01	0.07	126	
138		9.28	9.26	33.841	26.169	186.5	0.384	3.22	49.8	26.0	1.83	23.8	0.01	0.01	0.07	139	209
150	ISL	9.11	9.09	33.890	26.234	180.5	0.406	3.09	47.6	27.7	1.89	24.7	0.01	0.01	0.07	151	
168		8.91	8.89	33.939	26.305	174.1	0.438	2.97	45.6	29.7	1.95	25.5	0.01	0.00	0.07	169	208
197		8.60	8.58	33.987	26.391	166.4	0.488	2.99	45.6	32.1	1.99	26.2	0.00	0.00	0.05	198	207
200	ISL	8.56	8.54	33.991	26.400	165.5	0.493	2.98	45.4	32.4	2.00	26.3	0.00			201	
226		8.23	8.21	34.017	26.471	159.2	0.535	2.82	42.6	35.8	2.08	27.7	0.00			227	206
250	ISL	7.92	7.89	34.039	26.535	153.4	0.572	2.55	38.3	39.7	2.21	29.3	0.00			251	
266		7.70	7.67	34.050	26.576	149.7	0.597	2.37	35.4	42.5	2.30	30.3	0.00			268	205
300	ISL	7.15	7.12	34.047	26.651	142.7	0.646	2.21	32.6	48.2	2.42	32.0	0.00			302	
316		6.92	6.89	34.047	26.683	139.9	0.669	2.12	31.1	51.0	2.47	32.8	0.00			318	204
376		6.52	6.49	34.121	26.796	129.8	0.750	1.23	17.9	62.2	2.82	36.5	0.00			378	203
400	ISL	6.24	6.20	34.116	26.828	126.8	0.781	1.12	16.2	66.3	2.88	37.6	0.00			403	
437		5.78	5.74	34.102	26.875	122.5	0.827	1.05	15.0	72.5	2.94	39.1	0.00			440	202
500	ISL	5.29	5.25	34.132	26.958	114.9	0.902	0.75	10.6	83.1	3.07	41.0	0.00			503	
521		5.13	5.09	34.143	26.986	112.4	0.925	0.65	9.1	86.6	3.12	41.7	0.00			525	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 3.4 N	122 56.4 W	23/07/98	1308 UTC	4232 m	340 06 kn	340 02 04	2	1016.2 mb	17.0 C	14.9 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	16.33	16.33	32.921	24.075	382.9	0.000	5.73	102.1	2.0	0.27	0.1	0.00	0.19	0.04	0	
1	16.33	16.33	32.921	24.075	382.9	0.004	5.73	102.1	2.0	0.27	0.1	0.00	0.19	0.04	1	220
10 ISL	16.34	16.34	32.921	24.073	383.4	0.038	5.73	102.2	2.0	0.27	0.1	0.00	0.19	0.05	10	
15	16.34	16.34	32.921	24.073	383.5	0.057	5.73	102.2	2.0	0.27	0.1	0.00	0.19	0.05	15	219
20 ISL	16.13	16.13	32.915	24.117	379.6	0.077	5.76	102.3	2.1	0.28	0.1	0.00	0.20	0.05	20	
30	15.67	15.67	32.916	24.221	369.9	0.114	5.82	102.4	2.4	0.30	0.1	0.00	0.23	0.06	30	218
45	15.41	15.40	32.987	24.333	359.6	0.169	5.89	103.1	2.1	0.29	0.1	0.00	0.31	0.10	45	217
50 ISL	15.02	15.01	33.062	24.476	346.1	0.186	5.93	103.0	2.0	0.29	0.1	0.00	0.32	0.13	50	
55	14.65	14.64	33.135	24.612	333.3	0.203	5.96	102.8	2.0	0.30	0.1	0.00	0.33	0.16	55	216
65	14.50	14.49	33.168	24.670	328.1	0.236	5.89	101.3	2.0	0.30	0.1	0.00	0.37	0.20	65	215
74	14.32	14.31	33.210	24.740	321.6	0.266	5.82	99.8	2.3	0.32	0.1	0.01	0.37	0.30	74	214
75 ISL	14.29	14.28	33.216	24.751	320.6	0.269	5.80	99.4	2.3	0.33	0.1	0.02	0.37	0.30	75	
84	13.85	13.84	33.265	24.881	308.5	0.297	5.49	93.3	3.4	0.46	1.5	0.12	0.41	0.33	84	213
94	12.76	12.75	33.295	25.122	285.6	0.327	5.01	83.2	6.5	0.75	6.4	0.06	0.24	0.30	94	212
100 ISL	12.12	12.11	33.327	25.270	271.6	0.344	4.77	78.2	8.7	0.92	9.2	0.05	0.16	0.23	100	
109	11.31	11.30	33.399	25.476	252.1	0.367	4.47	72.0	12.0	1.14	12.9	0.04	0.08	0.13	109	211
124	10.58	10.57	33.580	25.747	226.6	0.403	4.06	64.5	15.9	1.37	16.7	0.02	0.04	0.10	125	210
125 ISL	10.54	10.53	33.588	25.760	225.3	0.405	4.03	63.9	16.2	1.39	16.9	0.02	0.04	0.10	126	
145	9.83	9.81	33.702	25.970	205.6	0.448	3.49	54.6	22.1	1.68	21.3	0.01	0.01	0.05	146	209
150 ISL	9.72	9.70	33.731	26.011	201.8	0.459	3.37	52.6	23.3	1.73	22.1	0.01	0.01	0.05	151	
169	9.42	9.40	33.826	26.135	190.4	0.496	2.96	45.9	27.1	1.90	24.4	0.00	0.00	0.05	170	208
199	9.12	9.10	33.915	26.253	179.7	0.551	2.57	39.6	31.3	2.07	26.5	0.01	0.00	0.07	200	207
200 ISL	9.10	9.08	33.917	26.258	179.2	0.553	2.57	39.6	31.4	2.07	26.6	0.01			201	
229	8.58	8.56	33.983	26.391	166.9	0.603	2.55	38.8	34.8	2.13	27.9	0.00			230	206
250 ISL	8.25	8.22	34.018	26.469	159.8	0.638	2.43	36.7	37.9	2.21	29.0	0.00			251	
268	7.99	7.96	34.042	26.527	154.5	0.666	2.29	34.4	40.8	2.29	30.0	0.00			270	205
300 ISL	7.61	7.58	34.071	26.606	147.4	0.714	2.02	30.1	45.7	2.42	31.7	0.00			302	
318	7.42	7.39	34.083	26.642	144.1	0.741	1.86	27.6	48.5	2.49	32.6	0.00			320	204
378	6.81	6.77	34.123	26.759	133.6	0.824	1.29	18.9	58.7	2.75	35.7	0.00			380	203
400 ISL	6.61	6.57	34.137	26.797	130.2	0.853	1.11	16.2	62.4	2.83	36.7	0.00			403	
437	6.31	6.27	34.160	26.854	125.0	0.900	0.86	12.4	68.5	2.95	38.3	0.00			440	202
500 ISL	5.85	5.81	34.203	26.947	116.6	0.976	0.56	8.0	78.2	3.10	40.3	0.00			503	
516	5.73	5.69	34.215	26.972	114.4	0.995	0.49	7.0	80.7	3.14	40.8	0.00			519	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 43.3 N	123 38.1 W	23/07/98	0727 UTC	4321 m	350 11 kn			1016.8 mb	17.3 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	16.95	16.95	33.054	24.034	386.8	0.000	5.65	102.0	1.8	0.23	0.1	0.00	0.17	0.04	0	
1	16.95	16.95	33.054	24.034	386.9	0.004	5.65	102.0	1.8	0.23	0.1	0.00	0.17	0.04	1	224
10 ISL	16.97	16.97	33.059	24.033	387.2	0.039	5.65	102.1	1.7	0.23	0.1	0.00	0.18	0.05	10	
15	16.98	16.98	33.064	24.035	387.2	0.058	5.65	102.1	1.7	0.23	0.1	0.00	0.19	0.05	15	223
20 ISL	16.99	16.99	33.071	24.038	387.1	0.077	5.65	102.1	1.7	0.23	0.1	0.00	0.20	0.05	20	
30	17.01	17.01	33.085	24.045	386.8	0.116	5.64	102.0	1.7	0.23	0.1	0.00	0.21	0.06	30	222
45	16.87	16.86	33.285	24.231	369.5	0.173	5.66	102.2	2.0	0.24	0.1	0.00	0.23	0.07	45	221
50 ISL	16.36	16.35	33.303	24.363	357.0	0.191	5.76	103.0	2.0	0.25	0.1	0.00	0.25	0.08	50	
59	15.45	15.44	33.327	24.587	336.0	0.222	5.92	103.9	2.1	0.26	0.1	0.00	0.27	0.09	59	220
75	15.34	15.33	33.421	24.684	327.2	0.275	5.81	101.8	2.3	0.26	0.1	0.00	0.27	0.14	75	219
85	15.38	15.37	33.519	24.751	321.1	0.308	5.76	101.1	2.5	0.25	0.1	0.00	0.25	0.16	85	218
95	15.57	15.56	33.686	24.838	313.2	0.339	5.68	100.2	2.6	0.23	0.1	0.00	0.27	0.22	95	217
100 ISL	15.36	15.34	33.689	24.887	308.7	0.355	5.61	98.5	2.8	0.25	0.2	0.05	0.30	0.26	100	
104	15.11	15.09	33.675	24.931	304.6	0.367	5.54	96.8	3.0	0.28	0.3	0.11	0.31	0.28	104	216
114	14.46	14.44	33.665	25.063	292.2	0.397	5.33	91.9	4.1	0.41	2.0	0.23	0.27	0.28	114	215
124	13.42	13.40	33.636	25.256	273.8	0.425	5.13	86.6	5.7	0.58	4.8	0.05	0.22	0.24	125	214
125 ISL	13.30	13.28	33.632	25.277	271.9	0.428	5.11	86.0	5.9	0.60	5.1	0.05	0.21	0.24	126	
139	11.76	11.74	33.602	25.552	245.7	0.464	4.76	77.5	9.9	0.92	10.0	0.02	0.13	0.17	140	213
150 ISL	10.90	10.88	33.636	25.735	228.4	0.490	4.41	70.5	13.6	1.16	13.8	0.02	0.08	0.11	151	
162	10.20	10.18	33.699	25.906	212.2	0.517	4.08	64.3	17.4	1.38	17.3	0.01	0.04	0.06	163	212
192	9.22	9.20	33.875	26.206	184.1	0.576	4.09	63.1	22.5	1.51	20.1	0.00	0.00	0.03	193	211
200 ISL	9.08	9.06	33.903	26.250	180.0	0.591	4.06	62.5	23.6	1.54	20.7	0.00			201	
228	8.70	8.68	33.962	26.357	170.3	0.640	3.85	58.8	27.5	1.67	22.6	0.00			229	210
250 ISL	8.28	8.25	33.987	26.441	162.5	0.676	3.58	54.1	31.9	1.81	24.7	0.00			251	
268	7.93	7.90	33.998	26.501	156.9	0.705	3.33	50.0	35.7	1.94	26.4	0.00			269	209
300 ISL	7.39	7.36	34.003	26.583	149.4	0.754	2.96	43.9	41.8	2.13	28.8	0.00			302	
313	7.19	7.16	34.002	26.611	146.8	0.773	2.82	41.6	44.2	2.20	29.7	0.00			315	208
376	6.39	6.36	34.013	26.727	136.2	0.863	2.10	30.4	56.2	2.52	34.0	0.00			378	207
400 ISL	6.10	6.07	34.030	26.778	131.5	0.895	1.76	25.3	62.2	2.66	35.9	0.00			402	
436	5.74	5.70	34.060	26.847	125.1	0.941	1.30	18.5	70.6	2.86	38.4	0.00			439	206
500 ISL	5.45	5.41	34.093	26.909	119.8	1.019	0.98	13.9	77.9	3.00	40.0	0.00			503	
521	5.36	5.32	34.104	26.928	118.1	1.044	0.87	12.3	80.3	3.04	40.5	0.00			524	205

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 23.1 N	124 19.4 W	23/07/98	0138	UTC	4639 m	330	12 kn	330 03 06	2	1017.1 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	17.70	17.70	33.254	24.009	389.2	0.000	5.59	102.5	1.6	0.23	0.0	0.00	0.13	0.03	0	
1		17.70	17.70	33.255	24.010	389.1	0.004									1	222
1		17.70	17.70	33.253	24.008	389.3	0.004									1	223
1		17.70	17.70	33.254	24.009	389.2	0.004	5.59	102.5	1.6	0.23	0.0	0.00	0.13	0.03	1	220
1		17.70	17.70	33.255	24.010	389.1	0.004									1	221
1		17.70	17.70	33.253	24.008	389.3	0.004									1	224
10	ISL	17.70	17.70	33.256	24.011	389.3	0.039	5.60	102.7	1.6	0.23	0.0	0.00	0.13	0.03	10	
15		17.70	17.70	33.257	24.012	389.4	0.058	5.60	102.7	1.6	0.23	0.0	0.00	0.13	0.03	15	219
20	ISL	17.70	17.70	33.265	24.018	389.0	0.078	5.59	102.5	1.6	0.23	0.0	0.00	0.14	0.03	20	
29		17.69	17.69	33.280	24.032	387.9	0.113	5.58	102.4	1.7	0.23	0.0	0.00	0.15	0.04	29	218
30	ISL	17.68	17.67	33.283	24.037	387.5	0.117	5.58	102.3	1.7	0.23	0.0	0.00	0.15	0.04	30	
44		17.58	17.57	33.413	24.161	376.2	0.170	5.62	102.9	1.8	0.24	0.0	0.00	0.19	0.05	44	217
50	ISL	17.11	17.10	33.420	24.279	365.1	0.192	5.73	104.0	1.8	0.24	0.0	0.00	0.19	0.05	50	
59		16.31	16.30	33.417	24.463	347.9	0.224	5.89	105.2	1.9	0.25	0.0	0.00	0.20	0.05	59	216
75		15.61	15.60	33.429	24.630	332.3	0.279	5.85	103.1	2.0	0.27	0.0	0.00	0.25	0.10	75	215
84		15.48	15.47	33.456	24.680	327.8	0.309	5.83	102.5	2.1	0.27	0.0	0.00	0.28	0.19	84	214
94		15.38	15.37	33.497	24.734	323.0	0.341	5.73	100.5	2.3	0.28	0.0	0.00	0.30	0.25	94	213
100	ISL	15.23	15.21	33.559	24.815	315.5	0.360	5.64	98.7	2.7	0.30	0.1	0.01	0.43	0.38	100	
102		15.14	15.12	33.579	24.850	312.2	0.367	5.60	97.8	2.9	0.30	0.1	0.02	0.47	0.42	102	212
113		14.09	14.07	33.601	25.091	289.4	0.400	5.26	90.0	4.6	0.49	2.8	0.19	0.31	0.46	113	211
124		12.80	12.78	33.578	25.335	266.2	0.430	4.95	82.4	7.1	0.73	6.9	0.02	0.19	0.21	125	210
125	ISL	12.69	12.67	33.577	25.355	264.3	0.433	4.92	81.7	7.4	0.75	7.3	0.02	0.18	0.21	126	
138		11.46	11.44	33.591	25.599	241.2	0.466	4.58	74.1	11.2	1.03	11.7	0.01	0.10	0.16	139	209
150	ISL	10.60	10.58	33.635	25.787	223.4	0.494	4.26	67.7	14.9	1.26	15.3	0.00	0.06	0.10	151	
163		9.89	9.87	33.701	25.960	207.0	0.522	3.95	61.8	19.0	1.47	18.7	0.00	0.03	0.05	164	208
192		8.88	8.86	33.869	26.255	179.3	0.578	3.43	52.5	27.6	1.82	24.0	0.00	0.00	0.04	193	207
200	ISL	8.71	8.69	33.900	26.306	174.5	0.592	3.38	51.6	29.0	1.86	24.7	0.00			201	
228		8.23	8.21	33.970	26.434	162.7	0.639	3.25	49.1	33.2	1.93	26.1	0.00			229	206
250	ISL	7.83	7.81	33.993	26.512	155.5	0.674	3.05	45.7	37.4	2.05	27.7	0.00			251	
268		7.53	7.50	34.001	26.562	151.0	0.702	2.85	42.4	40.8	2.15	29.1	0.00			269	205
300	ISL	7.16	7.13	34.015	26.625	145.3	0.749	2.50	36.9	46.1	2.31	31.2	0.00			302	
316		7.01	6.98	34.022	26.651	142.9	0.772	2.32	34.1	48.6	2.39	32.1	0.00			318	204
378		6.53	6.50	34.069	26.753	133.9	0.858	1.61	23.4	58.7	2.67	35.6	0.00			380	203
400	ISL	6.35	6.31	34.082	26.787	130.8	0.887	1.39	20.1	62.5	2.76	36.7	0.00			402	
438		6.04	6.00	34.105	26.845	125.6	0.936	1.07	15.4	69.0	2.90	38.5	0.00			441	202
500	ISL	5.66	5.62	34.159	26.936	117.5	1.011	0.72	10.3	78.5	3.05	40.5	0.00			503	
514		5.58	5.54	34.171	26.955	115.8	1.027	0.64	9.1	80.6	3.09	40.9	0.00			517	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 27.0 N	120 31.6 W	21/07/98	1143	UTC	74 m	120	05 kn			1015.4 mb	20.0 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	18.29	18.29	33.355	23.943	395.5	0.000	5.85	108.6	3.1	0.26	0.0	0.00	0.50	0.19	0	
1		18.29	18.29	33.355	23.943	395.5	0.004	5.85	108.6	3.1	0.26	0.0	0.00	0.50	0.19	1	209
4		17.81	17.81	33.368	24.070	383.5	0.016	5.98	110.0	3.4	0.28	0.0	0.00	0.61	0.24	4	208
10		15.73	15.73	33.354	24.544	338.5	0.037	6.14	108.4	4.8	0.31	0.0	0.01	2.30	0.37	10	207
20		14.28	14.28	33.367	24.868	307.9	0.070	5.63	96.6	6.4	0.44	0.4	0.07	4.04	0.49	20	206
30		13.83	13.83	33.380	24.972	298.3	0.100	5.43	92.3	6.7	0.51	1.3	0.16	0.66	0.30	30	205
40		13.76	13.75	33.388	24.993	296.6	0.130	5.35	90.8	6.9	0.55	1.7	0.20	0.74	0.39	40	204
50		13.55	13.54	33.407	25.051	291.3	0.159	5.13	86.7	7.5	0.63	2.7	0.27	0.70	0.40	50	203
59		13.45	13.44	33.420	25.081	288.7	0.185	5.02	84.7	7.8	0.67	3.3	0.31	0.65	0.36	59	202
70		12.74	12.73	33.499	25.284	269.6	0.216	4.38	72.8	10.9	0.98	8.4	0.53	0.36	0.29	70	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 19.1 N	120 48.7 W	21/07/98	1449	UTC	809 m	300	07 kn	300 04 05	5	1015.6 mb	16.6 C	16.0 C	20m	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	18.76	18.76	33.341	23.815	407.7	0.000	5.77	108.1	2.1	0.23	0.0	0.01	0.42	0.13	0	
1		18.76	18.76	33.341	23.815	407.7	0.004	5.77	108.1	2.1	0.23	0.0	0.01	0.42	0.13	1	220
10		18.52	18.52	33.349	23.881	401.7	0.040	5.79	108.0	2.2	0.25	0.0	0.01	0.45	0.15	10	219
20		14.25	14.25	33.354	24.865	308.3	0.076	5.83	99.9	4.7	0.46	0.9	0.07	1.52	0.70	20	217
30		13.57	13.57	33.418	25.055	290.4	0.106	5.18	87.6	6.7	0.66	3.4	0.38	1.18	0.65	30	218
40		12.48	12.47	33.559	25.380	259.7	0.133	4.33	71.6	12.2	1.10	11.2	0.26	0.67	0.52	40	216
50		11.53	11.52	33.632	25.616	237.4	0.158	3.77	61.1	15.5	1.36	15.7	0.04	0.26	0.31	50	215
60		10.85	10.84	33.710	25.799	220.1	0.181	3.34	53.4	19.4	1.58	19.0	0.06	0.15	0.22	60	214
70		10.72	10.71	33.729	25.837	216.8	0.203	3.24	51.7	20.3	1.63	19.6	0.06	0.14	0.20	70	213
75	ISL	10.64	10.63	33.748	25.866	214.1	0.214	3.15	50.1	21.0	1.67	20.2	0.05	0.13	0.20	75	
85		10.44	10.43	33.794	25.937	207.6	0.235	2.95	46.8	22.6	1.76	21.6	0.04	0.09	0.19	85	212
99		10.09	10.08	33.860	26.049	197.2	0.263	2.76	43.4	24.9	1.86	23.1	0.03	0.05	0.15	100	211
100	ISL	10.07	10.06	33.864	26.055	196.6	0.265	2.75	43.3	25.1	1.87	23.2	0.03	0.05	0.15	101	
119		9.77	9.76	33.921	26.151	188.0	0.302	2.53	39.6	27.6	1.98	24.6	0.10	0.03	0.13	120	210
125	ISL	9.73	9.72	33.934	26.168	186.5	0.313	2.48	38.7	28.1	2.00	24.9	0.09	0.03	0.12	126	
139		9.67	9.65	33.966	26.203	183.4	0.339	2.38	37.1	29.1	2.04	25.4	0.04	0.02	0.10	140	209
150	ISL	9.54	9.52	34.004	26.254	178.7	0.359	2.25	35.0	30.6	2.10	26.2	0.04	0.01	0.10	151	
169		9.32	9.30	34.066	26.339	171.1	0.392	2.03	31.4	33.3	2.20	27.4	0.03	0.01	0.11	170	208
198		9.17	9.15	34.100	26.390	166.8	0.441	1.90	29.3	35.1	2.27	28.1	0.02	0.02	0.13	199	207
200	ISL	9.15	9.13	34.102	26.395	166.3	0.444	1.89	29.2	35.3	2.27	28.2	0.02			201	
229		8.92	8.90	34.138	26.460	160.6	0.492	1.77	27.2	37.7	2.34	29.1	0.01			230	206
250	ISL	8.82	8.79	34.163	26.496	157.6	0.525	1.64	25.1	39.4	2.39	29.7	0.01			252	
268		8.73	8.70	34.180	26.523	155.3	0.553	1.53	23.4	40.9	2.44	30.2	0.01			270	205
300	ISL	8.47	8.44	34.193	26.574	151.0	0.602	1.44	21.9	43.6	2.50	31.0	0.01			302	
320		8.29	8.26	34.197	26.605	148.3	0.632	1.40	21.2	45.4	2.53	31.5	0.01			322	204
379		7.90	7.86	34.226	26.687	141.4	0.718	1.10	16.5	51.1	2.68	33.1	0.02			381	203
400	ISL	7.73	7.69	34.230	26.715	139.0	0.747	1.03	15.4	53.1	2.72	33.6	0.02			403	
436		7.37	7.33	34.233	26.769	134.1	0.796	0.92	13.6	57.7	2.80	34.8	0.01			439	202
500	ISL	6.31	6.26	34.239	26.918	120.0	0.878	0.59	8.5	72.9	3.02	38.6	0.01			503	
512		6.11	6.06	34.242	26.946	117.3	0.892	0.53	7.6	75.8	3.06	39.3	0.01			516	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 9.2 N	121 9.0 W	21/07/98	1853 UTC	2179 m	320 08 kn	320 02 04	2	1016.9 mb	18.0 C	17.1 C	17m	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	16.86	16.86	33.503	24.399	352.0	0.000	5.92	107.0	0.7	0.29	0.0	0.00	0.41	0.13	0	
1		16.90	16.90	33.504	24.391	352.8	0.004									1	221
1	A	16.86	16.86	33.503	24.399	352.0	0.004	5.92	107.0	0.7	0.29	0.0	0.00	0.41	0.13	1	220
1		16.95	16.95	33.504	24.379	353.9	0.004									1	222
10	ISL	16.47	16.47	33.494	24.483	344.3	0.035	5.97	107.1	0.8	0.31	0.1	0.01	0.52	0.20	10	
13	A	16.20	16.20	33.492	24.544	338.6	0.045	5.99	106.9	0.8	0.32	0.1	0.01	0.56	0.22	13	219
20	ISL	15.28	15.28	33.511	24.765	317.8	0.068	5.83	102.1	3.2	0.48	1.8	0.11	1.15	0.60	20	
25	A	14.50	14.50	33.535	24.952	300.1	0.084	5.61	96.8	5.8	0.64	3.8	0.24	1.48	0.84	25	218
30	ISL	13.75	13.75	33.564	25.131	283.2	0.098	5.29	89.9	9.1	0.85	6.8	0.51	1.26	0.77	30	
36	A	12.87	12.87	33.602	25.337	263.7	0.115	4.82	80.4	13.0	1.11	10.8	0.72	0.81	0.69	36	217
47	A	11.51	11.50	33.661	25.642	234.9	0.142	3.88	62.9	17.4	1.45	17.3	0.08	0.21	0.38	47	216
50	ISL	11.21	11.20	33.689	25.719	227.6	0.149	3.63	58.5	18.7	1.54	18.6	0.07	0.15	0.33	50	
56		10.72	10.71	33.745	25.850	215.3	0.162	3.22	51.4	21.1	1.68	20.7	0.05	0.11	0.26	56	215
64	A	10.30	10.29	33.792	25.959	205.0	0.179	2.98	47.1	23.3	1.79	22.4	0.05	0.06	0.20	64	214
74		9.94	9.93	33.852	26.068	194.9	0.199	2.70	42.4	25.9	1.92	24.1	0.03	0.03	0.21	74	213
75	ISL	9.92	9.91	33.858	26.076	194.2	0.201	2.67	41.9	26.1	1.93	24.2	0.03	0.03	0.21	75	
85		9.79	9.78	33.917	26.144	187.9	0.220	2.45	38.3	27.9	2.02	25.2	0.03	0.03	0.20	85	212
100		9.55	9.54	33.978	26.231	179.9	0.248	2.30	35.8	30.3	2.10	26.3	0.02	0.03	0.19	101	211
121		9.32	9.31	34.010	26.294	174.3	0.285	2.25	34.8	32.0	2.15	27.0	0.02	0.02	0.21	122	210
125	ISL	9.29	9.28	34.016	26.304	173.5	0.292	2.23	34.5	32.3	2.16	27.1	0.02	0.02	0.21	126	
140		9.16	9.14	34.036	26.340	170.2	0.318	2.19	33.8	33.3	2.18	27.4	0.03	0.02	0.18	141	209
150	ISL	9.02	9.00	34.040	26.366	168.0	0.335	2.22	34.2	34.1	2.19	27.7	0.03	0.02	0.17	151	
171		8.69	8.67	34.047	26.424	162.8	0.369	2.28	34.8	35.9	2.22	28.3	0.03	0.02	0.16	172	208
200		8.36	8.34	34.076	26.498	156.2	0.416	2.15	32.6	39.0	2.29	29.3	0.02	0.02	0.14	201	207
231		7.99	7.97	34.082	26.558	150.9	0.463	2.16	32.5	41.9	2.34	30.1	0.02			232	206
250	ISL	7.75	7.73	34.073	26.586	148.5	0.492	2.22	33.2	43.4	2.35	30.4	0.02			252	
270		7.48	7.45	34.060	26.615	145.9	0.521	2.26	33.6	45.2	2.36	30.9	0.02			272	205
300	ISL	7.02	6.99	34.044	26.667	141.2	0.564	2.12	31.2	49.7	2.45	32.5	0.01			302	
319		6.80	6.77	34.051	26.703	138.0	0.591	1.93	28.2	53.0	2.53	33.6	0.01			321	204
376		7.00	6.96	34.219	26.809	129.1	0.667	0.90	13.2	61.8	2.88	36.0	0.01			378	203
400	ISL	6.70	6.66	34.228	26.857	124.6	0.697	0.75	11.0	66.7	2.96	37.2	0.01			403	
430		6.24	6.20	34.224	26.914	119.2	0.734	0.67	9.7	72.6	3.03	38.6	0.01			433	202
500	ISL	5.89	5.85	34.261	26.988	112.8	0.815	0.47	6.7	80.2	3.15	40.0	0.01			504	
516		5.81	5.77	34.270	27.005	111.4	0.833	0.43	6.1	81.9	3.18	40.3	0.01			520	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 49.0 N	121 50.3 W	22/07/98	0051 UTC	3628 m	340 10 kn	330 03 08	2	1015.6 mb	16.7 C	15.5 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		16.83	16.83	32.918	23.958	394.1	0.000	5.70	102.6	1.6	0.25	0.0	0.00	0.17	0.05	0	220
1		16.83	16.83	32.917	23.957	394.2	0.004									1	222
1		16.82	16.82	32.919	23.961	393.8	0.004									1	221
10	ISL	16.67	16.67	32.917	23.994	390.9	0.039	5.71	102.5	1.6	0.25	0.0	0.00	0.17	0.05	10	
14		16.60	16.60	32.916	24.010	389.6	0.055	5.71	102.3	1.6	0.25	0.0	0.00	0.17	0.05	14	219
20	ISL	16.56	16.56	32.917	24.020	388.8	0.078	5.71	102.2	1.6	0.25	0.0	0.00	0.18	0.05	20	
30		16.51	16.51	32.918	24.033	387.9	0.117	5.71	102.1	1.7	0.25	0.0	0.00	0.20	0.05	30	218
43		16.43	16.42	32.916	24.050	386.7	0.167	5.72	102.1	1.7	0.25	0.0	0.00	0.30	0.08	43	217
50	ISL	15.79	15.78	32.949	24.220	370.6	0.194	5.86	103.3	1.8	0.26	0.0	0.00	0.32	0.09	50	
54		15.36	15.35	32.985	24.343	359.0	0.208	5.94	103.9	1.9	0.27	0.0	0.00	0.33	0.10	54	216
64		14.58	14.57	33.137	24.629	332.0	0.243	5.91	101.8	2.0	0.30	0.0	0.00	0.32	0.18	64	215
74		14.32	14.31	33.134	24.682	327.2	0.276	5.87	100.6	2.0	0.33	0.0	0.00	0.42	0.28	74	214
75	ISL	14.29	14.28	33.134	24.688	326.6	0.279	5.85	100.2	2.1	0.34	0.1	0.02	0.42	0.29	75	
84		13.87	13.86	33.189	24.818	314.5	0.308	5.56	94.4	2.8	0.43	1.0	0.14	0.42	0.34	84	213
93		13.13	13.12	33.398	25.129	285.0	0.335	5.12	85.8	5.8	0.65	5.1	0.07	0.23	0.30	93	212
100	ISL	12.32	12.31	33.469	25.342	264.8	0.354	4.92	81.1	8.3	0.85	8.4	0.04	0.16	0.24	100	
108		11.39	11.38	33.519	25.555	244.6	0.375	4.70	75.9	11.3	1.07	12.1	0.02	0.11 A	0.17 A	108	211
123		10.29	10.28	33.650	25.851	216.5	0.409	3.99	63.0	17.2	1.42	17.7	0.01	0.04	0.07	124	210
125	ISL	10.21	10.20	33.664	25.876	214.2	0.414	3.98	62.7	17.6	1.44	18.0	0.01	0.04	0.07	126	
144		9.68	9.66	33.770	26.048	198.2	0.453	3.84	59.9	20.6	1.54	19.8	0.00	0.01	0.04	145	209
150	ISL	9.52	9.50	33.796	26.095	193.8	0.465	3.75	58.3	21.9	1.59	20.6	0.00	0.01	0.04	151	
168		9.09	9.07	33.863	26.217	182.5	0.498	3.44	52.9	25.9	1.76	23.2	0.00	0.00	0.04	169	208
198		8.64	8.62	33.956	26.361	169.3	0.551	2.98	45.4	31.5	1.98	26.2	0.00	0.00	0.03	199	207
200	ISL	8.61	8.59	33.960	26.368	168.6	0.555	3.00	45.7	31.7	1.98	26.2	0.00			201	
228		8.09	8.07	33.998	26.477	158.6	0.600	3.38	50.9	34.1	1.89	25.9	0.00			229	206
250	ISL	7.67	7.65	34.001	26.541	152.6	0.635	3.23	48.2	37.6	1.97	27.1	0.00			251	
264		7.41	7.38	33.998	26.576	149.4	0.656	3.13	46.4	40.4	2.06	28.2	0.00			265	205
300	ISL	6.83	6.80	34.004	26.661	141.6	0.708	2.60	38.0	48.4	2.30	31.3	0.00			302	
316		6.60	6.57	34.009	26.696	138.4	0.731	2.32	33.8	52.3	2.42	32.8	0.00			318	204
376		5.90	5.87	34.050	26.819	127.1	0.810	1.41	20.2	67.0	2.79	37.7	0.00			378	203
400	ISL	5.80	5.77	34.087	26.861	123.4	0.840	1.11	15.9	71.2	2.90	38.8	0.00			403	
436		5.74	5.70	34.149	26.917	118.5	0.884	0.75	10.7	76.2	3.03	39.9	0.00			439	202
500	ISL	5.63	5.59	34.235	26.999	111.5	0.957	0.45	6.4	82.4	3.22	41.0	0.00			503	
521		5.59	5.55	34.263	27.027	109.1	0.980	0.35	5.0	84.5	3.28	41.3	0.00			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 9807 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.1 N	122 32.2 W	22/07/98	0721 UTC	3993 m	340 13 kn			1016.5 mb	17.7 C	14.9 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	17.14	17.14	33.095	24.021	388.1	0.000	5.59	101.3	1.5	0.23	0.0	0.00	0.16	0.05	0	
2		17.14	17.14	33.095	24.021	388.1	0.008	5.59	101.3	1.5	0.23	0.0	0.00	0.16	0.05	2	224
10	ISL	17.14	17.14	33.095	24.021	388.4	0.039	5.59	101.3	1.5	0.23	0.0	0.00	0.16	0.05	10	
15		17.14	17.14	33.095	24.021	388.5	0.058	5.77 U	104.6 U	1.5	0.23	0.0	0.00	0.16	0.05	15	223
20	ISL	17.15	17.15	33.101	24.024	388.5	0.078	5.60	101.5	1.5	0.23	0.0	0.00	0.17	0.05	20	
30		17.16	17.16	33.114	24.032	388.0	0.116	5.60	101.6	1.6	0.22	0.0	0.00	0.21	0.06	30	222
44		17.08	17.07	33.161	24.087	383.2	0.170	5.62	101.8	1.7	0.23	0.0	0.00	0.26	0.10	44	221
50	ISL	16.63	16.62	33.218	24.236	369.2	0.193	5.72	102.7	1.8	0.24	0.0	0.00	0.26	0.10	50	
60		15.83	15.82	33.315	24.493	344.9	0.229	5.88	104.0	2.0	0.26	0.0	0.00	0.27	0.09	60	220
73		15.44	15.43	33.345	24.603	334.8	0.273	5.87	103.0	2.0	0.27	0.0	0.00	0.28	0.12	73	219
75	ISL	15.43	15.42	33.362	24.619	333.4	0.280	5.86	102.9	2.0	0.27	0.0	0.00	0.28	0.13	75	
83		15.40	15.39	33.444	24.689	327.0	0.306	5.79	101.6	2.1	0.25	0.0	0.00	0.29	0.18	83	218
93		15.80	15.79	33.746	24.832	313.7	0.338	5.61	99.4	2.4	0.22	0.0	0.02	0.27	0.26	93	217
100	ISL	15.25	15.23	33.681	24.905	306.9	0.360	5.50	96.4	3.0	0.30	0.4	0.16	0.26	0.27	100	
103		14.91	14.89	33.631	24.940	303.6	0.369	5.44	94.6	3.3	0.35	0.8	0.21	0.25	0.27	103	216
113		13.85	13.83	33.623	25.158	283.0	0.398	5.17	88.0	5.0	0.53	3.9	0.05	0.19	0.23	113	215
125		12.35	12.33	33.580	25.423	257.7	0.431	4.87	80.3	8.2	0.81	8.2	0.02	0.11	0.16	126	214
138		11.85	11.83	33.579	25.518	249.0	0.464	4.68	76.4	9.9	0.95	10.3	0.02	0.10	0.17	139	213
150	ISL	11.24	11.22	33.623	25.664	235.2	0.493	4.55	73.3	12.0	1.07	12.4	0.02	0.08	0.13	151	
161		10.68	10.66	33.684	25.811	221.3	0.518	4.45	70.9	14.0	1.17	14.2	0.01	0.06	0.09	162	212
193		9.52	9.50	33.860	26.146	189.9	0.584	4.30	66.8	19.6	1.38	18.3	0.01	0.01	0.04	194	211
200	ISL	9.36	9.34	33.888	26.194	185.5	0.597	4.27	66.1	20.7	1.41	18.9	0.01			201	
227		8.88	8.86	33.962	26.328	173.0	0.645	4.13	63.3	25.0	1.54	21.0	0.01			228	210
250	ISL	8.50	8.47	33.987	26.407	165.8	0.684	3.95	60.0	28.5	1.65	22.7	0.01			251	
267		8.24	8.21	33.996	26.454	161.6	0.712	3.72	56.2	31.5	1.76	24.1	0.01			268	209
300	ISL	7.76	7.73	34.027	26.550	152.8	0.764	2.82	42.1	39.5	2.12	28.3	0.00			302	
316		7.55	7.52	34.040	26.590	149.1	0.788	2.37	35.3	43.5	2.29	30.4	0.00			318	208
377		6.81	6.78	34.068	26.715	137.7	0.875	1.73	25.3	54.5	2.58	34.3	0.00			379	207
400	ISL	6.63	6.59	34.084	26.752	134.4	0.907	1.50	21.8	58.2	2.68	35.4	0.00			402	
438		6.37	6.33	34.114	26.810	129.2	0.957	1.16	16.8	64.1	2.82	37.1	0.00			441	206
500	ISL	5.92	5.88	34.170	26.912	120.0	1.034	0.72	10.3	74.6	3.02	39.5	0.00			503	
517		5.80	5.76	34.186	26.940	117.5	1.054	0.60	8.6	77.5	3.08	40.1	0.00			520	205

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 9.0 N	123 13.2 W	22/07/98	1311 UTC	4230 m	330 12 kn	350 03 06	2	1016.5 mb	17.0 C	14.8 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	17.41	17.41	33.225	24.056	384.7	0.000	5.57	101.6	1.5	0.22	0.0	0.00	0.18	0.06	0	
1		17.41	17.41	33.225	24.056	384.7	0.004	5.57	101.6	1.5	0.22	0.0	0.00	0.18	0.06	1	220
10	ISL	17.42	17.42	33.224	24.054	385.3	0.038	5.58	101.8	1.5	0.22	0.0	0.00	0.19	0.05	10	
14		17.42	17.42	33.224	24.054	385.4	0.054	5.58	101.8	1.5	0.22	0.0	0.00	0.19	0.05	14	219
20	ISL	17.42	17.42	33.225	24.055	385.5	0.077	5.58	101.8	1.5	0.22	0.0	0.00	0.19	0.05	20	
30		17.42	17.42	33.226	24.056	385.7	0.116	5.57	101.6	1.5	0.22	0.0	0.00	0.19	0.05	30	218
44		17.42	17.41	33.224	24.055	386.3	0.170	5.58	101.8	1.5	0.21	0.0	0.00	0.18	0.05	44	217
50	ISL	16.98	16.97	33.291	24.211	371.6	0.192	5.70	103.1	1.6	0.23	0.0	0.00	0.19	0.06	50	
60		16.11	16.10	33.403	24.498	344.6	0.228	5.89	104.8	1.8	0.26	0.0	0.00	0.22	0.08	60	216
74		15.39	15.38	33.387	24.647	330.7	0.275	5.86	102.8	1.9	0.27	0.0	0.00	0.24	0.10	74	215
75	ISL	15.37	15.36	33.398	24.660	329.5	0.279	5.85	102.6	1.9	0.27	0.0	0.00	0.25	0.11	75	
84		15.25	15.24	33.528	24.786	317.7	0.308	5.73	100.3	2.1	0.26	0.0	0.00	0.29	0.20	84	214
95		15.08	15.07	33.681	24.942	303.3	0.342	5.66	98.8	2.4	0.24	0.0	0.00	0.26	0.25	95	213
100	ISL	14.82	14.81	33.699	25.012	296.7	0.357	5.56	96.6	2.9	0.28	0.4	0.13	0.26	0.25	100	
105		14.48	14.46	33.696	25.083	290.0	0.372	5.44	93.9	3.5	0.35	1.1	0.25	0.25	0.25	105	212
115		13.67	13.65	33.653	25.218	277.3	0.400	5.22	88.5	4.9	0.53	3.8	0.11	0.20	0.22	115	211
124		12.88	12.86	33.640	25.367	263.2	0.424	5.03	83.9	6.4	0.68	6.2	0.04	0.18	0.21	125	210
125	ISL	12.82	12.80	33.639	25.378	262.2	0.427	5.02	83.7	6.5	0.69	6.4	0.04	0.18	0.21	126	
140		12.00	11.98	33.629	25.528	248.1	0.465	4.85	79.4	8.5	0.85	8.9	0.02	0.11	0.17	141	209
150	ISL	11.33	11.31	33.625	25.649	236.6	0.490	4.57	73.8	11.4	1.05	12.0	0.01	0.08	0.14	151	
164		10.46	10.44	33.637	25.813	221.2	0.522	4.15	65.7	15.7	1.34	16.3	0.01	0.06	0.10	165	208
193		9.64	9.62	33.741	26.033	200.6	0.583	3.79	59.0	20.8	1.58	20.1	0.00	0.01	0.04	194	207
200	ISL	9.47	9.45	33.780	26.091	195.2	0.597	3.75	58.2	22.0	1.61	20.7	0.00			201	
229		8.83	8.81	33.933	26.314	174.4	0.650	3.58	54.8	27.2	1.75	23.2	0.00			230	206
250	ISL	8.38	8.35	33.981	26.421	164.4	0.686	3.24	49.1	32.0	1.92	25.6	0.00			251	
270		7.99	7.96	34.002	26.496	157.5	0.718	2.91	43.7	36.5	2.08	27.7	0.00			271	205
300	ISL	7.58	7.55	34.019	26.569	150.8	0.764	2.68	39.9	41.1	2.21	29.4	0.00			302	
318		7.36	7.33	34.019	26.600	148.0	0.791	2.61	38.6	43.5	2.26	30.1	0.00			320	204
377		6.45	6.42	33.984	26.697	139.1	0.876	2.58	37.4	52.0	2.37	32.2	0.00			379	203
400	ISL	6.24	6.20	34.005	26.741	135.1	0.907	2.19	31.6	57.0	2.52	34.0	0.00			402	
437		5.99	5.95	34.053	26.811	128.8	0.956	1.47	21.1	65.4	2.77	37.1	0.00			440	202
500	ISL	5.68	5.64	34.119	26.902	120.7	1.035	0.92	13.1	75.6	2.99	39.6	0.00			503	
517		5.59	5.55	34.137	26.927	118.4	1.055	0.77	10.9	78.4	3.05	40.3	0.00			520	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 49.3 N	123 54.5 W	22/07/98	1911 UTC	4431 m	340 09 kn	340 02 04	2	1018.4 mb	18.0 C	16.1 C	27m	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	17.85	17.85	33.461	24.131	377.5	0.000	5.53	101.9	1.9	0.24	0.0	0.00	0.13	0.04	0	
2	A	17.85	17.85	33.461	24.131	377.6	0.008	5.53	101.9	1.9	0.24	0.0	0.00	0.13	0.04	2	222
2		17.84	17.84	33.463	24.135	377.2	0.008									2	223
2		17.84	17.84	33.472	24.142	376.6	0.008									2	224
10	ISL	17.83	17.83	33.461	24.136	377.4	0.038	5.53	101.8	1.9	0.24	0.0	0.00	0.13	0.03	10	
11		17.83	17.83	33.461	24.137	377.4	0.041	5.53	101.8	1.9	0.24	0.0	0.00	0.13	0.03	11	221
20	ISL	17.83	17.83	33.461	24.137	377.7	0.075	5.54	102.0	2.0	0.25	0.0	0.00	0.14	0.03	20	
21	A	17.83	17.83	33.461	24.137	377.7	0.079	5.54	102.0	2.0	0.25	0.0	0.00	0.14	0.03	21	220
30	ISL	17.83	17.82	33.462	24.138	377.9	0.113	5.53	101.8	2.0	0.24	0.0	0.00	0.14	0.03	30	
38	A	17.83	17.82	33.463	24.139	378.1	0.143	5.52	101.6	2.0	0.24	0.0	0.00	0.14	0.03	38	219
48		17.39	17.38	33.477	24.256	367.3	0.181	5.60	102.2	1.9	0.22	0.0	0.00	0.19	0.04	48	218
50	ISL	17.16	17.15	33.465	24.302	363.0	0.188	5.65	102.7	1.9	0.22	0.0	0.00	0.19	0.04	50	
58	A	16.19	16.18	33.414	24.488	345.4	0.216	5.86	104.5	2.0	0.24	0.0	0.00	0.19	0.05	58	217
74	A	15.40	15.39	33.414	24.665	328.9	0.270	5.83	102.3	2.1	0.27	0.0	0.00	0.23	0.10	74	216
75	ISL	15.35	15.34	33.410	24.673	328.2	0.274	5.83	102.2	2.1	0.27	0.0	0.00	0.23	0.10	75	
83		15.08	15.07	33.413	24.735	322.6	0.300	5.85	102.0	2.3	0.25	0.0	0.00	0.24	0.11	83	215
92		15.15	15.14	33.569	24.840	312.8	0.328	5.75	100.5	2.5	0.24	0.0	0.00	0.28	0.20	92	214
100	ISL	15.23	15.21	33.706	24.928	304.7	0.353	5.66	99.1	2.7	0.23	0.1	0.01	0.31	0.28	100	
101	A	15.24	15.22	33.730	24.945	303.2	0.356	5.64	98.8	2.7	0.23	0.1	0.01	0.31	0.29	101	213
106		14.57	14.55	33.718	25.080	290.3	0.371	5.45	94.2	3.5	0.33	1.2	0.20	0.30	0.29	106	212
114		13.89	13.87	33.673	25.189	280.1	0.394	5.31	90.5	4.5	0.46	2.9	0.15	0.24	0.26	114	211
123		12.70	12.68	33.607	25.377	262.2	0.418	5.09	84.6	6.7	0.67	6.2	0.03	0.19	0.19	124	210
125	ISL	12.52	12.50	33.608	25.412	258.8	0.423	5.05	83.6	7.2	0.71	6.8	0.03	0.18	0.18	126	
138		11.61	11.59	33.657	25.623	239.0	0.456	4.78	77.6	10.0	0.93	10.2	0.01	0.10	0.13	139	209
150	ISL	10.91	10.89	33.697	25.781	224.1	0.483	4.59	73.5	12.6	1.10	13.0	0.01	0.06	0.09	151	
164		10.23	10.21	33.742	25.934	209.6	0.514	4.37	68.9	15.9	1.28	16.1	0.01	0.04	0.06	165	208
193		9.13	9.11	33.838	26.191	185.4	0.571	3.69	56.8	24.5	1.68	22.2	0.00	0.01	0.04	194	207
200	ISL	8.96	8.94	33.861	26.236	181.2	0.584	3.57	54.8	26.0	1.74	23.1	0.00			201	
228		8.48	8.46	33.938	26.371	168.8	0.633	3.21	48.8	31.2	1.93	25.7	0.00			229	206
250	ISL	8.16	8.13	33.981	26.454	161.2	0.669	2.99	45.1	34.8	2.05	27.4	0.00			251	
267		7.94	7.91	34.005	26.505	156.5	0.696	2.82	42.3	37.6	2.13	28.5	0.00			268	205
300	ISL	7.52	7.49	34.037	26.592	148.7	0.747	2.41	35.8	43.6	2.31	30.7	0.00			302	
317		7.33	7.30	34.050	26.629	145.3	0.771	2.19	32.4	46.7	2.40	31.7	0.00			319	204
377		6.85	6.81	34.105	26.739	135.5	0.856	1.47	21.5	56.7	2.69	35.1	0.00			379	203
400	ISL	6.46	6.42	34.088	26.778	131.8	0.886	1.38	20.0	61.5	2.76	36.4	0.00			402	
434		5.91	5.87	34.066	26.831	126.8	0.930	1.30	18.6	68.4	2.84	38.1	0.00			437	202
500	ISL	5.72	5.68	34.146	26.918	119.2	1.012	0.81	11.5	76.7	3.03	39.9	0.00			503	
517		5.67	5.63	34.166	26.940	117.3	1.032	0.69	9.8	78.9	3.08	40.4	0.00			520	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 18.0 N	120 2.2 W	21/07/98	0716 UTC	566 m	250 02 kn			1015.1 mb	19.6 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	18.95	18.95	33.367	23.787	410.3	0.000	5.79	108.9	2.1	0.23	0.0	0.00	0.56	0.22	0	
1	A	18.95	18.95	33.367	23.787	410.4	0.004	5.79	108.9	2.1	0.23	0.0	0.00	0.56	0.22	1	224
9		18.71	18.71	33.367	23.848	404.9	0.037	5.83	109.1	2.2	0.23	0.0	0.00	0.60	0.29	9	223
10	ISL	18.55	18.55	33.366	23.887	401.2	0.041	5.85	109.1	2.3	0.23	0.0	0.00	0.62	0.30	10	
18		17.28	17.28	33.366	24.196	372.0	0.072	6.04	110.0	2.7	0.27	0.0	0.01	0.83	0.41	18	222
20	ISL	17.25	17.25	33.367	24.204	371.3	0.079	6.04	109.9	2.7	0.27	0.0	0.01	0.88	0.42	20	
29		17.12	17.12	33.372	24.239	368.2	0.112	6.06	110.0	2.8	0.27	0.0	0.01	1.12	0.48	29	221
30	ISL	17.05	17.05	33.374	24.257	366.6	0.116	6.07	110.0	2.8	0.27	0.0	0.01	1.04	0.45	30	
38		16.31	16.30	33.381	24.434	349.9	0.145	6.13	109.5	3.1	0.29	0.0	0.00	0.47	0.28	38	220
49		14.85	14.84	33.349	24.734	321.6	0.182	6.15	106.7	4.6	0.34	0.2	0.02	1.42	0.71	49	219
50	ISL	14.66	14.65	33.358	24.782	317.0	0.185	6.02	104.0	5.1	0.39	0.9	0.05	1.40	0.71	50	
59		12.96	12.95	33.477	25.223	275.1	0.211	4.73	79.0	9.9	0.89	8.1	0.28	0.93	0.69	59	218
69		11.78	11.77	33.599	25.544	244.7	0.237	3.99	65.0	14.9	1.27	14.3	0.08	0.50	0.39	69	217
75	ISL	11.45	11.44	33.642	25.639	235.8	0.252	3.75	60.7	16.6	1.38	16.0	0.06	0.35	0.31	75	
84		11.13	11.12	33.696	25.739	226.5	0.273	3.47	55.8	18.7	1.51	17.8	0.03	0.21	0.25	84	216
99		10.26	10.25	33.840	26.004	201.5	0.305	2.82	44.5	24.5	1.83	22.5	0.02	0.06	0.13	99	215
100	ISL	10.22	10.21	33.849	26.018	200.2	0.307	2.79	44.0	24.9	1.85	22.7	0.02	0.06	0.13	100	
119		9.65	9.64	33.990	26.224	180.9	0.343	2.30	35.9	30.2	2.09	25.8	0.01	0.02	0.09	120	214
125	ISL	9.58	9.57	34.010	26.252	178.5	0.354	2.23	34.7	31.0	2.12	26.2	0.01	0.02	0.09	126	
140		9.49	9.47	34.037	26.288	175.3	0.380	2.12	33.0	32.1	2.17	26.8	0.02	0.01	0.09	141	213
150	ISL	9.42	9.40	34.054	26.313	173.1	0.398	2.06	32.0	33.0	2.20	27.1	0.04	0.01	0.08	151	
170		9.30	9.28	34.082	26.354	169.6	0.432	1.92	29.7	34.6	2.25	27.8	0.06	0.02	0.08	171	212
200		9.24	9.22	34.123	26.397	166.2	0.482	1.61	24.9	36.8	2.36	29.1	0.01	0.00	0.12	201	211
229		9.07	9.05	34.139	26.437	162.9	0.530	1.68	25.9	37.8	2.37	29.1	0.01			230	210
250	ISL	8.92	8.89	34.158	26.476	159.5	0.564	1.52	23.3	40.3	2.45	29.8	0.00			251	
269		8.75	8.72	34.173	26.515	156.2	0.594	1.33	20.4	43.2	2.53	30.7	0.00			271	209
300	ISL	8.31	8.28	34.176	26.585	149.8	0.641	1.20	18.2	48.2	2.62	32.0	0.01			302	
317		8.06	8.03	34.176	26.623	146.4	0.667	1.15	17.3	50.9	2.67	32.6	0.01			319	208
378		7.47	7.43	34.190	26.720	137.8	0.753	0.92	13.7	59.0	2.83	34.1	0.01			380	207
400	ISL	7.21	7.17	34.193	26.760	134.3	0.783	0.80	11.8	63.5	2.91	34.6	0.01			403	
435		6.82	6.78	34.200	26.819	128.9	0.829	0.60	8.8	71.1	3.04	35.0	0.01			438	206
500	ISL	6.49	6.44	34.219	26.879	123.9	0.911	0.36	5.2	82.2	3.20	33.5	0.01			503	
510		6.45	6.40	34.221	26.885	123.3	0.924	0.33	4.8	83.6	3.22	33.4	0.01			514	205
530		6.32	6.27	34.223	26.904	121.7	0.948	0.27	3.9	85.8	3.28	33.9	0.01			534	204
552		6.26	6.21	34.223	26.912	121.2	0.975	0.22	3.2	88.5	3.34	33.6	0.01			556	203
557		6.25	6.20	34.225	26.915	121.0	0.981	0.19	2.7	89.4	3.36	33.4	0.01			561	202
562		6.24	6.19	34.225	26.916	120.9	0.987	0.19	2.7	90.1	3.38	33.3	0.02			566	201

A) SANTA BARBARA BASIN STATION.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 13.4 N	119 24.7 W	21/07/98	0135	UTC	36 m	150	06 kn	120 01 07	1	1013.9 mb	20.6 C	19.1 C	11m	3/8	AS

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	33.448	23.448	442.7	0.000	5.98	115.8	1.5	0.11	0.0	0.00	0.71	0.07	0	
1	20.50	20.50	33.448	23.448	442.7	0.004	5.98	115.8	1.5	0.11	0.0	0.00	0.71	0.07	1	205
5	20.25	20.25	33.464	23.526	435.4	0.022	6.14	118.3	1.7	0.09	0.0	0.01	0.90	0.08	5	204
10	19.24	19.24	33.422	23.756	413.7	0.043	6.40	121.0	2.3	0.13	0.0	0.00	1.30	0.25	10	203
20	16.56	16.56	33.321	24.330	359.2	0.082	6.21	111.5	3.7	0.27	0.1	0.02	1.74	0.51	20	202
30 ISL	13.94	13.94	33.417	24.978	297.7	0.115	5.32	90.6	7.4	0.66	3.6	0.32	0.70	0.52	30	
31	13.68	13.68	33.431	25.042	291.6	0.118	5.23	88.6	7.8	0.70	3.9	0.35	0.60	0.52	31	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 10.7 N	119 30.6 W	20/07/98	2333	UTC	145 m	130	05 kn	140 01 06	1	1014.6 mb	21.8 C	19.9 C	22m	4/8	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	19.94	19.94	33.376	23.540	433.9	0.000	5.59	107.1	2.4	0.25	0.0	0.00	0.21	0.05	0	
1	19.95	19.95	33.376	23.538	434.2	0.004									1	213
1	19.94	19.94	33.376	23.540	433.9	0.004									1	212
1	19.94	19.94	33.376	23.540	433.9	0.004	5.59	107.1	2.4	0.25	0.0	0.00	0.21	0.05	1	211
10 ISL	18.88	18.88	33.354	23.795	409.9	0.042	5.80	108.9	2.5	0.25	0.0	0.00	0.27	0.09	10	
15	17.95	17.95	33.340	24.015	389.2	0.062	5.97	110.1	2.6	0.25	0.0	0.00	0.31	0.12	15	210
20 ISL	17.20	17.20	33.325	24.184	373.2	0.081	6.10	110.9	2.7	0.26	0.0	0.00	0.41	0.13	20	
30	15.72	15.72	33.301	24.506	342.8	0.117	6.23	110.0	3.2	0.29	0.0	0.00	0.67	0.21	30	209
45	13.69	13.68	33.291	24.932	302.5	0.166	5.79	98.1	4.4	0.50	1.9	0.08	1.12	0.56	45	208
50 ISL	13.24	13.23	33.374	25.088	287.8	0.180	5.33	89.5	6.2	0.66	4.4	0.15	0.92	0.62	50	
55	12.84	12.83	33.466	25.238	273.6	0.194	4.84	80.6	8.4	0.85	7.5	0.18	0.65	0.67	55	207
63	12.11	12.10	33.556	25.449	253.7	0.215	4.25	69.7	11.9	1.14	12.4	0.05	0.29	0.37	63	206
75	10.80	10.79	33.682	25.787	221.7	0.244	3.58	57.2	18.1	1.51	18.2	0.02	0.08	0.16	75	205
84	10.47	10.46	33.738	25.888	212.2	0.263	3.34	53.0	20.6	1.62	19.9	0.02	0.05	0.12	84	204
95	10.10	10.09	33.812	26.010	200.9	0.286	3.09	48.6	23.4	1.76	21.7	0.02	0.03	0.07	95	203
100 ISL	10.08	10.07	33.817	26.017	200.3	0.296	3.07	48.3	23.6	1.77	21.9	0.02	0.03	0.07	100	
111	10.03	10.02	33.827	26.034	198.9	0.318	3.03	47.6	24.1	1.79	22.2	0.02	0.02	0.08	112	202
125	10.00	9.99	33.839	26.048	197.9	0.346	2.99	47.0	24.5	1.81	22.4	0.02	0.02	0.07	126	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 53.2 N	120 8.9 W	20/07/98	1825	UTC	90 m	120	04 kn	150 02 07	1	1016.1 mb	20.2 C	18.7 C	20m	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	18.59	18.59	33.388	23.893	400.2	0.000	5.66	105.7	2.7	0.27	0.0	0.00	0.22	0.06	0	
1 A	18.59	18.59	33.388	23.894	400.2	0.004	5.66	105.7	2.7	0.27	0.0	0.00	0.22	0.06	1	211
1	18.57	18.57	33.384	23.895	400.0	0.004									1	212
1	18.53	18.53	33.385	23.906	399.0	0.004									1	213
8	18.29	18.29	33.364	23.950	395.1	0.032	5.73	106.4	2.7	0.27	0.0	0.00	0.30	0.08	8	210
10 ISL	18.22	18.22	33.358	23.962	394.0	0.040	5.74	106.4	2.7	0.27	0.0	0.00	0.34	0.11	10	
15 A	18.06	18.06	33.344	23.991	391.4	0.059	5.76	106.5	2.7	0.28	0.1	0.01	0.44	0.17	15	209
20 ISL	15.61	15.61	33.363	24.578	335.6	0.077	5.59	98.5	5.1	0.50	2.6	0.05	1.09	0.45	20	
21	15.10	15.10	33.376	24.700	324.0	0.081	5.55	96.8	5.6	0.55	3.1	0.06	1.20	0.50	21	208
27 A	14.29	14.29	33.394	24.887	306.3	0.100	5.42	93.0	6.6	0.63	4.3	0.08	0.99	0.42	27	207
30 ISL	13.88	13.88	33.415	24.989	296.7	0.109	5.26	89.5	7.5	0.71	5.5	0.09	0.91	0.42	30	
37	13.20	13.19	33.460	25.162	280.4	0.129	4.92	82.6	9.4	0.86	7.8	0.11	0.78	0.41	37	206
43 A	13.17	13.16	33.463	25.170	279.7	0.146	4.91	82.4	9.5	0.87	8.0	0.11	0.73	0.41	43	205
50 ISL	12.88	12.87	33.482	25.243	273.0	0.165	4.79	79.9	10.3	0.93	9.0	0.12	0.69	0.41	50	
55 A	12.61	12.60	33.500	25.309	266.8	0.179	4.67	77.4	11.1	0.99	9.9	0.12	0.65	0.41	55	204
66	12.12	12.11	33.535	25.431	255.5	0.207	4.40	72.2	12.4	1.12	11.8	0.12	0.45	0.35	66	203
75 ISL	11.88	11.87	33.561	25.496	249.4	0.230	4.25	69.4	13.3	1.19	13.0	0.11	0.39	0.35	75	
77 A	11.83	11.82	33.567	25.510	248.2	0.235	4.22	68.8	13.6	1.21	13.3	0.11	0.38	0.35	77	202
86	11.55	11.54	33.604	25.591	240.6	0.257	4.04	65.5	15.3	1.30	14.7	0.11	0.33	0.34	86	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 45.2 N	120 24.8 W	20/07/98	1318 UTC	1007 m	130	06 kn	130 05 07	2	1014.2 mb	17.3 C	16.2 C	14m	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	17.93	17.93	33.471	24.119	378.7	0.000	5.83	107.6	1.2	0.23	0.0	0.00	0.43	0.09	0	221
10	15.49	15.49	33.582	24.772	316.8	0.035	6.43	113.2	0.8	0.30	0.1	0.02	1.69	0.47	10	220
20	14.53	14.53	33.586	24.984	296.9	0.065	5.63	97.2	3.8	0.58	3.8	0.18	5.23	1.61	20	219
30	11.76	11.76	33.662	25.596	238.8	0.092	4.13	67.3	15.2	1.23	13.3	0.40	0.97	0.68	30	217
40	10.94	10.94	33.718	25.789	220.7	0.115	3.49	55.9	19.5	1.55	18.5	0.16	0.29	0.38	40	216
50	10.00	9.99	33.790	26.009	200.0	0.136	3.19	50.1	23.1	1.74	21.7	0.02	0.06	0.18	50	215
60	9.95	9.94	33.823	26.043	196.9	0.156	3.04	47.7	24.1	1.79	22.4	0.02	0.05	0.12	60	214
70	9.79	9.78	33.889	26.121	189.7	0.175	2.77	43.3	26.5	1.91	23.8	0.03	0.03	0.15	70	213
75 ISL	9.71	9.70	33.903	26.146	187.5	0.185	2.76	43.1	27.1	1.93	24.1	0.03	0.03	0.13	75	
85	9.54	9.53	33.919	26.186	183.8	0.203	2.73	42.5	28.0	1.96	24.6	0.02	0.03	0.09	85	212
99	9.34	9.33	33.959	26.250	177.9	0.229	2.58	40.0	30.0	2.03	25.5	0.03	0.02	0.07	100	211
100 ISL	9.33	9.32	33.963	26.255	177.5	0.231	2.56	39.6	30.1	2.04	25.6	0.03	0.02	0.07	101	
119	9.25	9.24	34.028	26.319	171.8	0.264	2.27	35.1	32.5	2.15	26.8	0.04	0.02	0.06	120	210
125 ISL	9.22	9.21	34.045	26.338	170.2	0.274	2.19	33.8	33.2	2.18	27.1	0.03	0.01	0.07	126	
139	9.16	9.14	34.076	26.372	167.3	0.298	2.06	31.8	34.5	2.23	27.7	0.02	0.00	0.10	140	209
150 ISL	9.14	9.12	34.083	26.381	166.6	0.316	2.04	31.5	34.8	2.24	27.8	0.02	0.01	0.09	151	
169	9.07	9.05	34.091	26.398	165.3	0.347	2.01	31.0	35.5	2.26	28.1	0.02	0.02	0.06	170	208
200	8.66	8.64	34.146	26.506	155.5	0.397	1.74	26.6	40.3	2.40	29.7	0.02	0.01	0.05	201	207
228	8.40	8.38	34.179	26.573	149.7	0.440	1.55	23.5	43.6	2.49	30.8	0.01			229	206
250 ISL	8.24	8.21	34.192	26.608	146.7	0.473	1.45	21.9	45.7	2.55	31.4	0.01			252	
267	8.13	8.10	34.197	26.628	145.0	0.497	1.39	21.0	47.0	2.58	31.8	0.01			269	205
300 ISL	7.99	7.96	34.203	26.654	143.1	0.545	1.31	19.7	48.9	2.62	32.4	0.01			302	
318	7.91	7.88	34.207	26.669	141.9	0.571	1.25	18.8	50.2	2.65	32.7	0.01			320	204
378	7.39	7.35	34.252	26.781	132.1	0.653	0.82	12.2	59.2	2.86	35.0	0.01			381	203
400 ISL	7.27	7.23	34.264	26.807	129.9	0.682	0.72	10.7	61.4	2.91	35.6	0.01			403	
439	7.10	7.06	34.280	26.844	126.9	0.732	0.60	8.8	64.4	2.97	36.3	0.01			442	202
500 ISL	6.92	6.87	34.287	26.875	124.7	0.808	0.54	7.9	67.2	3.02	36.9	0.01			504	
517	6.87	6.82	34.289	26.883	124.2	0.830	0.52	7.6	68.0	3.03	37.1	0.01			521	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 34.8 N	120 45.3 W	20/07/98	0910 UTC	1364 m	340	03 kn			1014.3 mb	17.1 C	16.3 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	16.48	16.48	33.544	24.519	340.6	0.000	5.98	107.3	0.8	0.35	0.1	0.00	0.29	0.08	0	220
10	15.95	15.95	33.545	24.641	329.3	0.033	6.00	106.5	1.6	0.36	0.1	0.02	0.56	0.25	10	219
20	13.91	13.91	33.479	25.032	292.3	0.065	5.82	99.1	3.9	0.61	2.9	0.09	0.82 A	0.42 A	20	218
30 ISL	13.36	13.36	33.548	25.198	276.8	0.093	5.38	90.6	7.6	0.84	5.7	0.24	1.02	0.60	30	
31	13.33	13.33	33.556	25.210	275.7	0.096	5.32	89.6	8.0	0.87	6.1	0.26	1.04	0.61	31	217
40	12.22	12.21	33.581	25.447	253.3	0.120	4.75	78.2	12.9	1.22	11.5	0.46	0.47	0.49	40	216
50	12.00	11.99	33.639	25.534	245.3	0.145	4.35	71.3	14.9	1.35	14.0	0.54	0.32	0.53	50	215
60	11.46	11.45	33.681	25.667	232.8	0.168	3.66	59.3	17.8	1.49	17.5	0.18	0.23	0.47	60	214
70	10.46	10.45	33.791	25.931	207.8	0.190	3.00	47.6	22.6	1.76	21.8	0.04	0.11	0.32	70	212
75 ISL	10.21	10.20	33.819	25.996	201.7	0.201	2.94	46.4	23.9	1.82	22.7	0.04	0.08	0.31	75	
85	9.97	9.96	33.846	26.058	196.1	0.221	2.81	44.1	25.3	1.88	23.5	0.04	0.06	0.29	85	213
99	9.76	9.75	33.868	26.110	191.3	0.248	2.75	43.0	26.6	1.92	24.2	0.05	0.04	0.22	100	211
100 ISL	9.74	9.73	33.871	26.116	190.8	0.250	2.74	42.8	26.7	1.92	24.3	0.05	0.04	0.22	101	
119	9.40	9.39	33.928	26.217	181.6	0.285	2.61	40.5	29.2	2.01	25.5	0.06	0.04	0.23	120	210
125 ISL	9.35	9.34	33.944	26.238	179.7	0.296	2.56	39.7	29.8	2.03	25.7	0.06	0.03	0.21	126	
140	9.22	9.20	33.977	26.285	175.5	0.322	2.48	38.3	31.1	2.07	26.3	0.05	0.02	0.17	141	209
150 ISL	8.99	8.97	33.989	26.331	171.3	0.340	2.51	38.6	32.2	2.08	26.8	0.04	0.02	0.18	151	
169	8.49	8.47	34.004	26.421	163.0	0.372	2.60	39.5	34.7	2.11	27.7	0.02	0.02	0.21	170	208
199	7.87	7.85	34.026	26.531	152.8	0.419	2.51	37.6	39.6	2.21	29.3	0.03	0.02	0.16	200	207
200 ISL	7.87	7.85	34.029	26.534	152.6	0.420	2.49	37.3	40.1	2.22	29.4	0.03			201	
228	7.94	7.92	34.118	26.594	147.5	0.462	1.81	27.2	52.4	2.57	33.3	0.01			229	206
250 ISL	7.58	7.56	34.120	26.648	142.5	0.494	1.74	25.9	52.3	2.57	33.4	0.01			252	
269	7.19	7.16	34.106	26.692	138.4	0.521	1.68	24.8	52.3	2.57	33.4	0.01			271	205
300 ISL	6.88	6.85	34.104	26.733	134.8	0.563	1.54	22.6	55.6	2.64	34.4	0.01			302	
318	6.74	6.71	34.107	26.755	133.0	0.588	1.43	20.9	58.4	2.70	35.2	0.01			320	204
378	6.22	6.19	34.165	26.869	122.7	0.664	0.86	12.4	69.7	2.95	38.2	0.01			380	203
400 ISL	6.05	6.02	34.172	26.897	120.2	0.691	0.75	10.8	72.8	3.01	39.1	0.01			403	
438	5.78	5.74	34.184	26.940	116.4	0.736	0.63	9.0	77.5	3.08	40.3	0.01			441	202
500 ISL	5.47	5.43	34.242	27.024	108.9	0.806	0.45	6.4	85.4	3.19	41.4	0.01			504	
517	5.39	5.35	34.258	27.047	107.0	0.824	0.40	5.7	87.6	3.22	41.7	0.01			521	201

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

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 14.9 N	121 27.7 W	20/07/98	0240	UTC	3811 m	340	11 kn	340 04 08	2	1013.2 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	15.36	15.36	32.969	24.329	358.7	0.000	5.91	103.4	2.4	0.31	0.0	0.00	0.22	0.07	0	
1		15.36	15.36	32.972	24.331	358.5	0.004									1	223
1		15.36	15.36	32.969	24.329	358.7	0.004	5.91	103.4	2.4	0.31	0.0	0.00	0.22	0.07	1	222
1		15.36	15.36	32.969	24.329	358.7	0.004									1	224
10	ISL	15.35	15.35	32.970	24.332	358.7	0.036	5.91	103.3	2.4	0.31	0.0	0.00	0.20	0.06	10	
11		15.35	15.35	32.970	24.332	358.7	0.039	5.91	103.3	2.4	0.31	0.0	0.00	0.20	0.06	11	221
20		15.28	15.28	32.971	24.349	357.4	0.072	5.93	103.5	2.4	0.32	0.0	0.00	0.21	0.07	20	220
30	ISL	14.98	14.98	32.991	24.430	350.0	0.107	5.98	103.8	2.5	0.33	0.0	0.00	0.32	0.12	30	
31		14.95	14.95	32.993	24.438	349.2	0.111	5.98	103.7	2.5	0.33	0.0	0.00	0.33	0.13	31	219
41		14.88	14.87	33.011	24.467	346.8	0.145	5.98	103.6	2.4	0.33	0.0	0.00	0.36	0.16	41	218
49		14.60	14.59	33.122	24.612	333.1	0.173	5.95	102.6	2.1	0.31	0.0	0.00	0.39	0.22	49	217
50	ISL	14.56	14.55	33.121	24.620	332.4	0.176	5.95	102.5	2.1	0.31	0.0	0.00	0.39	0.23	50	
59		14.22	14.21	33.113	24.686	326.4	0.206	5.93	101.4	2.3	0.31	0.0	0.02	0.43	0.30	59	216
69		13.94	13.93	33.270	24.866	309.5	0.237	5.55	94.5	3.4	0.43	1.3	0.16	0.50	0.47	69	215
75	ISL	13.72	13.71	33.318	24.948	301.8	0.256	5.40	91.5	4.2	0.51	2.4	0.13	0.48	0.50	75	
80		13.44	13.43	33.349	25.029	294.2	0.271	5.26	88.6	5.2	0.59	3.8	0.11	0.46	0.52	80	214
89		12.54	12.53	33.436	25.274	271.0	0.296	4.88	80.8	7.9	0.83	7.8	0.05	0.28	0.44	89	213
98		11.44	11.43	33.528	25.553	244.6	0.319	4.59	74.2	11.4	1.06	11.9	0.02	0.17	0.25	98	212
100	ISL	11.25	11.24	33.551	25.605	239.6	0.324	4.55	73.3	12.1	1.09	12.6	0.02	0.15	0.24	100	
108		10.68	10.67	33.628	25.766	224.4	0.343	4.43	70.5	14.3	1.20	14.6	0.02	0.10	0.21	108	211
118		10.32	10.31	33.656	25.851	216.5	0.365	4.24	67.0	16.4	1.33	16.5	0.01	0.08	0.18	119	210
125	ISL	10.10	10.09	33.689	25.914	210.6	0.380	4.02	63.2	18.4	1.44	18.1	0.01	0.09	0.18	126	
139		9.75	9.73	33.778	26.043	198.6	0.408	3.48	54.3	22.8	1.66	21.3	0.01	0.12	0.19	140	209
150	ISL	9.56	9.54	33.878	26.152	188.4	0.430	2.98	46.4	26.7	1.86	23.7	0.01	0.11	0.21	151	
168		9.34	9.32	34.030	26.307	174.0	0.462	2.26	35.0	32.3	2.13	26.8	0.01	0.08	0.23	169	208
197		9.13	9.11	34.107	26.402	165.6	0.511	1.92	29.6	36.0	2.29	28.4	0.01	0.06	0.19	198	207
200	ISL	9.11	9.09	34.113	26.410	164.9	0.516	1.89	29.1	36.3	2.30	28.5	0.01			201	
229		8.83	8.81	34.155	26.488	158.0	0.563	1.70	26.1	39.6	2.39	29.7	0.01			230	206
250	ISL	8.58	8.55	34.168	26.537	153.6	0.596	1.61	24.5	42.0	2.44	30.4	0.01			251	
268		8.35	8.32	34.173	26.576	150.1	0.623	1.55	23.5	44.1	2.49	31.0	0.01			270	205
300	ISL	7.97	7.94	34.182	26.641	144.4	0.670	1.41	21.2	48.5	2.59	32.2	0.00			302	
320		7.74	7.71	34.188	26.679	140.9	0.699	1.31	19.6	51.4	2.65	33.0	0.00			322	204
379		7.19	7.15	34.225	26.787	131.3	0.779	0.93	13.7	59.9	2.84	35.3	0.01			381	203
400	ISL	6.99	6.95	34.234	26.822	128.2	0.806	0.82	12.1	63.0	2.90	36.1	0.01			403	
437		6.66	6.62	34.246	26.877	123.3	0.853	0.65	9.5	68.4	2.99	37.4	0.00			440	202
500	ISL	6.18	6.14	34.262	26.952	116.6	0.928	0.51	7.4	76.1	3.09	39.1	0.00			503	
516		6.06	6.01	34.266	26.971	114.9	0.947	0.48	6.9	78.0	3.12	39.5	0.00			520	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.5 N	122 8.4 W	19/07/98	1906	UTC	4185 m	350	16 kn	350 05 05	2	1014.7 mb	17.5 C	16.3 C	22m	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	17.19	17.19	33.155	24.055	384.8	0.000	5.62	102.0	1.7	0.21	0.0	0.00	0.17	0.06	0	
1	A	17.19	17.19	33.155	24.055	384.8	0.004	5.62	102.0	1.7	0.21	0.0	0.00	0.17	0.06	1	221
2		17.19	17.19	33.154	24.054	385.0	0.008									2	223
2		17.19	17.19	33.156	24.056	384.8	0.008									2	222
10	ISL	17.20	17.20	33.155	24.053	385.3	0.039	5.62	102.0	1.7	0.21	0.0	0.00	0.16	0.05	10	
18	A	17.20	17.20	33.154	24.052	385.7	0.069	5.61	101.9	1.7	0.22	0.0	0.00	0.16	0.04	18	220
20	ISL	17.20	17.20	33.154	24.052	385.7	0.077	5.61	101.9	1.7	0.22	0.0	0.00	0.16	0.04	20	
30	ISL	17.18	17.18	33.154	24.058	385.6	0.116	5.61	101.8	1.7	0.22	0.0	0.00	0.17	0.04	30	
32	A	17.18	17.17	33.154	24.058	385.6	0.123	5.61	101.8	1.7	0.22	0.0	0.00	0.17	0.04	32	219
47	A	16.08	16.07	33.254	24.389	354.4	0.179	5.85	104.0	1.9	0.26	0.0	0.00	0.21	0.07	47	218
50	ISL	15.88	15.87	33.261	24.440	349.7	0.189	5.88	104.1	1.9	0.26	0.0	0.00	0.22	0.07	50	
60	A	15.35	15.34	33.273	24.567	337.8	0.224	5.93	103.9					0.23	0.09	60	217
72		15.06	15.05	33.294	24.647	330.6	0.264	5.86	102.1	2.1	0.28	0.0	0.00	0.22	0.12	72	216
75	ISL	15.06	15.05	33.323	24.670	328.5	0.274	5.84	101.7	2.1	0.28	0.0	0.00	0.23	0.14	75	
83	A	15.05	15.04	33.396	24.728	323.2	0.300	5.78	100.7	2.2	0.27	0.0	0.00	0.25	0.21	83	215
88		14.95	14.94	33.411	24.762	320.1	0.316	5.76	100.2	2.3	0.27	0.0	0.01	0.25	0.25	88	214
95		14.96	14.95	33.534	24.854	311.5	0.338	5.59	97.3	2.7	0.31	0.2	0.15	0.28	0.34	95	213
100	ISL	14.55	14.54	33.563	24.965	301.1	0.353	5.43	93.7	3.5	0.39	1.4	0.13	0.26	0.32	100	
104		14.12	14.11	33.568	25.059	292.1	0.365	5.31	90.9	4.2	0.47	2.6	0.11	0.23	0.31	104	212
115		13.08	13.06	33.557	25.263	272.9	0.396	5.08	85.1	6.3	0.66	5.7	0.02	0.17	0.24	115	211
124		12.01	11.99	33.573	25.483	252.0	0.420	4.83	79.1	9.1	0.90	9.4	0.02	0.12	0.17	125	210
125	ISL	11.92	11.90	33.576	25.502	250.2	0.422	4.81	78.6	9.4	0.92	9.7	0.02	0.12	0.17	126	
139		10.88	10.86	33.639	25.740	227.6	0.456	4.53	72.4	13.0	1.14	13.5	0.01	0.07	0.12	140	209
150	ISL	10.33	10.31	33.711	25.893	213.2	0.480	4.43	70.0	15.3	1.24	15.4	0.01	0.04	0.08	151	
164		9.84	9.82	33.801	26.046	198.9	0.509	4.35	68.1	17.8	1.33	17.2	0.01	0.02	0.04	165	208
196		9.15	9.13	33.908	26.243	180.6	0.570	4.04	62.3	23.5	1.56	20.8	0.01	0.00	0.03	197	207
200	ISL	9.09	9.07	33.918	26.260	179.0	0.577	4.02	61.9	24.0	1.58	21.1	0.01			201	
229		8.66	8.64	33.972	26.370	168.9	0.627	3.79	57.8	28.2	1.70	23.0	0.01			230	206
250	ISL	8.30	8.27	33.996	26.445	162.1	0.662	3.44	52.0	32.5	1.87	25.2	0.00			251	
269		7.98	7.95	34.013	26.506	156.5	0.692	3.08	46.3	36.7	2.03	27.3	0.00			270	205
300	ISL	7.57	7.54	34.039	26.586	149.2	0.740	2.55	38.0	42.6	2.25	30.0	0.00			302	
318		7.36	7.33	34.051	26.626	145.6	0.766	2.28	33.8	45.9	2.37	31.4	0.00			320	204
377		6.62	6.59	34.070	26.742	135.0	0.849	1.65	24.0	57.7	2.65	35.1	0.00			379	203
400	ISL	6.35	6.31	34.083	26.788	130.7	0.880	1.39	20.1	62.7	2.76	36.6	0.00			402	
435		6.00	5.96	34.108	26.853	124.8	0.924	1.04	14.9	69.9	2.92	38.7	0.00			438	202
500	ISL	5.64	5.60	34.176	26.952	116.0	1.003	0.63	9.0	79.9	3.10	40.7	0.00			503	
512		5.57	5.53	34.189	26.970	114.3	1.016	0.56	8.0	81.7	3.13	41.1	0.00			515	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 34.7 N	122 49.0 W	19/07/98	1249 UTC	4272 m	340 20 kn			1011.4 mb	18.1 C	16.7 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	17.74	17.74	33.265	24.008	389.3	0.000	5.53	101.5	1.7	0.23	0.1	0.00	0.12	0.02	0	
1	17.74	17.74	33.265	24.008	389.3	0.004	5.53	101.5	1.7	0.23	0.1	0.00	0.12	0.02	1	220
10 ISL	17.74	17.74	33.264	24.007	389.7	0.039	5.53	101.5	1.7	0.23	0.0	0.00	0.12	0.02	10	
15	17.74	17.74	33.263	24.007	389.9	0.058	5.53	101.5	1.7	0.23	0.0	0.00	0.12	0.02	15	219
20 ISL	17.75	17.75	33.274	24.013	389.5	0.078	5.53	101.5	1.7	0.23	0.0	0.00	0.12	0.02	20	
30	17.77	17.76	33.296	24.026	388.6	0.117	5.53	101.6	1.7	0.23	0.0	0.00	0.12	0.03	30	218
45	17.42	17.41	33.421	24.206	371.9	0.174	5.65	103.2	1.9	0.24	0.0	0.00	0.13	0.03	45	217
50 ISL	16.88	16.87	33.404	24.321	361.1	0.192	5.75	103.9	1.9	0.24	0.0	0.00	0.14	0.03	50	
60	15.76	15.75	33.360	24.543	340.2	0.227	5.91	104.4	2.0	0.25	0.0	0.00	0.15	0.04	60	216
75	15.23	15.22	33.375	24.672	328.3	0.277	5.87	102.6	2.1	0.26	0.0	0.00	0.18	0.06	75	215
85	15.69	15.68	33.599	24.744	321.9	0.310	5.77	101.9	2.2	0.22	0.0	0.00	0.20	0.08	85	214
94	15.48	15.47	33.620	24.807	316.1	0.339	5.73	100.8	2.4	0.22	0.0	0.00	0.21	0.12	94	213
100 ISL	15.08	15.06	33.596	24.876	309.6	0.357	5.71	99.7	2.5	0.23	0.0	0.00	0.28	0.23	100	
105	14.73	14.71	33.580	24.940	303.7	0.373	5.67	98.2	2.7	0.25	0.0	0.00	0.33	0.31	105	212
114	14.41	14.39	33.624	25.042	294.1	0.400	5.51	94.9	3.4	0.33	0.7	0.19	0.31	0.32	114	211
125	13.69	13.67	33.609	25.181	281.1	0.431	5.30	89.9	4.8	0.47	3.0	0.15	0.25	0.24	126	210
140	12.44	12.42	33.621	25.438	256.7	0.472	4.98	82.3	7.6	0.75	7.4	0.02	0.17	0.19	141	209
150 ISL	11.77	11.75	33.651	25.589	242.5	0.497	4.83	78.7	9.4	0.88	9.7	0.02	0.12	0.15	151	
165	10.90	10.88	33.710	25.793	223.3	0.531	4.63	74.1	12.4	1.06	12.7	0.01	0.07	0.09	166	208
194	9.42	9.40	33.836	26.143	190.1	0.591	4.17	64.6	20.8	1.45	19.1	0.00	0.01	0.03	195	207
200 ISL	9.26	9.24	33.861	26.189	185.9	0.603	4.12	63.7	22.0	1.49	19.8	0.00			201	
229	8.73	8.71	33.953	26.345	171.4	0.655	3.83	58.5	27.4	1.67	22.6	0.00			230	206
250 ISL	8.34	8.31	33.979	26.425	164.0	0.690	3.31	50.1	32.3	1.89	25.5	0.00			251	
268	8.04	8.01	33.990	26.479	159.1	0.719	2.86	43.0	36.5	2.08	27.9	0.00			269	205
300 ISL	7.60	7.57	34.018	26.565	151.2	0.768	2.51	37.4	42.0	2.25	30.1	0.00			302	
318	7.37	7.34	34.029	26.607	147.4	0.795	2.40	35.6	44.9	2.31	30.9	0.00			320	204
380	6.39	6.36	34.029	26.740	135.0	0.883	1.88	27.2	57.8	2.59	34.9	0.00			382	203
400 ISL	6.26	6.22	34.049	26.773	132.1	0.910	1.64	23.7	61.3	2.68	36.0	0.00			402	
439	6.09	6.05	34.095	26.831	127.0	0.960	1.19	17.1	67.7	2.84	37.9	0.00			442	202
500 ISL	5.72	5.68	34.148	26.920	119.1	1.035	0.79	11.3	77.2	3.02	40.0	0.00			503	
519	5.60	5.56	34.165	26.948	116.5	1.058	0.67	9.5	80.1	3.08	40.7	0.00			522	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 15.1 N	123 29.7 W	19/07/98	0635 UTC	4158 m	350 19 kn			1013.6 mb	18.9 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	18.04	18.04	33.408	24.044	385.8	0.000	5.55	102.6	1.8	0.23	0.1	0.00	0.11	0.02	0	
2	18.04	18.04	33.408	24.045	385.9	0.008	5.55	102.6	1.8	0.23	0.1	0.00	0.11	0.02	2	220
10 ISL	18.05	18.05	33.408	24.042	386.4	0.039	5.56	102.8	1.8	0.23	0.0	0.00	0.10	0.02	10	
15	18.05	18.05	33.408	24.043	386.5	0.058	5.57	103.0	1.8	0.23	0.0	0.00	0.10	0.02	15	219
20 ISL	18.04	18.04	33.409	24.046	386.4	0.077	5.56	102.8	1.8	0.23	0.0	0.00	0.10	0.02	20	
29	18.03	18.03	33.410	24.050	386.3	0.112	5.55	102.5	1.8	0.23	0.0	0.00	0.11	0.02	29	218
30 ISL	17.97	17.96	33.411	24.065	384.9	0.116	5.56	102.6	1.8	0.23	0.0	0.00	0.11	0.02	30	
45	16.84	16.83	33.420	24.342	358.9	0.172	5.78	104.4	1.9	0.24	0.0	0.00	0.14	0.04	45	217
50 ISL	16.41	16.40	33.404	24.429	350.7	0.189	5.84	104.6	1.9	0.25	0.0	0.00	0.15	0.04	50	
59	15.75	15.74	33.381	24.562	338.4	0.220	5.91	104.4	2.0	0.26	0.0	0.00	0.17	0.05	59	216
74	15.36	15.35	33.408	24.669	328.5	0.270	5.81	101.9	2.1	0.28	0.0	0.00	0.27	0.14	74	215
75 ISL	15.36	15.35	33.410	24.671	328.4	0.274	5.81	101.9	2.1	0.28	0.0	0.00	0.27	0.15	75	
83	15.33	15.32	33.433	24.696	326.3	0.300	5.80	101.6	2.1	0.27	0.0	0.00	0.27	0.22	83	214
94	15.15	15.14	33.495	24.783	318.3	0.335	5.65	98.7	2.7	0.31	0.1	0.05	0.47	0.45	94	213
100 ISL	15.10	15.08	33.558	24.843	312.8	0.354	5.53	96.5	3.0	0.34	0.5	0.12	0.43	0.45	100	
104	15.02	15.00	33.597	24.890	308.4	0.367	5.44	94.8	3.3	0.36	1.0	0.16	0.40	0.45	104	212
114	14.41	14.39	33.622	25.041	294.3	0.397	5.22	89.9	4.5	0.48	3.0	0.09	0.24	0.39	114	211
124	13.18	13.16	33.572	25.255	273.9	0.425	4.83	81.1	7.0	0.74	6.7	0.03	0.26	0.25	125	210
125 ISL	13.11	13.09	33.572	25.269	272.6	0.428	4.82	80.8	7.1	0.75	6.9	0.03	0.25	0.24	126	
138	12.50	12.48	33.589	25.402	260.2	0.463	4.72	78.1	8.7	0.86	8.8	0.02	0.12	0.17	139	209
150 ISL	11.82	11.80	33.602	25.541	247.0	0.493	4.52	73.7	10.8	1.01	11.2	0.01	0.09	0.13	151	
163	11.09	11.07	33.631	25.698	232.3	0.524	4.21	67.6	13.9	1.21	14.2	0.01	0.06	0.11	164	208
192	9.79	9.77	33.794	26.049	199.1	0.587	3.27	51.1	23.6	1.75	22.1	0.00	0.00	0.04	193	207
200 ISL	9.56	9.54	33.835	26.120	192.5	0.602	3.12	48.5	25.5	1.83	23.3	0.00			201	
229	8.94	8.92	33.962	26.319	174.0	0.656	2.71	41.6	31.2	2.04	26.3	0.00			230	206
250 ISL	8.59	8.56	34.037	26.433	163.5	0.691	2.42	36.9	35.6	2.18	28.0	0.01			251	
268	8.35	8.32	34.086	26.508	156.5	0.720	2.20	33.3	39.1	2.28	29.2	0.01			269	205
300 ISL	7.99	7.96	34.125	26.593	148.9	0.769	1.89	28.4	44.1	2.42	30.9	0.00			302	
320	7.79	7.76	34.135	26.630	145.5	0.798	1.73	25.9	46.9	2.50	31.8	0.00			322	204
379	7.24	7.20	34.170	26.737	136.1	0.881	1.26	18.6	55.7	2.74	34.5	0.01			381	203
400 ISL	7.03	6.99	34.182	26.776	132.6	0.909	1.10	16.2	59.4	2.82	35.5	0.01			402	
440	6.64	6.60	34.204	26.846	126.2	0.961	0.83	12.1	66.2	2.94	37.4	0.01			443	202
500 ISL	6.20	6.16	34.235	26.929	118.8	1.035	0.56	8.1	73.7	3.07	39.2	0.01			503	
510	6.13	6.08	34.240	26.942	117.7	1.046	0.52	7.5	75.0	3.09	39.5	0.01			513	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 54.8 N	124 10.7 W	19/07/98	0004	UTC	4199 m	330	19 kn	350 07 07	1	1014.6 mb	19.0 C	17.1 C	27m	5/8	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	18.26	18.26	33.477	24.043	385.9	0.000	5.54	102.9	1.9	0.23	0.0	0.00	0.08	0.01	0	
2		18.26	18.26	33.477	24.043	386.0	0.008	5.54	102.9	1.9	0.23	0.0	0.00	0.08	0.01	2	220
10	ISL	18.23	18.23	33.477	24.051	385.5	0.039	5.54	102.8	1.9	0.23	0.0	0.00	0.08	0.02	10	
15		18.21	18.21	33.477	24.056	385.2	0.058	5.54	102.8	1.9	0.23	0.0	0.00	0.08	0.02	15	219
20	ISL	18.09	18.09	33.488	24.094	381.8	0.077	5.55	102.7	1.9	0.23	0.0	0.00	0.09	0.02	20	
30		17.80	17.79	33.516	24.187	373.3	0.115	5.59	102.9	2.0	0.22	0.0	0.00	0.11	0.03	30	218
45		17.52	17.51	33.547	24.279	365.0	0.170	5.65	103.5	2.1	0.21	0.0	0.00	0.12	0.05	45	217
50	ISL	17.28	17.27	33.597	24.374	356.1	0.188	5.72	104.3	2.1	0.20	0.0	0.00	0.12	0.05	50	
59		16.83	16.82	33.693	24.554	339.2	0.219	5.82	105.2	2.2	0.19	0.0	0.00	0.13	0.04	59	216
74		16.49	16.48	33.764	24.688	326.9	0.269	5.75	103.3	2.3	0.19	0.0	0.00	0.17	0.05	74	215
75	ISL	16.44	16.43	33.758	24.695	326.3	0.273	5.75	103.2	2.3	0.19	0.0	0.00	0.17	0.05	75	
85		16.09	16.08	33.717	24.744	321.9	0.305	5.77	102.8	2.3	0.20	0.0	0.00	0.19	0.08	85	214
94		16.17	16.16	33.804	24.793	317.5	0.334	5.70	101.8	2.3	0.20	0.0	0.00	0.20	0.08	94	213
100	ISL	16.05	16.03	33.810	24.825	314.6	0.353	5.69	101.4	2.4	0.20	0.0	0.00	0.21	0.13	100	
105		15.95	15.93	33.818	24.854	312.0	0.368	5.68	101.0	2.5	0.20	0.0	0.00	0.21	0.19	105	212
114		16.02	16.00	33.921	24.918	306.3	0.396	5.57	99.2	2.6	0.20	0.0	0.02	0.35	0.31	114	211
123		15.88	15.86	33.963	24.982	300.4	0.424	5.48	97.4	2.9	0.23	0.3	0.12	0.31	0.33	124	210
125	ISL	15.77	15.75	33.953	25.000	298.9	0.430	5.46	96.8	3.0	0.25	0.5	0.11	0.30	0.32	126	
139		14.65	14.63	33.825	25.147	285.0	0.470	5.27	91.3	4.2	0.41	2.5	0.07	0.24	0.25	140	209
150	ISL	13.41	13.39	33.733	25.334	267.2	0.501	5.06	85.4	6.3	0.61	5.5	0.04	0.17	0.19	151	
164		11.85	11.83	33.670	25.589	242.9	0.537	4.79	78.2	9.6	0.88	9.6	0.01	0.09	0.13	165	208
197		10.11	10.09	33.792	25.994	204.6	0.610	4.36	68.6	16.7	1.29	16.4	0.01	0.03	0.05	198	207
200	ISL	9.99	9.97	33.803	26.023	201.9	0.616	4.34	68.1	17.3	1.32	16.8	0.01			201	
233		8.99	8.96	33.912	26.272	178.5	0.679	4.01	61.6	24.5	1.58	21.2	0.01			234	206
250	ISL	8.60	8.57	33.954	26.366	169.8	0.709	3.64	55.4	28.9	1.75	23.6	0.00			251	
268		8.25	8.22	33.986	26.445	162.5	0.739	3.25	49.1	33.5	1.93	26.0	0.00			269	205
300	ISL	7.66	7.63	34.008	26.549	152.8	0.789	2.92	43.5	39.5	2.12	28.5	0.00			302	
320		7.33	7.30	34.012	26.599	148.1	0.819	2.77	41.0	43.1	2.21	29.7	0.01			322	204
381		6.50	6.47	34.042	26.736	135.5	0.906	1.87	27.1	57.1	2.59	34.8	0.01			383	203
400	ISL	6.36	6.32	34.054	26.764	133.0	0.931	1.67	24.2	60.1	2.67	35.8	0.01			402	
426		6.22	6.18	34.073	26.797	130.1	0.966	1.42	20.5	63.7	2.76	36.9	0.01			429	202
500	ISL	5.83	5.79	34.157	26.913	119.8	1.058	0.79	11.3	75.2	3.01	39.6	0.01			503	
518		5.74	5.70	34.178	26.941	117.3	1.079	0.64	9.1	78.0	3.07	40.2	0.01			521	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 53.3 N	118 30.2 W	16/07/98	0637	UTC	58 m	220	01 kn			1010.0 mb	18.7 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	20.11	20.11	33.405	23.518	436.0	0.000	5.64	108.4	2.7	0.21	0.2	0.00	0.22	0.09	0	
1		20.11	20.11	33.405	23.518	436.1	0.004	5.64	108.4	2.7	0.21	0.2	0.00	0.22	0.09	1	207
5		20.06	20.06	33.400	23.528	435.3	0.022	5.64	108.3	2.7	0.21	0.2	0.00	0.24	0.08	5	206
10		19.87	19.87	33.385	23.566	431.8	0.043	5.72	109.4	2.8	0.21	0.2	0.00	0.26	0.09	10	205
19		17.90	17.90	33.414	24.084	382.7	0.080	6.54	120.5	2.7	0.18	0.2	0.00	0.65	0.25	19	204
20	ISL	17.63	17.63	33.411	24.147	376.7	0.084	6.52	119.6	2.8	0.19	0.2	0.00	0.67	0.25	20	
29		15.49	15.49	33.390	24.625	331.3	0.116	6.33	111.3	3.8	0.28	0.2	0.00	0.78	0.18	29	203
30	ISL	15.36	15.36	33.390	24.654	328.6	0.119	6.31	110.6	3.9	0.28	0.2	0.00	0.81	0.18	30	
38		14.59	14.58	33.395	24.825	312.6	0.145	6.14	106.0	4.9	0.36	0.4	0.01	1.00	0.20	38	202
49		13.38	13.37	33.430	25.103	286.3	0.178	4.72	79.5	9.5	0.86	4.0	0.36	0.59	0.43	49	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 49.3 N	118 37.8 W	16/07/98	0831	UTC	675 m	190	04 kn			1009.9 mb	18.1 C	17.8 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	20.07	20.07	33.435	23.551	432.9	0.000	5.69	109.3	2.5	0.19	0.2	0.00	0.30	0.12	0	
1		20.07	20.07	33.435	23.551	432.9	0.004	5.69	109.3	2.5	0.19	0.2	0.00	0.30	0.12	1	220
9		19.87	19.87	33.426	23.597	428.8	0.039	5.75	110.0	2.3	0.18	0.2	0.00	0.33	0.16	9	219
10	ISL	19.79	19.79	33.420	23.613	427.3	0.043	5.76	110.0	2.3	0.18	0.2	0.00	0.33	0.16	10	
20		18.07	18.07	33.341	23.987	392.0	0.084	5.99	110.7	2.6	0.21	0.2	0.00	0.38	0.19	20	218
29		15.06	15.06	33.338	24.680	326.2	0.116	6.44	112.2	4.0	0.28	0.2	0.00	0.66	0.28	29	217
30	ISL	14.89	14.89	33.314	24.698	324.4	0.120	6.43	111.6	4.0	0.28	0.2	0.00	0.72	0.31	30	
40		14.03	14.02	33.305	24.873	308.0	0.151	6.06	103.4	3.6	0.33	0.2	0.01	1.26	0.60	40	216
50		13.70	13.69	33.363	24.986	297.5	0.182	5.56	94.2	4.6	0.50	2.3	0.12	1.19	0.71	50	215
60		12.96	12.95	33.468	25.216	275.8	0.210	4.83	80.7	7.9	0.82	7.2	0.30	0.70	0.61	60	214
69		12.56	12.55	33.526	25.340	264.3	0.234	4.49	74.4	9.9	0.97	9.4	0.30	0.46	0.45	69	213
75	ISL	12.26	12.25	33.549	25.415	257.2	0.250	4.26	70.1	11.2	1.08	11.2	0.23	0.36	0.40	75	
84		11.74	11.73	33.584	25.541	245.4	0.273	3.94	64.2	13.6	1.25	14.1	0.11	0.24	0.34	84	212
100		10.48	10.47	33.707	25.863	215.0	0.310	3.52	55.8	19.5	1.56	19.3	0.01	0.04	0.08	100	211
119		10.00	9.99	33.816	26.030	199.4	0.349	3.11	48.8	23.5	1.75	22.0	0.01	0.02	0.06	120	210
125	ISL	9.93	9.92	33.838	26.059	196.8	0.361	3.02	47.4	24.3	1.79	22.5	0.01	0.02	0.06	126	
139		9.83	9.81	33.877	26.107	192.6	0.388	2.86	44.8	25.7	1.86	23.5	0.02	0.03	0.05	140	209
150	ISL	9.73	9.71	33.895	26.138	189.9	0.409	2.79	43.6	26.6	1.90	24.0	0.02	0.02	0.05	151	
169		9.55	9.53	33.937	26.200	184.2	0.445	2.64	41.1	28.4	1.97	25.0	0.02	0.01	0.05	170	208
199		9.31	9.29	34.104	26.371	168.7	0.498	1.97	30.5	34.2	2.23	27.8	0.01	0.01	0.06	200	207
200	ISL	9.30	9.28	34.107	26.375	168.3	0.499	1.96	30.4	34.4	2.24	27.9	0.01			201	
228		8.95	8.93	34.165	26.476	159.1	0.545	1.69	26.0	38.5	2.38	29.5	0.01			229	206
250	ISL	8.72	8.69	34.187	26.530	154.3	0.580	1.56	23.9	41.0	2.45	30.3	0.01			251	
268		8.54	8.51	34.197	26.566	151.2	0.607	1.48	22.5	43.0	2.49	30.8	0.01			270	205
300	ISL	8.17	8.14	34.216	26.638	144.8	0.654	1.29	19.5	47.3	2.60	32.1	0.00			302	
317		7.97	7.94	34.224	26.674	141.5	0.679	1.19	17.9	49.7	2.66	32.9	0.00			319	204
377		7.38	7.34	34.249	26.780	132.2	0.761	0.86	12.8	58.0	2.83	35.3	0.00			379	203
400	ISL	7.25	7.21	34.253	26.801	130.4	0.791	0.79	11.7	59.8	2.87	35.8	0.00			403	
437		7.04	7.00	34.259	26.835	127.6	0.839	0.69	10.2	62.9	2.93	36.6	0.00			440	202
500	ISL	6.44	6.39	34.296	26.946	117.5	0.916	0.42	6.1	73.5	3.09	38.9	0.00			503	
520		6.25	6.20	34.309	26.981	114.3	0.939	0.33	4.8	76.8	3.14	39.6	0.00			524	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 39.6 N	118 58.6 W	16/07/98	1234 UTC	764 m	130 01 kn			1009.6 mb	16.3 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	18.83	18.83	33.315	23.778	411.2	0.000	5.56	104.3	2.4	0.25	0.1	0.00	0.17	0.04	0	220
9	18.68	18.68	33.315	23.816	408.0	0.037	5.60	104.7	2.4	0.25	0.1	0.00	0.17	0.04	9	219
10 ISL	18.62	18.62	33.318	23.833	406.3	0.041	5.61	104.8	2.4	0.25	0.1	0.00	0.18	0.04	10	
20	18.03	18.03	33.353	24.006	390.2	0.081	5.68	104.9	2.6	0.26	0.1	0.00	0.23	0.07	20	218
29	15.28	15.28	33.351	24.642	329.8	0.113	6.07	106.2	3.7	0.31	0.1	0.00	0.55	0.21	29	217
30 ISL	15.04	15.04	33.344	24.688	325.3	0.116	6.06	105.5	3.8	0.33	0.2	0.01	0.68	0.27	30	
40	13.29	13.28	33.314	25.031	292.9	0.147	5.63	94.6	5.2	0.57	3.0	0.10	1.59	0.77	40	216
50	12.52	12.51	33.475	25.307	266.8	0.175	4.68	77.4	8.8	0.92	9.2	0.05	0.59	0.46	50	215
60	12.25	12.24	33.502	25.380	260.1	0.202	4.54	74.7	9.8	1.00	10.5	0.05	0.37	0.44	60	214
70	11.46	11.45	33.577	25.586	240.7	0.227	4.10	66.4	13.3	1.24	14.2	0.03	0.19	0.28	70	213
75 ISL	11.19	11.18	33.597	25.651	234.6	0.239	4.00	64.4	14.4	1.31	15.3	0.02	0.14	0.22	75	
85	10.79	10.78	33.631	25.749	225.5	0.262	3.86	61.6	16.3	1.40	16.9	0.01	0.09	0.13	85	212
99	10.32	10.31	33.712	25.894	212.0	0.292	3.51	55.5	19.6	1.57	19.4	0.01	0.05	0.09	99	211
100 ISL	10.29	10.28	33.715	25.902	211.3	0.294	3.50	55.3	19.8	1.58	19.5	0.01	0.05	0.09	100	
120	9.90	9.89	33.783	26.021	200.3	0.336	3.27	51.2	22.8	1.71	21.6	0.01	0.02	0.05	121	210
125 ISL	9.88	9.87	33.816	26.050	197.6	0.345	3.12	48.9	23.8	1.77	22.3	0.01	0.02	0.05	126	
139	9.84	9.82	33.910	26.131	190.3	0.373	2.69	42.1	26.7	1.92	24.1	0.00	0.01	0.05	140	209
150 ISL	9.71	9.69	33.953	26.186	185.2	0.393	2.53	39.5	28.2	1.99	25.0	0.00	0.01	0.05	151	
169	9.46	9.44	34.006	26.269	177.7	0.428	2.37	36.8	30.3	2.07	26.0	0.01	0.01	0.05	170	208
199	9.19	9.17	34.089	26.378	167.9	0.480	2.05	31.7	34.3	2.22	27.7	0.01	0.01	0.06	200	207
200 ISL	9.18	9.16	34.091	26.381	167.6	0.481	2.04	31.5	34.4	2.22	27.7	0.01			201	
229	8.95	8.93	34.129	26.448	161.8	0.529	1.88	28.9	36.9	2.32	28.7	0.01			230	206
250 ISL	8.77	8.74	34.144	26.489	158.3	0.563	1.81	27.7	38.7	2.36	29.3	0.01			251	
268	8.59	8.56	34.154	26.525	155.1	0.591	1.74	26.5	40.5	2.40	29.9	0.01			270	205
300 ISL	8.21	8.18	34.183	26.606	147.8	0.639	1.49	22.5	45.5	2.53	31.5	0.01			302	
318	7.99	7.96	34.199	26.651	143.7	0.666	1.34	20.2	48.4	2.61	32.4	0.01			320	204
378	7.49	7.45	34.216	26.738	136.2	0.750	1.07	15.9	54.7	2.75	34.2	0.01			380	203
400 ISL	7.32	7.28	34.232	26.775	132.9	0.779	0.93	13.8	57.6	2.82	35.0	0.01			403	
438	7.05	7.01	34.261	26.836	127.6	0.829	0.69	10.2	62.8	2.93	36.3	0.00			441	202
500 ISL	6.61	6.56	34.281	26.912	120.9	0.906	0.52	7.6	70.0	3.03	38.0	0.00			503	
516	6.50	6.45	34.286	26.930	119.3	0.925	0.47	6.8	71.8	3.06	38.4	0.00			520	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 30.2 N	119 17.8 W	16/07/98	1812 UTC	1662 m	290 02 kn	310 01 05	4	1011.3 mb	17.9 C	17.0 C	25m	8/8

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	18.28	18.28	33.412	23.989	391.1	0.000	5.61	104.2	2.8	0.25	0.1	0.00	0.15	0.03	0	
1	18.23	18.23	33.410	23.999	390.1	0.004									1	223
1 A	18.28	18.28	33.412	23.989	391.2	0.004	5.61	104.2	2.8	0.25	0.1	0.00	0.15	0.03	1	222
2	18.26	18.26	33.411	23.993	390.8	0.008									2	224
10	17.82	17.82	33.419	24.107	380.2	0.039	5.70	104.9	2.9	0.26	0.1	0.00	0.20	0.06	10	221
19 A	16.43	16.43	33.387	24.411	351.5	0.072	5.90	105.7	3.3	0.29	0.1	0.00	0.25	0.07	19	220
20 ISL	16.09	16.09	33.381	24.484	344.6	0.075	5.86	104.2	3.4	0.31	0.2	0.02	0.45	0.12	20	
28	13.46	13.46	33.398	25.061	289.7	0.100	5.55	93.6	5.3	0.60	3.5	0.19	1.58	0.53	28	219
30 ISL	13.09	13.09	33.419	25.152	281.1	0.106	5.28	88.4	6.6	0.72	5.5	0.18	1.33	0.53	30	
34 A	12.55	12.55	33.466	25.294	267.7	0.117	4.73	78.3	9.3	0.96	9.6	0.13	0.68	0.53	34	218
43	11.70	11.69	33.569	25.535	244.9	0.140	4.17	67.8	13.1	1.22	13.8	0.05	0.24	0.29	43	217
50 ISL	11.10	11.09	33.622	25.686	230.7	0.157	3.91	62.8	15.6	1.36	16.1	0.02	0.11	0.17	50	
52 A	10.97	10.96	33.634	25.719	227.6	0.161	3.85	61.7	16.2	1.39	16.6	0.02	0.10	0.15	52	216
60	10.83	10.82	33.670	25.772	222.8	0.179	3.63	58.0	18.0	1.51	18.2	0.02	0.07	0.14	60	215
68 A	10.69	10.68	33.700	25.820	218.4	0.197	3.49	55.6	19.2	1.56	19.1	0.02	0.05	0.10	68	214
75 ISL	10.42	10.41	33.736	25.895	211.3	0.212	3.35	53.1	20.8	1.64	20.3	0.01	0.03	0.09	75	
80	10.20	10.19	33.762	25.953	205.9	0.223	3.27	51.6	21.9	1.69	21.1	0.01	0.02	0.09	80	213
94 A	9.81	9.80	33.799	26.048	197.1	0.251	3.18	49.7	23.8	1.76	22.3	0.01	0.01	0.06	94	212
100 ISL	9.66	9.65	33.823	26.092	193.1	0.262	3.09	48.2	25.0	1.81	23.1	0.01	0.01	0.06	101	
107	9.54	9.53	33.855	26.137	189.0	0.276	2.97	46.2	26.4	1.86	23.9	0.01	0.01	0.06	108	211
119	9.54	9.53	33.912	26.182	185.0	0.298	2.79	43.4	27.6	1.93	24.6	0.01	0.01	0.05	120	210
125 ISL	9.49	9.48	33.940	26.212	182.2	0.309	2.70	42.0	28.5	1.97	25.1	0.01	0.01	0.05	126	
138	9.33	9.31	33.996	26.282	175.8	0.333	2.51	38.9	30.7	2.05	26.2	0.01	0.01	0.06	139	209
150 ISL	9.16	9.14	34.038	26.342	170.3	0.353	2.34	36.1	32.8	2.13	27.2	0.01	0.01	0.06	151	
169	8.91	8.89	34.092	26.425	162.8	0.385	2.07	31.8	35.9	2.25	28.5	0.01	0.01	0.05	170	208
197	8.77	8.75	34.151	26.493	156.8	0.430	1.72	26.3	39.3	2.38	29.8	0.04	0.01	0.08	198	207
200 ISL	8.75	8.73	34.155	26.500	156.2	0.434	1.69	25.9	39.7	2.39	29.9	0.04			201	
228	8.50	8.48	34.182	26.560	151.0	0.477	1.48	22.5	43.1	2.49	31.1	0.05			229	206
250 ISL	8.31	8.28	34.197	26.601	147.4	0.510	1.38	20.9	45.4	2.55	31.8	0.04			252	
268	8.16	8.13	34.205	26.630	144.9	0.537	1.31	19.8	47.1	2.60	32.3	0.02			270	205
300 ISL	7.93	7.90	34.216	26.673	141.3	0.582	1.20	18.0	50.0	2.66	33.1	0.01			302	
318	7.79	7.76	34.221	26.698	139.2	0.608	1.13	16.9	51.9	2.70	33.6	0.01			320	204
376	7.19	7.15	34.253	26.809	129.2	0.685	0.78	11.5	61.1	2.89	36.0	0.01			378	203
400 ISL	7.04	7.00	34.267	26.841	126.4	0.716	0.67	9.9	63.8	2.95	36.6	0.01			403	
435	6.86	6.82	34.286	26.881	123.0	0.760	0.54	7.9	67.3	3.02	37.3	0.01			438	202
500 ISL	6.47	6.42	34.308	26.951	117.0	0.838	0.38	5.5	74.3	3.11	38.6	0.01			503	
518	6.36	6.31	34.315	26.971	115.3	0.859	0.34	4.9	76.3	3.14	38.9	0.01			522	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 19.4 N	119 39.7 W	16/07/98	2205 UTC	80 m	280 06 kn	270 03 07	4	1011.2 mb	18.0 c	17.5 c	13m	8/8	

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	16.11	16.11	33.549	24.608	332.1	0.000	6.05	107.8	3.2	0.40	1.5	0.09	1.22	0.25	0	
1		16.23	16.23	33.545	24.577	335.1	0.003									1	210
1		16.11	16.11	33.549	24.608	332.1	0.003	6.05	107.8	3.2	0.40	1.5	0.09	1.22	0.25	1	209
1		16.13	16.13	33.546	24.601	332.8	0.003									1	211
5		15.62	15.62	33.547	24.717	321.9	0.016	5.95	105.0	4.3	0.46	2.3	0.12	1.38	0.30	5	208
10		14.55	14.55	33.555	24.956	299.3	0.032	5.51	95.1	7.7	0.71	5.4	0.25	1.42	0.63	10	207
20		12.66	12.66	33.600	25.376	259.5	0.060	4.49	74.6	13.2	1.14	12.2	0.31	0.72	0.47	20	206
30	ISL	11.98	11.98	33.653	25.548	243.4	0.085	4.02	65.8	16.1	1.32	15.2	0.22	0.50	0.40	30	
31		11.93	11.93	33.658	25.561	242.2	0.087	3.99	65.3	16.3	1.33	15.4	0.21	0.49	0.40	31	205
39		11.06	11.06	33.709	25.761	223.4	0.106	3.54	56.9	19.4	1.53	18.5	0.17	0.31	0.37	39	204
49		10.65	10.64	33.746	25.862	213.9	0.128	3.36	53.5	21.1	1.63	19.9	0.13	0.20	0.28	49	203
50	ISL	10.63	10.62	33.750	25.869	213.3	0.130	3.34	53.2	21.2	1.64	20.0	0.13	0.19	0.28	50	
59		10.45	10.44	33.780	25.924	208.3	0.149	3.22	51.1	22.5	1.69	20.8	0.12	0.16	0.26	59	202
69		10.23	10.22	33.803	25.980	203.1	0.170	3.15	49.7	23.9	1.76	21.9	0.12	0.13	0.22	69	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 9.5 N	120 0.4 W	17/07/98	0156 UTC	1198 m	300 14 kn	310 04 08	1	1010.1 mb	17.9 c	17.0 c		1/8	AS

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	16.77	16.77	33.465	24.391	352.8	0.000	5.82	105.0	4.1	0.35	0.1	0.00	0.50	0.07	0	
1		16.77	16.77	33.465	24.391	352.8	0.004	5.82	105.0	4.1	0.35	0.1	0.00	0.50	0.07	1	220
9		16.63	16.63	33.466	24.425	349.8	0.032	5.82	104.7	4.2	0.35	0.0	0.00	0.39	0.07	9	219
10	ISL	16.56	16.56	33.465	24.440	348.4	0.035	5.83	104.7	4.2	0.35	0.0	0.00	0.39	0.07	10	
19		15.82	15.82	33.456	24.602	333.3	0.066	5.94	105.2	4.2	0.38	0.2	0.02	0.42	0.13	19	218
20	ISL	15.78	15.78	33.456	24.611	332.4	0.069	5.94	105.1	4.3	0.38	0.3	0.02	0.45	0.14	20	
29		15.26	15.26	33.445	24.718	322.5	0.099	5.92	103.6	4.7	0.45	1.0	0.06	0.73	0.23	29	217
30	ISL	15.12	15.12	33.440	24.745	319.9	0.102	5.91	103.2	4.8	0.47	1.3	0.07	0.74	0.25	30	
38		13.92	13.91	33.420	24.985	297.3	0.127	5.69	96.9	6.6	0.67	4.1	0.20	0.81	0.38	38	216
49		12.94	12.93	33.496	25.242	273.1	0.158	5.10	85.1	10.5	0.95	8.5	0.39	0.33	0.43	49	215
50	ISL	12.89	12.88	33.498	25.253	272.0	0.161	5.06	84.4	10.7	0.97	8.8	0.38	0.31	0.42	50	
60		12.36	12.35	33.532	25.383	259.9	0.187	4.54	74.9	12.8	1.15	12.3	0.30	0.19	0.31	60	214
70		11.24	11.23	33.652	25.685	231.3	0.212	3.58	57.7	17.5	1.50	17.9	0.01	0.14	0.27	70	213
75	ISL	10.94	10.93	33.690	25.768	223.5	0.223	3.37	54.0	19.0	1.59	19.3	0.01	0.11	0.23	75	
84		10.59	10.58	33.742	25.871	213.9	0.243	3.19	50.7	21.1	1.68	20.8	0.01	0.06	0.16	84	212
99		9.97	9.96	33.846	26.058	196.3	0.274	2.87	45.0	25.2	1.85	23.4	0.00	0.03	0.15	99	211
100	ISL	9.94	9.93	33.850	26.066	195.6	0.276	2.87	45.0	25.4	1.85	23.5	0.00	0.03	0.15	100	
119		9.41	9.40	33.899	26.193	183.9	0.312	2.91	45.1	27.8	1.90	24.5	0.01	0.01	0.10	120	210
125	ISL	9.25	9.24	33.922	26.237	179.8	0.323	2.88	44.5	28.8	1.93	25.0	0.01	0.01	0.09	126	
138		8.91	8.90	33.970	26.328	171.2	0.345	2.79	42.8	31.1	2.00	26.0	0.01	0.01	0.08	139	209
150	ISL	8.64	8.62	33.996	26.391	165.5	0.366	2.75	41.9	32.9	2.04	26.7	0.01	0.01	0.08	151	
168		8.27	8.25	34.016	26.464	158.8	0.395	2.73	41.3	35.6	2.09	27.6	0.01	0.01	0.09	169	208
198		7.68	7.66	34.013	26.549	151.1	0.441	2.73	40.7	40.5	2.17	29.3	0.01	0.00	0.04	199	207
200	ISL	7.65	7.63	34.013	26.553	150.7	0.444	2.71	40.4	40.8	2.18	29.4	0.01			201	
227		7.45	7.43	34.042	26.605	146.2	0.484	2.31	34.3	45.0	2.32	31.1	0.01			228	206
250	ISL	7.62	7.60	34.131	26.651	142.3	0.517	1.71	25.5	48.1	2.51	32.3	0.01			251	
266		7.74	7.71	34.193	26.682	139.7	0.540	1.31	19.6	50.2	2.64	33.1	0.01			268	205
300	ISL	7.39	7.36	34.204	26.742	134.4	0.587	1.15	17.1	55.9	2.76	34.7	0.00			302	
318		7.13	7.10	34.194	26.770	131.8	0.611	1.06	15.6	58.9	2.79	35.5	0.00			320	204
376		6.78	6.75	34.226	26.844	125.5	0.685	0.76	11.1	65.5	2.93	37.2	0.00			378	203
400	ISL	6.60	6.56	34.235	26.875	122.8	0.715	0.67	9.8	68.5	2.98	37.9	0.00			403	
437		6.32	6.28	34.248	26.923	118.6	0.760	0.55	8.0	73.2	3.06	39.0	0.01			440	202
500	ISL	5.95	5.91	34.280	26.996	112.2	0.832	0.40	5.7	80.4	3.15	40.3	0.00			503	
517		5.85	5.81	34.289	27.015	110.4	0.851	0.36	5.2	82.4	3.18	40.7	0.00			521	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 59.3 N	120 21.0 W	17/07/98	0616 UTC	722 m	320 15 kn			1011.4 mb	17.8 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	15.71	15.71	33.348	24.543	338.3	0.000	6.10	107.7	1.3	0.32	0.1	0.01	0.64	0.14	0	
2		15.71	15.71	33.348	24.543	338.3	0.007	6.10	107.7	1.3	0.32	0.1	0.01	0.64	0.14	2	220
7		15.51	15.51	33.384	24.615	331.6	0.024	6.17	108.5	1.3	0.32	0.1	0.02	0.78	0.19	7	219
10	ISL	15.37	15.37	33.396	24.656	327.8	0.033	6.17	108.2	1.4	0.33	0.2	0.02	0.81	0.20	10	
20		14.91	14.91	33.438	24.789	315.5	0.066	6.18	107.4	1.9	0.40	0.7	0.05	0.88	0.28	20	218
28		14.58	14.58	33.501	24.908	304.3	0.090	5.94	102.6	4.1	0.54	2.1	0.10	1.08	0.48	28	217
30	ISL	14.37	14.37	33.514	24.963	299.2	0.096	5.88	101.1	5.2	0.61	2.9	0.12	1.04	0.49	30	
38		13.51	13.50	33.571	25.185	278.2	0.119	5.58	94.3	10.1	0.92	6.8	0.26	0.88	0.51	38	216
49		12.98	12.97	33.668	25.367	261.2	0.149	5.03	84.1	14.9	1.17	11.1	0.55	0.25	0.40	49	215
50	ISL	12.93	12.92	33.671	25.379	260.0	0.152	4.98	83.2	15.0	1.18	11.4	0.55	0.25	0.41	50	
59		12.37	12.36	33.661	25.481	250.6	0.175	4.49	74.1	15.8	1.28	13.9	0.58	0.22	0.50	59	214
68		11.44	11.43	33.607	25.613	238.1	0.197	4.04	65.4	16.2	1.39	16.0	0.30	0.22	0.47	68	213
75	ISL	10.97	10.96	33.608	25.699	230.1	0.213	3.83	61.4	16.9	1.46	17.3	0.18	0.20	0.39	75	
83		10.56	10.55	33.640	25.796	220.9	0.231	3.69	58.6	18.2	1.52	18.5	0.11	0.17	0.28	83	212
99		9.79	9.78	33.763	26.024	199.6	0.265	3.54	55.3	21.9	1.64	20.9	0.03	0.08	0.13	99	211
100	ISL	9.76	9.75	33.768	26.032	198.8	0.267	3.53	55.1	22.1	1.65	21.0	0.03	0.08	0.13	100	
119		9.44	9.43	33.844	26.145	188.4	0.304	3.27	50.7	25.2	1.78	23.0	0.01	0.04	0.13	120	210
125	ISL	9.33	9.32	33.866	26.180	185.2	0.315	3.22	49.8	26.1	1.81	23.5	0.01	0.04	0.13	126	
140		9.07	9.05	33.916	26.261	177.7	0.342	3.09	47.6	28.4	1.88	24.7	0.01	0.04	0.12	141	209
150	ISL	8.94	8.92	33.942	26.302	174.0	0.360	2.99	45.9	29.8	1.93	25.4	0.01	0.04	0.12	151	
169		8.72	8.70	33.983	26.369	168.0	0.392	2.78	42.5	32.5	2.03	26.7	0.01	0.03	0.12	170	208
198		8.38	8.36	34.044	26.469	158.9	0.439	2.49	37.8	36.9	2.17	28.3	0.01	0.02	0.09	199	207
200	ISL	8.35	8.33	34.045	26.475	158.4	0.443	2.49	37.7	37.1	2.17	28.4	0.01			201	
227		8.02	8.00	34.057	26.534	153.1	0.485	2.44	36.7	40.1	2.24	29.4	0.01			228	206
250	ISL	8.02	7.99	34.128	26.590	148.3	0.519	1.89	28.4	44.1	2.42	30.8	0.00			251	
269		8.03	8.00	34.187	26.635	144.4	0.547	1.40	21.1	47.7	2.58	32.1	0.00			271	205
300	ISL	7.63	7.60	34.201	26.705	138.0	0.591	1.22	18.2	53.1	2.70	33.8	0.00			302	
316		7.33	7.30	34.188	26.738	135.0	0.613	1.13	16.7	56.1	2.74	34.7	0.00			318	204
373		5.92	5.89	34.079	26.839	125.2	0.687	1.21	17.3	68.9	2.85	38.4	0.00			375	203
400	ISL	5.64	5.61	34.090	26.882	121.2	0.720	1.04	14.8	74.0	2.93	39.7	0.00			403	
435		5.46	5.42	34.130	26.936	116.4	0.762	0.75	10.6	79.8	3.04	40.9	0.00			438	202
500	ISL	5.25	5.21	34.213	27.027	108.4	0.835	0.44	6.2	88.1	3.17	42.1	0.00			503	
515		5.20	5.16	34.232	27.048	106.5	0.851	0.37	5.2	90.0	3.20	42.4	0.00			519	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 39.4 N	121 1.7 W	17/07/98	1224 UTC	3790 m	320 18 kn			1010.6 mb	16.2 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	14.93	14.93	33.102	24.525	340.0	0.000	6.04	104.8	3.0	0.34	0.1	0.01	1.06	0.26	0	
1		14.93	14.93	33.102	24.525	340.0	0.003	6.04	104.8	3.0	0.34	0.1	0.01	1.06	0.26	1	220
10		14.91	14.91	33.099	24.527	340.1	0.034	6.05	104.9	2.0	0.33	0.1	0.02	1.00	0.22	10	219
20		14.50	14.50	33.046	24.574	335.9	0.068	5.98	102.8	2.6	0.35	0.1	0.01	0.56	0.24	20	218
30		14.32	14.32	33.098	24.652	328.7	0.101	6.06	103.8	2.3	0.37	0.3	0.03	1.01	0.55	30	217
40		13.80	13.79	33.021	24.701	324.3	0.134	5.81	98.5	3.5	0.44	0.5	0.14	0.49	0.36	40	216
50		13.69	13.68	33.134	24.811	314.1	0.166	5.97	101.0	2.9	0.45	1.0	0.10	0.97	0.61	50	215
60		13.23	13.22	33.144	24.912	304.8	0.197	5.79	97.0	3.4	0.55	2.3	0.23	0.85	0.64	60	214
70		13.10	13.09	33.290	25.051	291.8	0.226	5.78	96.7	4.5	0.63	3.1	0.13	1.35	1.21	70	213
75	ISL	12.85	12.84	33.359	25.154	282.1	0.241	5.48	91.2	5.9	0.71	4.9	0.10	1.07	0.99	75	
84		12.26	12.25	33.460	25.347	264.0	0.265	4.83	79.5	8.9	0.89	8.8	0.07	0.36	0.40	84	212
100		11.27	11.26	33.528	25.583	241.7	0.306	4.23	68.2	13.7	1.25	14.4	0.08	0.14	0.21	100	211
119		10.53	10.52	33.615	25.783	223.0	0.350	3.94	62.5	17.1	1.42	17.3	0.03	0.07	0.13	120	210
125	ISL	10.25	10.24	33.661	25.867	215.1	0.363	3.80	59.9	18.7	1.50	18.5	0.02	0.05	0.11	126	
138		9.69	9.67	33.763	26.041	198.8	0.390	3.55	55.3	22.1	1.65	21.0	0.01	0.02	0.08	139	209
150	ISL	9.36	9.34	33.831	26.148	188.7	0.413	3.58	55.4	24.0	1.67	22.0	0.00	0.02	0.06	151	
169		8.99	8.97	33.907	26.267	177.7	0.448	3.63	55.8	26.4	1.70	22.7	0.00	0.01	0.04	170	208
199		8.46	8.44	33.976	26.404	165.1	0.499	3.52	53.5	31.0	1.81	24.5	0.00	0.01	0.04	200	207
200	ISL	8.44	8.42	33.977	26.408	164.8	0.501	3.51	53.3	31.2	1.82	24.6	0.00			201	
228		7.92	7.90	33.994	26.499	156.4	0.546	3.21	48.2	36.4	1.98	27.0	0.00			229	206
250	ISL	7.58	7.56	34.000	26.553	151.4	0.580	2.93	43.6	39.9	2.11	28.7	0.00			251	
268		7.37	7.34	34.007	26.589	148.3	0.607	2.68	39.7	42.7	2.22	29.9	0.00			270	205
300	ISL	7.25	7.22	34.039	26.631	144.7	0.654	2.23	32.9	47.7	2.38	31.8	0.00			302	
318		7.22	7.19	34.062	26.654	142.9	0.680	1.98	29.2	50.6	2.47	32.8	0.00			320	204
377		6.79	6.76	34.142	26.776	131.9	0.761	1.21	17.7	60.9	2.76	36.7	0.00			379	203
400	ISL	6.56	6.52	34.159	26.821	127.9	0.791	1.00	14.5	65.0	2.86	37.6	0.00			403	
437		6.16	6.12	34.177	26.887	121.8	0.837	0.75	10.8	71.6	2.99	38.9	0.00			440	202
500	ISL	5.51	5.47	34.183	26.973	113.8	0.911	0.56	7.9	83.0	3.12	41.2	0.00			503	
521		5.29	5.25	34.186	27.001	111.1	0.935	0.50	7.1	86.8	3.16	42.0	0.00			525	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 19.7 N	121 43.0 W	17/07/98	1845 UTC	4077 m	340 20 kn	340 08 05	1	1014.0 mb	19.0 C	17.7 C	31m	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	16.61	16.61	32.980	24.056	384.7	0.000	5.72	102.6	2.2	0.26	0.1	0.00	0.12	0.02	0	
1	A	16.61	16.61	32.980	24.056	384.7	0.004	5.72	102.6	2.2	0.26	0.1	0.00	0.12	0.02	1	222
2		16.61	16.61	32.980	24.056	384.8	0.008									2	223
3		16.61	16.61	32.981	24.057	384.7	0.012									3	224
10	ISL	16.60	16.60	32.982	24.060	384.6	0.038	5.72	102.5	2.2	0.25	0.1	0.00	0.12	0.02	10	
12		16.60	16.60	32.982	24.060	384.7	0.046	5.72	102.5	2.2	0.25	0.1	0.00	0.12	0.02	12	221
20	ISL	16.49	16.49	32.983	24.087	382.4	0.077	5.73	102.5	2.2	0.25	0.1	0.00	0.13	0.03	20	
24	A	16.43	16.43	32.984	24.101	381.1	0.092	5.74	102.5	2.2	0.25	0.1	0.00	0.14	0.04	24	220
30	ISL	16.02	16.02	32.973	24.186	373.2	0.115	5.81	103.0	2.3	0.26	0.1	0.00	0.15	0.05	30	
34		15.72	15.71	32.971	24.252	367.1	0.130	5.86	103.2	2.3	0.27	0.1	0.00	0.16	0.05	34	219
45	A	15.15	15.14	33.031	24.424	351.0	0.169	5.94	103.5	2.4	0.29	0.1	0.00	0.17	0.06	45	218
50	ISL	15.14	15.13	33.122	24.496	344.2	0.186	5.94	103.5	2.3	0.28	0.1	0.00	0.18	0.07	50	
55		15.13	15.12	33.201	24.560	338.4	0.203	5.94	103.5	2.2	0.27	0.1	0.00	0.20	0.08	55	217
65	A	15.39	15.38	33.381	24.642	330.9	0.237	5.85	102.6	2.1	0.27	0.1	0.00	0.22	0.12	65	216
75	ISL	15.47	15.46	33.449	24.677	327.9	0.270	5.80	101.9	2.3	0.25	0.1	0.00	0.23	0.14	75	
76		15.48	15.47	33.455	24.679	327.7	0.273	5.79	101.8	2.3	0.25	0.1	0.00	0.23	0.14	76	215
85	A	15.36	15.35	33.508	24.747	321.5	0.302	5.69	99.8	2.5	0.27	0.1	0.01	0.30	0.22	85	214
97		14.82	14.81	33.590	24.928	304.6	0.340	5.44	94.4	3.4	0.35	0.8	0.22	0.26	0.24	97	213
100	ISL	14.63	14.62	33.596	24.973	300.3	0.349	5.37	92.9	3.8	0.39	1.4	0.21	0.24	0.24	100	
107		14.09	14.07	33.596	25.087	289.6	0.370	5.21	89.1	4.8	0.51	3.3	0.20	0.20	0.25	107	212
118	A	13.05	13.03	33.570	25.279	271.4	0.401	4.98	83.4	6.8	0.70	6.4	0.04	0.17	0.19	118	211
125	ISL	12.27	12.25	33.570	25.431	257.0	0.419	4.82	79.4	8.5	0.85	8.7	0.03	0.13	0.17	126	
127		12.05	12.03	33.574	25.476	252.7	0.424	4.77	78.2	9.1	0.89	9.4	0.03	0.12	0.16	128	210
140		10.99	10.97	33.663	25.740	227.7	0.455	4.48	71.8	13.2	1.13	13.4	0.01	0.08	0.14	141	209
150	ISL	10.35	10.33	33.711	25.889	213.6	0.477	4.23	66.9	16.4	1.30	16.1	0.01	0.05	0.10	151	
166		9.57	9.55	33.775	26.070	196.5	0.510	3.86	60.0	21.3	1.54	19.9	0.01	0.02	0.05	167	208
193		8.72	8.70	33.907	26.310	174.1	0.560	3.41	52.1	28.6	1.82	24.3	0.00	0.00	0.04	194	207
200	ISL	8.61	8.59	33.925	26.341	171.2	0.572	3.32	50.6	29.8	1.87	25.0	0.00			201	
229		8.28	8.26	33.969	26.426	163.5	0.621	2.98	45.1	33.8	2.01	26.9	0.01			230	206
250	ISL	7.96	7.93	33.998	26.497	157.0	0.655	2.76	41.4	37.5	2.13	28.4	0.01			251	
269		7.68	7.65	34.019	26.554	151.8	0.684	2.59	38.6	40.9	2.22	29.6	0.00			270	205
300	ISL	7.34	7.31	34.031	26.612	146.6	0.730	2.40	35.5	45.0	2.32	31.0	0.00			302	
317		7.18	7.15	34.033	26.637	144.5	0.755	2.29	33.8	47.2	2.37	31.7	0.00			319	204
373		6.57	6.54	34.059	26.740	135.1	0.833	1.71	24.9	57.4	2.63	35.1	0.00			375	203
400	ISL	6.31	6.27	34.080	26.791	130.4	0.869	1.39	20.1	62.9	2.76	36.8	0.00			402	
433		6.02	5.98	34.111	26.853	124.8	0.911	1.03	14.8	69.5	2.91	38.6	0.00			436	202
500	ISL	5.64	5.60	34.192	26.964	114.8	0.991	0.61	8.7	80.3	3.10	40.6	0.00			503	
519		5.53	5.49	34.215	26.996	111.9	1.013	0.49	7.0	83.4	3.15	41.2	0.00			522	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 59.6 N	122 23.9 W	18/07/98	0135 UTC	4159 m	330 19 kn	300 07 06	1	1013.1 mb	18.0 C	16.9 C		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	17.73	17.73	33.140	23.914	398.2	0.000	5.59	102.5	1.5	0.23	0.0	0.00	0.10	0.02	0	
1		17.73	17.73	33.140	23.914	398.2	0.004	5.59	102.5	1.5	0.23	0.0	0.00	0.10	0.02	1	220
10	ISL	17.74	17.74	33.144	23.916	398.4	0.040	5.60	102.7	1.6	0.23	0.0	0.00	0.11	0.02	10	
15		17.75	17.75	33.147	23.916	398.6	0.060	5.61	102.9	1.6	0.23	0.0	0.00	0.11	0.02	15	219
20	ISL	17.75	17.75	33.156	23.923	398.1	0.080	5.60	102.8	1.6	0.23	0.0	0.00	0.11	0.02	20	
30		17.76	17.75	33.174	23.934	397.3	0.119	5.59	102.6	1.6	0.23	0.0	0.00	0.10	0.03	30	218
45		16.59	16.58	33.342	24.340	359.1	0.176	5.86	105.2	1.8	0.24	0.0	0.00	0.14	0.04	45	217
50	ISL	16.21	16.20	33.360	24.441	349.6	0.194	5.88	104.8	1.8	0.25	0.0	0.00	0.15	0.04	50	
61		15.56	15.55	33.378	24.602	334.6	0.232	5.91	104.0	1.9	0.27	0.0	0.00	0.16	0.06	61	216
75		15.37	15.36	33.418	24.675	328.1	0.278	5.84	102.4	1.9	0.27	0.0	0.00	0.18	0.10	75	215
83		15.43	15.42	33.485	24.714	324.6	0.304	5.79	101.7	2.0	0.26	0.0	0.00	0.18	0.12	83	214
96		15.68	15.67	33.673	24.803	316.5	0.346	5.72	101.1	2.3	0.22	0.0	0.00	0.26	0.17	96	213
100	ISL	15.60	15.58	33.687	24.832	313.9	0.358	5.70	100.6	2.3	0.22	0.0	0.01	0.31	0.22	100	
104		15.51	15.49	33.717	24.875	309.9	0.371	5.66	99.7	2.4	0.22	0.0	0.02	0.35	0.27	104	212
114		14.43	14.41	33.680	25.081	290.4	0.401	5.40	93.1	3.6	0.38	1.5	0.24	0.26	0.28	114	211
125	ISL	13.13	13.11	33.605	25.290	270.6	0.432	5.08	85.2	6.2	0.65	5.7	0.05	0.17	0.20	126	
126		13.02	13.00	33.599	25.308	268.9	0.434	5.05	84.5	6.5	0.68	6.1	0.03	0.16	0.19	127	210
140		12.01	11.99	33.592	25.498	251.0	0.471	4.75	77.8	9.2	0.91	9.6	0.02	0.13	0.18	141	209
150	ISL	11.20	11.18	33.632	25.678	233.9	0.495	4.52	72.8	12.1	1.09	12.6	0.01	0.09	0.13	151	
162		10.32	10.30	33.700	25.886	214.1	0.522	4.26	67.3	15.8	1.30	16.0	0.01	0.04	0.07	163	208
194		9.26	9.24	33.819	26.156	188.9	0.586	3.75	57.9	23.4	1.64	21.4	0.01	0.01	0.04	195	207
200	ISL	9.11	9.09	33.842	26.198	185.0	0.598	3.67	56.5	24.7	1.69	22.2	0.01			201	
226		8.57	8.55	33.933	26.354	170.4	0.644	3.36	51.1	29.7	1.86	24.8	0.00			227	206
250	ISL	8.25	8.22	33.986	26.444	162.2	0.684	3.12	47.2	33.5	1.98	26.3	0.00			251	
265		8.07	8.04	34.007	26.488	158.2	0.708	2.97	44.7	35.8	2.05	27.1	0.00			266	205
300	ISL	7.52	7.49	34.033	26.589	149.0	0.761	2.54	37.8	42.7	2.25	29.9	0.00			302	
317		7.25	7.22	34.039	26.632	145.0	0.786	2.33	34.4	46.3	2.35	31.3	0.00			319	204
378		6.48	6.45	34.066	26.758	133.4	0.871	1.63	23.7	59.1	2.67	35.5	0.01			380	203
400	ISL	6.28	6.24	34.086	26.799	129.6	0.900	1.37	19.8	63.5	2.78	36.8	0.01			402	
435		6.02	5.98	34.120	26.860	124.2	0.945	0.99	14.2	70.0	2.93	38.6	0.01			438	202
500	ISL	5.63	5.59	34.170	26.948	116.3	1.023	0.64	9.1	79.3	3.08	40.5	0.01			503	
512		5.56	5.52	34.180	26.964	114.8	1.037	0.58	8.2	81.0	3.11	40.9	0.01			515	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 39.6 N	123 5.6 W	18/07/98	0844 UTC	4132 m	340 17 kn			1014.1 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	18.45	18.45	33.544	24.047	385.5	0.000	5.47	102.0	1.8	0.22	0.1	0.00	0.09	0.02	0	
2		18.45	18.45	33.544	24.048	385.6	0.008	5.47	102.0	1.8	0.22	0.1	0.00	0.09	0.02	2	220
10	ISL	18.46	18.46	33.540	24.042	386.4	0.039	5.47	102.0	1.8	0.22	0.0	0.00	0.10	0.02	10	
15		18.46	18.46	33.539	24.042	386.6	0.058	5.47	102.0	1.8	0.22	0.0	0.00	0.10	0.02	15	219
20	ISL	18.46	18.46	33.545	24.047	386.3	0.077	5.47	102.0	1.8	0.22	0.0	0.00	0.10	0.02	20	
30		18.45	18.44	33.556	24.058	385.6	0.116	5.46	101.8	1.8	0.22	0.0	0.00	0.09	0.02	30	218
45		18.27	18.26	33.649	24.174	375.0	0.173	5.51	102.4	1.9	0.23	0.0	0.00	0.09	0.02	45	217
50	ISL	17.62	17.61	33.585	24.284	364.7	0.191	5.63	103.3	1.9	0.23	0.0	0.00	0.10	0.02	50	
60		16.26	16.25	33.452	24.501	344.2	0.227	5.87	104.8	2.0	0.24	0.0	0.00	0.13	0.04	60	216
75		15.65	15.64	33.434	24.625	332.8	0.278	5.84	103.0	2.1	0.25	0.1	0.00	0.16	0.07	75	215
85		15.42	15.41	33.424	24.669	328.9	0.311	5.80	101.8	2.1	0.26	0.1	0.00	0.16	0.11	85	214
95		15.36	15.35	33.494	24.736	322.8	0.343	5.70	100.0	2.3	0.26	0.0	0.00	0.23	0.21	95	213
100	ISL	15.36	15.34	33.525	24.760	320.7	0.359	5.66	99.3	2.4	0.26	0.0	0.01	0.31	0.26	100	
103		15.36	15.34	33.548	24.778	319.1	0.369	5.63	98.8	2.5	0.26	0.1	0.02	0.35	0.28	103	212
114		15.14	15.12	33.660	24.913	306.6	0.403	5.44	95.1	3.1	0.32	0.6	0.20	0.33	0.30	114	211
124		14.10	14.08	33.641	25.121	286.9	0.433	5.15	88.1	4.8	0.52	3.7	0.03	0.21	0.22	125	210
125	ISL	13.97	13.95	33.636	25.144	284.7	0.436	5.12	87.4	5.0	0.54	4.1	0.03	0.20	0.21	126	
140		12.12	12.10	33.587	25.473	253.4	0.476	4.69	77.0	9.2	0.91	9.6	0.01	0.11	0.15	141	209
150	ISL	11.26	11.24	33.603	25.645	237.0	0.501	4.39	70.8	12.4	1.13	13.0	0.00	0.07	0.11	151	
163		10.44	10.42	33.652	25.828	219.7	0.530	4.05	64.1	16.5	1.37	16.8	0.00	0.04	0.07	164	208
195		9.27	9.25	33.809	26.146	189.8	0.596	3.67	56.7	23.8	1.67	21.7	0.00	0.01	0.04	196	207
200	ISL	9.15	9.13	33.832	26.183	186.3	0.605	3.58	55.2	24.9	1.71	22.4	0.00			201	
231		8.62	8.60	33.947	26.357	170.2	0.661	3.07	46.8	31.1	1.95	25.8	0.00			232	206
250	ISL	8.43	8.40	33.987	26.418	164.8	0.692	2.86	43.4	33.6	2.04	27.0	0.00			251	
268		8.25	8.22	34.010	26.463	160.7	0.722	2.71	41.0	35.9	2.11	27.9	0.00			269	205
300	ISL	7.66	7.63	34.023	26.561	151.7	0.772	2.52	37.6	41.4	2.24	29.8	0.00			302	
318		7.31	7.28	34.026	26.613	146.8	0.799	2.40	35.5	45.0	2.32	31.0	0.00			320	204
378		6.51	6.48	34.070	26.757	133.5	0.883	1.56	22.7	58.5	2.68	35.6	0.00			380	203
400	ISL	6.31	6.27	34.092	26.800	129.5	0.912	1.30	18.8	63.1	2.79	36.9	0.00			402	
438		6.05	6.01	34.131	26.865	123.8	0.960	0.94	13.5	70.0	2.94	38.8	0.00			441	202
500	ISL	5.77	5.73	34.177	26.936	117.5	1.035	0.64	9.1	77.2	3.08	40.2	0.00			503	
515		5.70	5.66	34.188	26.954	116.0	1.052	0.57	8.1	79.0	3.11	40.6	0.00			518	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 19.5 N	123 44.3 W	18/07/98	1818 UTC	4036 m	360 17 kn	360 08 05	2	1015.0 mb	19.1 c	17.3 c	23m	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	18.53	18.53	33.392	23.911	398.5	0.000	5.47	102.0	2.3	0.21	0.1	0.00	0.13	0.03	0	
1	A	18.53	18.53	33.392	23.911	398.5	0.004	5.47	102.0	2.3	0.21	0.1	0.00	0.13	0.03	1	220
1		18.53	18.53	33.394	23.913	398.4	0.004									1	221
1		18.53	18.53	33.398	23.916	398.1	0.004									1	222
10	ISL	18.53	18.53	33.393	23.913	398.7	0.040	5.48	102.2	2.0	0.21	0.1	0.00	0.12	0.02	10	
19	A	18.52	18.52	33.394	23.916	398.7	0.076	5.49	102.4	1.7	0.21	0.1	0.00	0.12	0.02	19	219
20	ISL	18.49	18.49	33.399	23.928	397.7	0.080	5.49	102.3	1.7	0.21	0.1	0.00	0.12	0.02	20	
30	ISL	18.20	18.19	33.507	24.082	383.3	0.119	5.54	102.8	2.0	0.22	0.1	0.00	0.14	0.04	30	
31	A	18.17	18.16	33.523	24.102	381.4	0.123	5.54	102.7	2.0	0.22	0.1	0.00	0.14	0.04	31	218
47	A	15.90	15.89	33.312	24.474	346.3	0.181	5.93	105.0	2.1	0.25	0.1	0.00	0.17	0.06	47	217
50	ISL	15.69	15.68	33.300	24.512	342.8	0.191	5.92	104.4	2.1	0.26	0.1	0.00	0.18	0.07	50	
62	A	15.31	15.30	33.308	24.603	334.5	0.232	5.89	103.1	2.0	0.27	0.1	0.00	0.20	0.09	62	216
75		15.38	15.37	33.408	24.665	329.0	0.275	5.81	101.9	2.2	0.27	0.1	0.00	0.22	0.11	75	215
86	A	15.44	15.43	33.490	24.715	324.6	0.311	5.73	100.7	2.1	0.26	0.1	0.00	0.23	0.19	86	214
95		15.40	15.39	33.512	24.741	322.3	0.340	5.71	100.2	2.5	0.26	0.1	0.00	0.26	0.23	95	213
100	ISL	15.34	15.32	33.544	24.779	318.9	0.356	5.64	98.9	2.6	0.28	0.2	0.07	0.34	0.32	100	
104		15.24	15.22	33.576	24.826	314.5	0.369	5.55	97.2	2.7	0.30	0.2	0.13	0.38	0.37	104	212
113		14.78	14.76	33.656	24.988	299.3	0.396	5.30	92.0	3.7	0.41	2.0	0.09	0.26	0.26	113	211
125		12.96	12.94	33.580	25.305	269.1	0.430	4.89	81.7	7.2	0.75	7.1	0.02	0.16	0.19	126	210
139		11.57	11.55	33.555	25.551	245.8	0.466	4.54	73.6	11.1	1.06	11.8	0.01	0.10	0.15	140	209
150	ISL	10.91	10.89	33.606	25.710	230.8	0.493	4.37	69.9	13.5	1.19	14.1	0.01	0.06	0.11	151	
164		10.36	10.34	33.692	25.873	215.4	0.524	4.19	66.3	16.2	1.31	16.2	0.01	0.03	0.07	165	208
193		9.48	9.46	33.772	26.083	195.8	0.584	3.74	58.0	22.3	1.60	20.7	0.00	0.01	0.04	194	207
200	ISL	9.28	9.26	33.802	26.139	190.6	0.597	3.62	55.9	24.0	1.67	21.8	0.00			201	
228		8.57	8.55	33.920	26.344	171.4	0.648	3.16	48.1	30.6	1.93	25.5	0.00			229	206
250	ISL	8.15	8.12	33.980	26.454	161.1	0.684	2.88	43.4	35.2	2.08	27.6	0.00			251	
270		7.84	7.81	34.016	26.529	154.3	0.716	2.67	40.0	39.0	2.18	29.0	0.00			271	205
300	ISL	7.47	7.44	34.040	26.601	147.7	0.761	2.37	35.2	44.4	2.31	30.7	0.00			302	
318		7.29	7.26	34.046	26.632	145.0	0.787	2.21	32.7	47.3	2.38	31.6	0.00			320	204
377		6.82	6.78	34.077	26.721	137.1	0.871	1.74	25.5	55.5	2.59	34.4	0.00			379	203
400	ISL	6.59	6.55	34.087	26.760	133.6	0.902	1.51	22.0	59.4	2.69	35.7	0.00			402	
434		6.26	6.22	34.107	26.819	128.2	0.946	1.18	17.0	65.5	2.83	37.5	0.00			437	202
500	ISL	5.85	5.81	34.183	26.931	118.1	1.028	0.67	9.6	76.4	3.06	39.8	0.00			503	
516		5.75	5.71	34.202	26.959	115.6	1.046	0.55	7.8	79.0	3.11	40.4	0.00			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.0 N	117 46.0 W	15/07/98	2342 UTC	66 m	290 02 kn	290 01 07	1	1010.8 mb	19.4 c	18.5 c	13m	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	19.87	19.87	33.293	23.495	438.2	0.000	5.78	110.5	1.9	0.21	0.0	0.00	0.38	0.19	0	
1		19.98	19.98	33.296	23.469	440.7	0.004									1	209
1		20.01	20.01	33.288	23.455	442.1	0.004									1	210
1		19.87	19.87	33.293	23.495	438.2	0.004	5.78	110.5	1.9	0.21	0.0	0.00	0.38	0.19	1	208
4		18.77	18.77	33.260	23.751	413.9	0.017	5.81	108.8	1.7	0.21	0.0	0.00	0.36	0.13	4	207
9		17.34	17.34	33.240	24.085	382.3	0.037	6.10	111.1	2.4	0.25	0.0	0.00	0.79	0.19	9	206
10	ISL	17.03	17.03	33.228	24.149	376.2	0.041	6.10	110.4	2.4	0.25	0.0	0.00	0.79	0.19	10	
19		14.72	14.72	33.172	24.625	331.1	0.073	6.13	106.0	2.5	0.31	0.0	0.00	0.77	0.22	19	205
20	ISL	14.57	14.57	33.182	24.664	327.3	0.076	6.09	105.0	2.6	0.33	0.1	0.01	0.82	0.26	20	
30		13.74	13.74	33.298	24.927	302.6	0.107	5.66	96.0	4.1	0.49	1.7	0.11	1.20	0.57	30	204
39		13.53	13.52	33.328	24.993	296.5	0.134	5.46	92.2	5.1	0.59	2.8	0.17	0.82	0.49	39	203
49		12.82	12.81	33.437	25.220	275.2	0.163	4.93	82.1	7.3	0.82	6.8	0.23	0.44	0.44	49	202
50	ISL	12.75	12.74	33.448	25.242	273.1	0.166	4.86	80.8	7.8	0.86	7.3	0.23	0.42	0.43	50	
60		12.04	12.03	33.559	25.464	252.1	0.192	4.19	68.7	12.4	1.21	12.4	0.22	0.25	0.37	60	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 25.2 N	117 54.3 W	15/07/98	1854 UTC	617 m	250 05 kn	250 01 05	4	1012.2 mb	19.8 c	18.6 c	25m	8/8	

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	19.55	19.55	33.315	23.595	428.7	0.000	5.51	104.7	2.4	0.26	0.0	0.00	0.22	0.05	0	
1		19.58	19.58	33.314	23.586	429.5	0.004									1	223
2	A	19.55	19.55	33.315	23.595	428.8	0.009	5.51	104.7	2.4	0.26	0.0	0.00	0.22	0.05	2	222
2		19.57	19.57	33.314	23.589	429.3	0.009									2	224
10		17.98	17.98	33.354	24.018	388.7	0.041	5.61	103.5	2.6	0.27	0.0	0.00	0.18	0.04	10	221
18	A	16.84	16.84	33.381	24.311	361.0	0.071	5.75	103.8	2.8	0.27	0.0	0.00	0.22	0.07	18	220
20	ISL	16.62	16.62	33.359	24.345	357.8	0.078	5.79	104.1	2.7	0.27	0.0	0.00	0.22	0.08	20	
30	ISL	15.65	15.65	33.250	24.482	345.0	0.114	5.93	104.5	2.3	0.28	0.0	0.00	0.24	0.11	30	
35	A	15.26	15.25	33.193	24.525	341.1	0.131	5.96	104.2	2.1	0.29	0.0	0.00	0.25	0.12	35	219
44		14.54	14.53	33.226	24.705	324.1	0.161	5.85	100.8	2.3	0.32	0.0	0.00	0.56	0.43	44	218
50	ISL	14.27	14.26	33.228	24.764	318.7	0.180	5.83	99.9	2.5	0.35	0.1	0.02	0.83	0.60	50	
53	A	14.15	14.14	33.234	24.794	315.9	0.190	5.82	99.5	2.6	0.36	0.2	0.05	0.90	0.65	53	217
60		13.78	13.77	33.296	24.918	304.2	0.211	5.48	93.0	4.1	0.51	2.5	0.18	0.66	0.61	60	216
67	A	13.57	13.56	33.428	25.063	290.6	0.232	5.23	88.4	5.3	0.61	4.5	0.09	0.43	0.43	67	215
75	ISL	12.95	12.94	33.458	25.211	276.7	0.255	5.02	83.8	6.8	0.74	6.7	0.05	0.29	0.34	75	
76		12.87	12.86	33.459	25.228	275.2	0.257	5.00	83.3	7.0	0.76	6.9	0.05	0.28	0.33	76	214
85		12.38	12.37	33.541	25.386	260.2	0.282	4.84	79.9	8.2	0.86	8.6	0.04	0.22	0.26	85	213
94	A	11.48	11.47	33.588	25.592	240.8	0.304	4.51	73.0	11.8	1.09	12.4	0.02	0.14	0.16	94	212
100	ISL	11.20	11.19	33.601	25.653	235.1	0.318	4.40	70.8	12.9	1.16	13.5	0.02	0.12	0.14	100	
110		10.96	10.95	33.613	25.705	230.3	0.342	4.27	68.4	14.1	1.24	14.6	0.02	0.10	0.12	111	211
123		10.55	10.54	33.654	25.810	220.6	0.371	3.94	62.6	17.0	1.42	17.2	0.01	0.05	0.08	124	210
125	ISL	10.47	10.46	33.671	25.837	218.0	0.375	3.84	60.9	17.8	1.46	17.8	0.01	0.04	0.08	126	
143		9.81	9.79	33.837	26.079	195.3	0.413	3.02	47.2	24.9	1.84	22.9	0.01	0.01	0.05	144	209
150	ISL	9.63	9.61	33.867	26.132	190.3	0.426	2.96	46.1	26.3	1.90	23.8	0.01	0.01	0.05	151	
169		9.24	9.22	33.914	26.233	181.1	0.461	2.80	43.3	28.9	1.97	25.0	0.01	0.00	0.05	170	208
200		8.71	8.69	34.011	26.393	166.3	0.515	2.51	38.3	34.4	2.13	27.5	0.01	0.00	0.05	201	207
228		8.13	8.11	34.046	26.509	155.6	0.560	2.41	36.3	38.6	2.23	29.0	0.01			229	206
250	ISL	7.96	7.93	34.071	26.554	151.6	0.594	2.24	33.6	40.9	2.30	29.8	0.01			251	
268		7.89	7.86	34.093	26.582	149.3	0.621	2.06	30.9	42.8	2.37	30.5	0.01			270	205
300	ISL	7.69	7.66	34.146	26.653	143.0	0.668	1.64	24.5	47.9	2.53	32.2	0.00			302	
316		7.59	7.56	34.172	26.688	139.9	0.690	1.43	21.3	50.6	2.62	33.0	0.00			318	204
378		7.15	7.11	34.241	26.805	129.5	0.774	0.84	12.4	60.2	2.89	35.4	0.01			380	203
400	ISL	6.92	6.88	34.238	26.835	126.9	0.802	0.76	11.2	63.3	2.94	36.3	0.01			403	
437		6.55	6.51	34.232	26.880	122.8	0.848	0.68	9.9	68.1	3.00	37.8	0.00			440	202
500	ISL	6.30	6.25	34.290	26.959	116.1	0.924	0.44	6.4	74.6	3.12	39.0	0.01			503	
521		6.22	6.17	34.310	26.985	113.8	0.948	0.36	5.2	76.8	3.16	39.4	0.01			525	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 15.2 N	118 14.9 W	15/07/98	1449 UTC	297 m	330 02 kn	040 01 04	4	1011.7 mb	17.0 C	16.8 C	22m	8/8

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	18.44	18.44	33.300	23.863	403.1	0.000	5.56	103.5	2.6	0.27	0.1	0.00	0.19	0.05	0	
1	18.44	18.44	33.300	23.864	403.1	0.004	5.56	103.5	2.6	0.27	0.1	0.00	0.19	0.05	1	217
10 ISL	17.75	17.75	33.333	24.058	384.9	0.039	5.62	103.2	2.7	0.27	0.0	0.00	0.17	0.05	10	
15	17.15	17.15	33.358	24.220	369.5	0.058	5.67	103.0	2.8	0.27	0.0	0.00	0.16	0.05	15	216
20 ISL	16.69	16.69	33.363	24.332	359.0	0.077	5.72	103.0	2.9	0.28	0.0	0.00	0.18	0.07	20	
30	15.83	15.83	33.361	24.527	340.7	0.112	5.81	102.8	3.1	0.29	0.0	0.00	0.25	0.10	30	215
46	14.75	14.74	33.345	24.752	319.7	0.164	5.77	99.9	2.4	0.31	0.0	0.00	0.49	0.40	46	214
50 ISL	14.45	14.44	33.379	24.843	311.2	0.177	5.67	97.6	2.9	0.35	0.5	0.12	0.71	0.54	50	
55	14.00	13.99	33.411	24.962	300.0	0.192	5.49	93.6	3.9	0.44	1.7	0.23	0.89	0.66	55	213
64	12.85	12.84	33.355	25.151	282.2	0.218	5.08	84.6	7.2	0.78	6.9	0.07	0.41	0.39	64	212
75	12.09	12.08	33.462	25.380	260.5	0.248	4.53	74.3	10.9	1.08	11.6	0.02	0.19	0.21	75	211
84	11.68	11.67	33.559	25.532	246.2	0.271	4.08	66.3	13.3	1.26	14.3	0.01	0.12	0.17	84	210
95	11.08	11.07	33.646	25.709	229.6	0.297	3.70	59.4	16.8	1.45	17.2	0.01	0.05	0.09	95	209
100 ISL	10.84	10.83	33.667	25.769	224.0	0.309	3.66	58.5	17.8	1.49	18.0	0.01	0.03	0.08	100	
110	10.42	10.41	33.703	25.870	214.5	0.331	3.61	57.2	19.5	1.56	19.2	0.01	0.02	0.07	111	208
125	9.88	9.87	33.786	26.027	199.8	0.362	3.27	51.2	23.0	1.73	21.7	0.01	0.01	0.05	126	207
144	9.40	9.38	33.903	26.198	183.9	0.398	2.87	44.5	27.6	1.92	24.5	0.01	0.00	0.05	145	206
150 ISL	9.23	9.21	33.919	26.238	180.2	0.409	2.87	44.3	28.6	1.94	25.0	0.01	0.00	0.05	151	
170	8.75	8.73	33.953	26.341	170.7	0.444	2.87	43.9	31.2	2.00	26.1	0.01	0.00	0.04	171	205
198	8.56	8.54	34.032	26.432	162.5	0.491	2.46	37.5	35.2	2.16	27.8	0.01	0.00	0.03	199	204
200 ISL	8.54	8.52	34.037	26.439	161.8	0.494	2.43	37.0	35.6	2.17	27.9	0.01			201	
228	8.24	8.22	34.091	26.528	153.9	0.538	2.13	32.2	40.1	2.32	29.6	0.01			229	203
250 ISL	8.11	8.08	34.110	26.563	150.9	0.572	2.00	30.2	42.0	2.37	30.2	0.01			251	
268	8.06	8.03	34.118	26.577	149.9	0.599	1.92	28.9	42.9	2.40	30.5	0.01			270	202
294	8.02	7.99	34.133	26.595	148.6	0.638	1.81	27.2	44.1	2.47	30.9	0.01			296	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 11.2 N	118 23.6 W	15/07/98	1154 UTC	1184 m	290 04 kn			1011.7 mb	17.2 C	16.4 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	18.63	18.63	33.398	23.891	400.4	0.000	5.54	103.5	2.5	0.27	0.0	0.00	0.21	0.05	0	
1	18.63	18.63	33.398	23.891	400.4	0.004	5.54	103.5	2.5	0.27	0.0	0.00	0.21	0.05	1	220
10 ISL	18.23	18.23	33.401	23.993	391.1	0.040	5.59	103.7	2.5	0.27	0.0	0.00	0.19	0.05	10	
15	17.79	17.79	33.398	24.098	381.2	0.059	5.61	103.2	2.5	0.27	0.0	0.00	0.18	0.05	15	219
20 ISL	17.25	17.25	33.387	24.219	369.8	0.078	5.70	103.7	2.5	0.28	0.0	0.00	0.22	0.09	20	
30	15.94	15.94	33.347	24.492	344.1	0.113	5.87	104.1	2.8	0.30	0.0	0.00	0.44	0.18	30	218
45	13.77	13.76	33.230	24.869	308.5	0.162	5.80	98.4	3.8	0.45	0.9	0.11	1.22	0.72	45	217
50 ISL	13.36	13.35	33.289	24.998	296.3	0.177	5.46	91.8	5.5	0.63	3.9	0.11	0.92	0.60	50	
55	13.03	13.02	33.362	25.120	284.8	0.192	5.08	84.9	7.2	0.81	7.1	0.10	0.55	0.44	55	216
64	12.46	12.45	33.439	25.291	268.7	0.217	4.66	77.0	9.0	0.98	9.8	0.03	0.33	0.31	64	215
74	12.27	12.26	33.519	25.390	259.6	0.243	4.32	71.1	10.8	1.13	12.1	0.02	0.20	0.23	74	214
75 ISL	12.21	12.20	33.525	25.406	258.1	0.246	4.29	70.5	11.0	1.15	12.4	0.02	0.19	0.22	75	
84	11.53	11.52	33.581	25.577	241.9	0.268	3.99	64.7	13.5	1.30	14.8	0.01	0.10	0.15	84	213
94	10.83	10.82	33.668	25.771	223.6	0.292	3.58	57.2	17.1	1.50	17.9	0.01	0.03	0.08	94	212
100 ISL	10.39	10.38	33.702	25.874	213.9	0.305	3.51	55.6	19.1	1.57	19.2	0.01	0.02	0.07	100	
110	9.78	9.77	33.751	26.016	200.5	0.326	3.46	54.0	22.0	1.67	21.0	0.01	0.01	0.06	111	211
124	9.47	9.46	33.832	26.131	189.9	0.353	3.14	48.7	25.3	1.83	23.2	0.01	0.01	0.05	125	210
125 ISL	9.46	9.45	33.836	26.135	189.4	0.355	3.12	48.4	25.4	1.84	23.3	0.01	0.01	0.05	126	
144	9.35	9.33	33.897	26.201	183.6	0.390	2.82	43.7	28.0	1.95	24.7	0.01	0.00	0.05	145	209
150 ISL	9.23	9.21	33.925	26.243	179.7	0.401	2.74	42.3	29.2	1.99	25.3	0.01	0.00	0.05	151	
169	8.81	8.79	34.015	26.380	167.0	0.434	2.51	38.4	33.1	2.12	27.0	0.01	0.00	0.04	170	208
199	8.49	8.47	34.100	26.497	156.4	0.483	2.12	32.2	38.0	2.28	28.9	0.00	0.00	0.03	200	207
200 ISL	8.47	8.45	34.099	26.499	156.2	0.484	2.12	32.2	38.1	2.28	28.9	0.00			201	
227	7.94	7.92	34.069	26.555	151.1	0.526	2.21	33.2	41.3	2.31	29.9	0.01			228	206
250 ISL	7.78	7.76	34.106	26.608	146.4	0.560	1.91	28.6	44.9	2.43	31.1	0.01			251	
268	7.71	7.68	34.145	26.649	142.8	0.586	1.60	23.9	48.0	2.54	32.2	0.01			270	205
300 ISL	7.39	7.36	34.173	26.717	136.7	0.631	1.30	19.3	53.3	2.68	33.8	0.01			302	
318	7.22	7.19	34.186	26.751	133.7	0.655	1.17	17.3	56.0	2.74	34.6	0.01			320	204
377	7.15	7.11	34.258	26.819	128.3	0.732	0.74	10.9	60.8	2.91	35.7	0.00			379	203
400 ISL	7.03	6.99	34.266	26.842	126.3	0.761	0.66	9.7	62.8	2.95	36.2	0.00			403	
437	6.79	6.75	34.270	26.878	123.3	0.808	0.57	8.3	66.5	3.01	37.1	0.01			440	202
500 ISL	6.33	6.28	34.295	26.959	116.1	0.883	0.41	5.9	74.4	3.12	38.8	0.01			503	
520	6.19	6.14	34.303	26.984	113.9	0.906	0.36	5.2	76.9	3.15	39.3	0.01			524	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 55.4 N	118 56.2 W	15/07/98	0633 UTC	1705 m	290 08 kn			1013.1 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	17.88	17.88	33.428	24.099	380.6	0.000	5.64	103.9	2.7	0.27	0.1	0.00	0.21	0.04	0	
1	17.88	17.88	33.428	24.099	380.7	0.004	5.64	103.9	2.7	0.27	0.1	0.00	0.21	0.04	1	220
9	17.88	17.88	33.428	24.099	380.9	0.034	5.66	104.3	2.7	0.27	0.0	0.00	0.20	0.03	9	219
10 ISL	17.81	17.81	33.415	24.106	380.3	0.038	5.67	104.3	2.8	0.27	0.0	0.00	0.22	0.04	10	
19	17.21	17.21	33.473	24.295	362.6	0.072	5.83	106.1	3.7	0.28	0.0	0.00	0.36	0.11	19	218
20 ISL	16.95	16.95	33.468	24.352	357.1	0.075	5.89	106.6	3.8	0.28	0.0	0.00	0.53	0.17	20	
29	14.52	14.52	33.440	24.874	307.6	0.105	6.16	106.2	4.7	0.40	0.4	0.02	1.91	0.68	29	217
30 ISL	14.36	14.36	33.439	24.907	304.5	0.108	6.09	104.7	4.9	0.43	0.8	0.05	1.87	0.69	30	
39	13.28	13.27	33.445	25.134	283.1	0.135	5.24	88.1	7.3	0.77	6.0	0.23	1.53	0.82	39	216
49	12.24	12.23	33.519	25.395	258.4	0.162	4.47	73.5	10.9	1.09	11.7	0.05	0.39	0.42	49	215
50 ISL	12.15	12.14	33.528	25.419	256.2	0.164	4.40	72.3	11.4	1.12	12.2	0.05	0.36	0.38	50	
60	11.37	11.36	33.615	25.632	236.1	0.189	3.83	61.9	15.8	1.42	16.5	0.02	0.09	0.12	60	214
70	10.75	10.74	33.677	25.792	221.1	0.212	3.55	56.6	18.5	1.55	18.7	0.01	0.04	0.09	70	213
75 ISL	10.52	10.51	33.694	25.845	216.1	0.223	3.57	56.7	19.1	1.57	19.0	0.01	0.04	0.08	75	
83	10.23	10.22	33.717	25.913	209.8	0.240	3.59	56.6	19.8	1.58	19.4	0.02	0.03	0.07	83	212
99	9.83	9.82	33.787	26.036	198.4	0.272	3.27	51.2	23.2	1.74	21.9	0.01	0.02	0.06	99	211
100 ISL	9.81	9.80	33.794	26.044	197.6	0.274	3.24	50.7	23.5	1.75	22.1	0.01	0.02	0.06	100	
119	9.60	9.59	33.923	26.180	185.1	0.311	2.65	41.3	28.0	1.97	24.7	0.01	0.01	0.06	120	210
125 ISL	9.54	9.53	33.955	26.215	181.9	0.322	2.54	39.5	29.0	2.02	25.3	0.01	0.01	0.06	126	
138	9.40	9.38	34.013	26.284	175.6	0.345	2.36	36.6	30.9	2.10	26.2	0.01	0.01	0.06	139	209
150 ISL	9.26	9.24	34.049	26.335	171.0	0.366	2.24	34.7	32.4	2.16	26.9	0.01	0.01	0.05	151	
168	9.04	9.02	34.086	26.399	165.2	0.396	2.11	32.5	34.6	2.23	27.9	0.01	0.00	0.04	169	208
199	8.60	8.58	34.130	26.503	155.8	0.446	1.95	29.7	39.2	2.33	29.5	0.01	0.00	0.05	200	207
200 ISL	8.59	8.57	34.132	26.506	155.5	0.447	1.94	29.6	39.4	2.34	29.6	0.01			201	
227	8.25	8.23	34.172	26.590	148.0	0.488	1.62	24.5	43.7	2.48	31.0	0.01			228	206
250 ISL	7.93	7.90	34.171	26.637	143.8	0.522	1.52	22.8	46.9	2.55	32.0	0.01			251	
267	7.72	7.69	34.167	26.665	141.3	0.546	1.47	22.0	49.1	2.59	32.6	0.01			269	205
300 ISL	7.51	7.48	34.205	26.725	136.0	0.592	1.17	17.4	53.7	2.72	34.0	0.01			302	
316	7.43	7.40	34.225	26.753	133.7	0.613	1.01	15.0	55.9	2.79	34.6	0.01			318	204
375	6.85	6.81	34.243	26.848	125.2	0.690	0.73	10.7	64.3	2.94	36.7	0.00			377	203
400 ISL	6.66	6.62	34.257	26.885	121.9	0.721	0.62	9.0	67.6	3.00	37.0	0.00			403	
436	6.41	6.37	34.281	26.937	117.3	0.764	0.49	7.1	72.2	3.07	37.5	0.00			439	202
500 ISL	5.98	5.94	34.322	27.025	109.5	0.836	0.33	4.7	80.8	3.18	39.8	0.00			503	
522	5.83	5.78	34.337	27.056	106.7	0.860	0.28	4.0	83.7	3.22	40.6	0.00			526	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 38.9 N	119 29.1 W	15/07/98	0021 UTC	1317 m	320 13 kn	300 03 08	2	1013.3 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	16.56	16.56	33.496	24.464	345.8	0.000	5.98	107.5	1.7	0.32	0.0	0.00	0.63	0.09	0	
0	16.55	16.55	33.494	24.464	345.8	0.000									0	222
1	16.56	16.56	33.496	24.464	345.9	0.003	5.98	107.5	1.7	0.32	0.0	0.00	0.63	0.09	1	220
1	16.56	16.56	33.501	24.468	345.5	0.003									1	221
8	16.44	16.44	33.486	24.484	344.2	0.028	5.97	107.0	2.0	0.32	0.0	0.00	0.56	0.12	8	219
10 ISL	16.37	16.37	33.478	24.494	343.3	0.034	5.97	106.9	2.1	0.32	0.0	0.00	0.57	0.12	10	
19	16.06	16.06	33.447	24.541	339.1	0.065	5.93	105.5	2.7	0.34	0.0	0.00	0.70	0.17	19	218
20 ISL	16.04	16.04	33.447	24.546	338.7	0.069	5.93	105.4	2.7	0.34	0.0	0.00	0.72	0.19	20	
29	15.85	15.85	33.446	24.588	334.9	0.099	5.86	103.8	3.2	0.38	0.2	0.02	0.96	0.37	29	217
30 ISL	15.84	15.84	33.446	24.590	334.7	0.102	5.84	103.4	3.4	0.39	0.3	0.03	1.00	0.40	30	
39	15.45	15.44	33.421	24.658	328.5	0.132	5.62	98.7	5.1	0.52	1.9	0.19	1.15	0.60	39	216
50	13.49	13.48	33.301	24.981	298.0	0.167	5.22	88.0	6.4	0.71	5.1	0.36	0.60	0.46	50	215
59	12.52	12.51	33.407	25.255	272.1	0.192	4.81	79.6	8.2	0.89	8.7	0.15	0.41	0.60	59	214
69	11.85	11.84	33.479	25.438	254.8	0.219	4.55	74.2	10.6	1.05	11.3	0.12	0.20	0.32	69	213
75 ISL	11.47	11.46	33.527	25.546	244.7	0.234	4.37	70.7	12.3	1.16	13.0	0.09	0.14	0.23	75	
85	10.90	10.89	33.601	25.706	229.6	0.257	4.08	65.3	15.1	1.32	15.7	0.05	0.09	0.15	85	212
98	10.37	10.36	33.662	25.847	216.5	0.286	3.84	60.7	17.7	1.46	17.9	0.04	0.05	0.08	98	211
100 ISL	10.27	10.26	33.678	25.876	213.7	0.291	3.78	59.7	18.4	1.49	18.4	0.04	0.05	0.08	100	
119	9.54	9.53	33.836	26.122	190.6	0.329	3.19	49.6	25.2	1.81	22.8	0.03	0.02	0.08	120	210
125 ISL	9.50	9.49	33.876	26.160	187.1	0.340	3.02	46.9	26.6	1.88	23.6	0.03	0.02	0.08	126	
138	9.42	9.40	33.923	26.210	182.6	0.364	2.71	42.0	28.8	1.98	24.9	0.02	0.01	0.08	139	209
150 ISL	9.36	9.34	33.949	26.240	180.0	0.386	2.59	40.1	29.8	2.02	25.5	0.02	0.01	0.07	151	
168	9.23	9.21	33.978	26.284	176.1	0.418	2.49	38.5	31.2	2.07	26.1	0.02	0.01	0.06	169	208
198	8.79	8.77	34.077	26.432	162.6	0.469	2.08	31.8	36.5	2.26	28.5	0.05	0.00	0.06	199	207
200 ISL	8.73	8.71	34.075	26.440	161.9	0.472	2.11	32.3	36.7	2.26	28.5	0.05			201	
228	7.89	7.87	34.028	26.530	153.4	0.516	2.62	39.3	39.4	2.19	29.0	0.01			229	206
250 ISL	7.54	7.52	34.040	26.591	147.9	0.549	2.46	36.6	43.2	2.28	30.3	0.00			251	
268	7.37	7.34	34.060	26.631	144.3	0.576	2.18	32.3	46.6	2.39	31.6	0.00			270	205
300 ISL	7.11	7.08	34.081	26.684	139.7	0.621	1.85	27.2	51.3	2.52	33.2	0.00			302	
317	6.99	6.96	34.093	26.710	137.4	0.645	1.68	24.7	53.8	2.58	34.0	0.00			319	204
377	6.52	6.49	34.162	26.828	126.8	0.724	1.03	15.0	64.7	2.86	37.0	0.00			379	203
400 ISL	6.44	6.40	34.189	26.860	124.1	0.753	0.86	12.5	67.4	2.94	37.7	0.00			403	
435	6.33	6.29	34.227	26.905	120.3	0.796	0.66	9.6	71.1	3.03	38.4	0.00			438	202
500 ISL	5.95	5.91	34.275	26.992	112.6	0.871	0.46	6.6	79.2	3.13	39.8	0.00			503	
518	5.85	5.81	34.289	27.015	110.5	0.891	0.41	5.9	81.5	3.16	40.2	0.00			522	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 25.0 N	119 57.5 W	14/07/98	1849 UTC	893 m	310 10 kn	310 02 06	2	1015.0 mb	17.0 C	15.9 C	26m	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	15.36	15.36	33.033	24.378	354.0	0.000	5.89	103.1	2.2	0.30	0.0	0.00	0.29	0.06	0	
1		15.36	15.36	33.033	24.378	354.0	0.004									1	222
1		15.37	15.37	33.033	24.376	354.2	0.004									1	221
1	A	15.36	15.36	33.033	24.378	354.0	0.004	5.89	103.1	2.2	0.30	0.0	0.00	0.29	0.06	1	220
10		15.30	15.30	33.034	24.392	352.9	0.035	5.90	103.1	2.2	0.30	0.0	0.00	0.17	0.02	10	219
20	A	15.14	15.14	33.062	24.449	347.8	0.070	5.94	103.5	2.3	0.31	0.0	0.00	0.27	0.00	20	218
28		14.96	14.96	33.083	24.505	342.8	0.098	5.94	103.1	2.2	0.32	0.0	0.00	0.27	0.12	28	217
30	ISL	14.80	14.80	33.077	24.535	340.0	0.105	5.95	103.0	2.2	0.32	0.0	0.00	0.35	0.15	30	
37	A	14.25	14.24	33.053	24.633	330.8	0.128	5.96	102.0	2.1	0.34	0.1	0.02	0.61	0.26	37	216
46		14.02	14.01	33.065	24.690	325.6	0.158	5.90	100.5	2.4	0.38	0.3	0.07	0.57	0.45	46	215
50	ISL	13.91	13.90	33.066	24.714	323.5	0.171	5.87	99.7	2.6	0.40	0.5	0.12	0.55	0.42	50	
56	A	13.77	13.76	33.082	24.755	319.7	0.190	5.80	98.3	3.0	0.44	0.9	0.18	0.51	0.33	56	214
70	A	13.61	13.60	33.253	24.920	304.3	0.234	5.44	92.0	3.6	0.51	2.5	0.11	0.33	0.35	70	213
75	ISL	13.44	13.43	33.291	24.984	298.4	0.249	5.50	92.7	4.3	0.58	3.2	0.15	0.48	0.42	75	
84		13.05	13.04	33.348	25.106	286.9	0.275	5.56	92.9	6.0	0.72	4.8	0.23	0.75	0.52	84	212
97	A	12.42	12.41	33.440	25.301	268.7	0.311	4.97	82.0	8.8	0.94	8.5	0.20	0.58	0.35	97	211
100	ISL	12.21	12.20	33.468	25.363	262.8	0.319	4.84	79.5	9.7	0.99	9.6	0.17	0.50	0.31	100	
119		10.85	10.84	33.647	25.752	226.1	0.366	4.14	66.2	15.4	1.31	15.8	0.01	0.04	0.11	120	210
125	ISL	10.50	10.49	33.686	25.843	217.4	0.379	4.02	63.8	16.9	1.39	17.1	0.01	0.03	0.10	126	
138		9.90	9.88	33.752	25.997	202.9	0.406	3.81	59.7	19.9	1.53	19.3	0.01	0.02	0.08	139	209
150	ISL	9.64	9.62	33.795	26.074	195.8	0.430	3.57	55.6	22.2	1.65	21.0	0.01	0.01	0.09	151	
169		9.39	9.37	33.848	26.157	188.3	0.467	3.26	50.5	25.3	1.79	23.0	0.01	0.00	0.10	170	208
199		8.63	8.61	33.946	26.354	169.9	0.521	3.22	49.1	30.1	1.89	25.1	0.01	0.00	0.05	200	207
200	ISL	8.61	8.59	33.949	26.360	169.4	0.522	3.21	48.9	30.3	1.90	25.2	0.01			201	
229		8.10	8.08	34.007	26.483	158.0	0.570	2.89	43.5	36.1	2.08	27.5	0.00			230	206
250	ISL	7.71	7.69	34.016	26.547	152.1	0.602	2.75	41.1	39.9	2.18	28.9	0.00			251	
267		7.47	7.44	34.025	26.589	148.3	0.628	2.59	38.5	42.8	2.25	30.0	0.01			269	205
300	ISL	7.49	7.46	34.129	26.668	141.4	0.676	1.76	26.2	48.2	2.43	31.9	0.01			302	
317		7.50	7.47	34.175	26.703	138.4	0.699	1.34	19.9							319	204
377		6.77	6.74	34.144	26.781	131.5	0.780	1.22	17.8	60.4	2.78	35.9	0.01			379	203
400	ISL	6.41	6.37	34.121	26.810	128.7	0.810	1.18	17.1	64.3	2.83	37.1	0.01			403	
437		5.87	5.83	34.097	26.860	124.0	0.857	1.08	15.4	70.5	2.90	38.8	0.01			440	202
500	ISL	5.49	5.45	34.151	26.950	116.0	0.933	0.73	10.4	80.5	3.06	40.7	0.01			503	
522		5.36	5.32	34.170	26.980	113.2	0.958	0.61	8.6	84.0	3.12	41.3	0.01			526	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 5.0 N	120 38.5 W	14/07/98	1241 UTC	3816 m	340 17 kn			1014.2 mb	16.3 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	16.57	16.57	33.045	24.115	379.1	0.000	5.69	102.0	3.7	0.25	0.0	0.00	0.19	0.05	0	
1		16.57	16.57	33.045	24.115	379.1	0.004	5.69	102.0	3.7	0.25	0.0	0.00	0.19	0.05	1	220
10	ISL	16.58	16.58	33.043	24.112	379.7	0.038	5.69	102.0	3.0	0.25	0.0	0.00	0.19	0.04	10	
15		16.58	16.58	33.042	24.111	379.9	0.057	5.69	102.0	2.5	0.25	0.0	0.00	0.19	0.04	15	219
20	ISL	16.48	16.48	33.028	24.124	378.9	0.076	5.70	102.0	2.3	0.25	0.0	0.00	0.20	0.04	20	
30		16.19	16.19	32.999	24.168	375.0	0.114	5.73	101.9	2.1	0.26	0.0	0.00	0.24	0.05	30	218
45		15.62	15.61	32.992	24.291	363.7	0.169	5.86	103.0	2.2	0.28	0.0	0.00	0.31	0.11	45	217
50	ISL	15.51	15.50	32.997	24.319	361.2	0.187	5.86	102.8	2.4	0.28	0.0	0.00	0.33	0.15	50	
55		15.38	15.37	33.005	24.354	358.0	0.205	5.86	102.5	2.6	0.29	0.0	0.00	0.37	0.19	55	216
65		14.87	14.86	33.037	24.490	345.3	0.240	5.89	102.0	2.9	0.31	0.0	0.02	0.57	0.27	65	215
75		14.52	14.51	33.117	24.626	332.5	0.274	5.81	100.0	2.3	0.35	0.1	0.13	0.32	0.27	75	214
85		13.86	13.85	33.126	24.771	318.9	0.307	5.64	95.7	3.5	0.45	1.3	0.18	0.21	0.20	85	213
95		13.76	13.75	33.209	24.856	311.1	0.338	5.51	93.4	3.7	0.48	2.0	0.11	0.18	0.19	95	212
100	ISL	13.56	13.55	33.216	24.902	306.8	0.354	5.44	91.8	4.1	0.53	2.8	0.08	0.17	0.19	100	
110		13.13	13.11	33.229	24.999	297.8	0.384	5.29	88.5	5.2	0.65	4.7	0.04	0.14	0.17	110	211
124		12.82	12.80	33.350	25.154	283.4	0.425	5.06	84.2	7.3	0.77	6.8	0.07	0.09	0.12	125	210
125	ISL	12.76	12.74	33.358	25.172	281.7	0.427	5.02	83.4	7.6	0.79	7.1	0.07	0.09	0.12	126	
144		11.45	11.43	33.509	25.537	247.2	0.478	4.25	68.7	13.1	1.20	13.7	0.02	0.04	0.07	145	209
150	ISL	11.08	11.06	33.550	25.636	237.8	0.492	4.18	67.1	14.4	1.26	14.9	0.02	0.03	0.07	151	
169		10.13	10.11	33.678	25.901	212.8	0.535	3.99	62.8	18.4	1.43	17.9	0.02	0.02	0.08	170	208
199		9.45	9.43	33.894	26.184	186.4	0.595	2.84	44.1	28.2	1.92	24.4	0.01	0.00	0.06	200	207
200	ISL	9.44	9.42	33.901	26.191	185.8	0.597	2.81	43.6	28.5	1.93	24.5	0.01			201	
229		9.09	9.07	34.064	26.375	168.8	0.648	2.12	32.7	34.9	2.20	27.6	0.01			230	206
250	ISL	8.86	8.83	34.137	26.469	160.2	0.683	1.80	27.6	38.4	2.35	29.1	0.00			251	
268		8.65	8.62	34.175	26.532	154.5	0.711	1.62	24.7	41.1	2.44	30.1	0.00			269	205
300	ISL	8.21	8.18	34.190	26.611	147.3	0.759	1.45	21.9	45.9	2.53	31.5	0.00			302	
318		7.96	7.93	34.186	26.646	144.2	0.786	1.40	21.0	48.6	2.57	32.2	0.00			320	204
378		7.24	7.20	34.199	26.760	133.9	0.869	1.07	15.8	58.1	2.76	34.9	0.00			380	203
400	ISL	7.07	7.03	34.218	26.799	130.4	0.898	0.92	13.5	61.0	2.83	35.7	0.00			402	
437		6.82	6.78	34.249	26.858	125.3	0.945	0.68	10.0	65.7	2.95	37.0	0.00			440	202
500	ISL	6.28	6.24	34.259	26.937	118.1	1.022	0.51	7.4	74.2	3.06	38.9	0.00			503	
516		6.14	6.09	34.262	26.958	116.2	1.041	0.47	6.8	76.4	3.09	39.4	0.00			519	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 45.2 N	121 18.9 W	14/07/98	0627 UTC	3700 m	340 16 kn			1015.5 mb	16.9 C	16.0 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	17.32	17.32	33.145	24.016	388.5	0.000	5.66	103.0	1.7	0.21	0.0	0.00	0.13	0.11	0	
1	17.32	17.32	33.145	24.016	388.5	0.004	5.66	103.0	1.7	0.21	0.0	0.00	0.13	0.11	1	220
10 ISL	17.33	17.33	33.146	24.015	388.9	0.039	5.65	102.8	1.7	0.21	0.0	0.00	0.14	0.09	10	
15	17.33	17.33	33.147	24.016	389.0	0.058	5.65	102.8	1.7	0.21	0.0	0.00	0.14	0.08	15	219
20 ISL	17.33	17.33	33.146	24.016	389.2	0.078	5.65	102.8	1.7	0.21	0.0	0.00	0.14	0.08	20	
29	17.32	17.32	33.145	24.018	389.4	0.113	5.64	102.6	1.7	0.21	0.0	0.00	0.14	0.09	29	218
30 ISL	17.32	17.32	33.146	24.018	389.3	0.117	5.64	102.6	1.7	0.21	0.0	0.00	0.15	0.09	30	
44	17.14	17.13	33.204	24.106	381.4	0.171	5.71	103.6	1.7	0.21	0.0	0.00	0.27	0.03	44	217
50 ISL	16.91	16.90	33.298	24.232	369.6	0.193	5.77	104.2	1.8	0.22	0.0	0.00	0.27	0.05	50	
60	16.45	16.44	33.448	24.454	348.7	0.229	5.86	105.0	2.0	0.23	0.0	0.00	0.26	0.10	60	216
75	15.89	15.88	33.471	24.600	335.2	0.280	5.83	103.3	2.1	0.25	0.0	0.00	0.36	0.16	75	215
84	15.56	15.55	33.443	24.652	330.5	0.310	5.81	102.3	2.1	0.26	0.0	0.00	0.33	0.20	84	214
94	15.28	15.27	33.542	24.791	317.6	0.343	5.62	98.4	2.5	0.29	0.1	0.04	0.29	0.26	94	213
100 ISL	14.81	14.80	33.563	24.909	306.4	0.361	5.45	94.6	3.2	0.36	0.9	0.20	0.25	0.24	100	
104	14.38	14.36	33.566	25.003	297.5	0.374	5.32	91.5	3.9	0.44	1.9	0.27	0.22	0.22	104	212
114	12.88	12.86	33.558	25.303	269.0	0.402	4.91	81.9	7.1	0.75	7.1	0.02	0.08	0.23	114	211
123	12.14	12.12	33.569	25.455	254.7	0.425	4.78	78.5	8.9	0.88	9.3	0.02	0.07	0.22	124	210
125 ISL	12.02	12.00	33.575	25.482	252.1	0.431	4.76	78.0	9.2	0.90	9.7	0.02	0.07	0.21	126	
138	11.34	11.32	33.624	25.646	236.6	0.462	4.61	74.4	11.5	1.03	11.9	0.02	0.10	0.10	139	209
150 ISL	10.73	10.71	33.657	25.781	223.9	0.490	4.37	69.7	14.3	1.19	14.6	0.02	0.07	0.08	151	
164	10.13	10.11	33.697	25.916	211.3	0.520	4.07	64.0	17.7	1.39	17.6	0.01	0.03	0.05	165	208
193	9.40	9.38	33.823	26.136	190.8	0.579	3.58	55.5	23.5	1.67	21.6	0.00	0.00	0.03	194	207
200 ISL	9.25	9.23	33.848	26.180	186.7	0.592	3.51	54.2	24.7	1.71	22.3	0.00			201	
227	8.73	8.71	33.927	26.324	173.3	0.640	3.32	50.7	29.4	1.85	24.7	0.00			228	206
250 ISL	8.28	8.25	33.968	26.426	163.9	0.679	3.12	47.2	33.4	1.96	26.4	0.00			251	
267	7.96	7.93	33.989	26.490	158.0	0.707	2.95	44.3	36.5	2.05	27.6	0.00			268	205
300 ISL	7.43	7.40	34.017	26.589	148.9	0.757	2.59	38.4	43.0	2.23	30.0	0.00			302	
316	7.21	7.18	34.028	26.628	145.2	0.781	2.40	35.4	46.2	2.32	31.1	0.00			318	204
377	6.58	6.55	34.079	26.755	133.8	0.866	1.55	22.5	58.6	2.66	35.3	0.00			379	203
400 ISL	6.41	6.37	34.103	26.796	130.1	0.896	1.28	18.5	62.6	2.77	36.5	0.00			402	
437	6.16	6.12	34.140	26.858	124.5	0.943	0.93	13.4	68.7	2.91	38.1	0.00			440	202
500 ISL	5.72	5.68	34.187	26.950	116.2	1.019	0.63	9.0	78.7	3.06	40.1	0.00			503	
524	5.55	5.51	34.206	26.986	112.9	1.047	0.52	7.4	82.5	3.12	40.8	0.00			527	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 25.0 N	121 59.7 W	13/07/98	2334 UTC	3897 m	350 15 kn	350 06 08	2	1016.0 mb	18.1 C	17.1 C	27m	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	18.28	18.28	33.602	24.134	377.3	0.000	5.54	103.0	2.9	0.22	0.0	0.00	0.09	0.02	0	
2	18.28	18.28	33.602	24.134	377.3	0.008									2	221
2	18.27	18.27	33.602	24.136	377.1	0.008									2	222
2	18.28	18.28	33.602	24.134	377.3	0.008	5.54	103.0	2.9	0.22	0.0	0.00	0.09	0.02	2	220
10 ISL	18.26	18.26	33.603	24.140	377.0	0.038	5.52	102.6	2.4	0.22	0.0	0.00	0.09	0.02	10	
15	18.25	18.25	33.604	24.144	376.9	0.057	5.51	102.4	2.0	0.22	0.0	0.00	0.09	0.02	15	219
20 ISL	18.24	18.24	33.603	24.145	376.9	0.075	5.51	102.3	2.0	0.22	0.0	0.00	0.09	0.02	20	
29	18.22	18.22	33.602	24.150	376.8	0.109	5.52	102.5	2.1	0.22	0.0	0.00	0.10	0.03	29	218
30 ISL	18.20	18.19	33.607	24.159	376.0	0.113	5.53	102.6	2.1	0.22	0.0	0.00	0.10	0.03	30	
45	17.76	17.75	33.704	24.341	359.1	0.168	5.69	104.8	2.2	0.22	0.0	0.00	0.14	0.03	45	217
50 ISL	17.59	17.58	33.733	24.404	353.2	0.186	5.73	105.2	2.3	0.21	0.0	0.00	0.15	0.03	50	
60	17.25	17.24	33.777	24.520	342.5	0.221	5.77	105.2	2.5	0.19	0.0	0.00	0.17	0.04	60	216
75	16.82	16.81	33.780	24.624	333.1	0.271	5.68	102.7	2.8	0.20	0.0	0.00	0.23	0.06	75	215
84	16.55	16.54	33.740	24.656	330.3	0.301	5.70	102.5	2.2	0.20	0.0	0.00	0.26	0.08	84	214
94	16.08	16.07	33.665	24.707	325.7	0.334	5.73	102.1	2.5	0.22	0.0	0.00	0.28	0.13	94	213
100 ISL	15.92	15.90	33.638	24.723	324.4	0.354	5.72	101.5	2.5	0.23	0.0	0.00	0.30	0.17	100	
105	15.84	15.82	33.635	24.738	323.0	0.370	5.71	101.2	2.5	0.23	0.0	0.00	0.32	0.22	105	212
115	15.76	15.74	33.707	24.812	316.3	0.402	5.63	99.7	2.5	0.23	0.0	0.01	0.43	0.39	115	211
125	15.35	15.33	33.761	24.945	303.9	0.433	5.39	94.7	3.7	0.31	0.8	0.15	0.30	0.35	126	210
139	14.17	14.15	33.663	25.123	287.1	0.474	5.17	88.6	4.9	0.51	3.6	0.06	0.06	0.07	140	209
150 ISL	13.08	13.06	33.633	25.323	268.2	0.505	4.96	83.1	6.9	0.70	6.4	0.03	0.07	0.11	151	
164	11.72	11.70	33.644	25.593	242.5	0.540	4.66	75.9	10.5	0.95	10.5	0.01	0.09	0.15	165	208
196	9.52	9.50	33.764	26.071	197.1	0.611	3.84	59.6	21.7	1.56	20.2	0.00	0.01	0.03	197	207
200 ISL	9.38	9.36	33.786	26.111	193.3	0.619	3.74	57.9	22.8	1.61	21.0	0.00			201	
229	8.76	8.74	33.932	26.324	173.4	0.672	3.14	48.0	29.9	1.90	24.9	0.00			230	206
250 ISL	8.39	8.36	33.990	26.426	163.9	0.707	2.89	43.8	33.8	2.03	26.7	0.00			251	
269	8.09	8.06	34.020	26.495	157.6	0.738	2.74	41.3	36.9	2.11	27.9	0.00			270	205
300 ISL	7.62	7.59	34.033	26.574	150.4	0.785	2.54	37.8	42.0	2.23	29.7	0.00			302	
319	7.38	7.35	34.037	26.612	147.0	0.814	2.39	35.4	45.1	2.30	30.8	0.00			321	204
374	7.06	7.02	34.127	26.728	136.7	0.892	1.51	22.2	55.2	2.63	34.3	0.00			376	203
400 ISL	6.80	6.76	34.149	26.781	131.9	0.927	1.22	17.8	60.2	2.75	35.8	0.00			402	
436	6.42	6.38	34.171	26.849	125.6	0.973	0.92	13.3	66.7	2.89	37.6	0.00			439	202
500 ISL	6.02	5.98	34.222	26.941	117.4	1.051	0.59	8.5	75.5	3.05	39.5	0.00			503	
519	5.90	5.85	34.237	26.968	115.0	1.073	0.49	7.0	78.1	3.10	40.1	0.00			522	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 6.7 N	122 40.2 W	13/07/98	1835 UTC	3978 m	340 20 kn	350 06 05	1	1017.7 mb	19.0 C	17.1 C	23m	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	18.20	18.20	33.379	23.983	391.7	0.000	5.53	102.5	4.1	0.21	0.1	0.00	0.15	0.04	0	
1	A	18.20	18.20	33.379	23.983	391.7	0.004	5.53	102.5	4.1	0.21	0.1	0.00	0.15	0.04	1	220
1		18.20	18.20	33.377	23.982	391.8	0.004									1	222
2		18.20	18.20	33.375	23.980	392.0	0.008									2	221
10	ISL	18.20	18.20	33.377	23.982	392.1	0.039	5.52	102.3	3.4	0.20	0.1	0.00	0.14	0.03	10	
17	A	18.20	18.20	33.375	23.981	392.5	0.067	5.52	102.3	2.7	0.20	0.1	0.00	0.14	0.03	17	219
20	ISL	18.19	18.19	33.375	23.983	392.3	0.078	5.52	102.3	2.5	0.20	0.1	0.00	0.15	0.03	20	
30	A	18.16	18.15	33.376	23.992	391.9	0.118	5.52	102.2	2.1	0.20	0.1	0.00	0.17	0.03	30	218
49	A	17.74	17.73	33.770	24.396	354.0	0.189	5.70	105.0	2.5	0.21	0.1	0.00	0.19	0.04	49	217
50	ISL	17.71	17.70	33.778	24.410	352.7	0.192	5.70	104.9	2.6	0.21	0.1	0.00	0.19	0.04	50	
61	A	17.28	17.27	33.786	24.520	342.6	0.230	5.70	104.0	3.3	0.20	0.1	0.00	0.20	0.05	61	216
74		16.39	16.38	33.640	24.616	333.7	0.274	5.78	103.6	4.4	0.21	0.1	0.00	0.22	0.08	74	215
75	ISL	16.40	16.39	33.650	24.622	333.3	0.278	5.77	103.4	4.2	0.21	0.1	0.00	0.22	0.09	75	
86	A	16.48	16.47	33.765	24.692	326.9	0.314	5.63	101.1	2.4	0.21	0.1	0.00	0.21	0.17	86	214
94		16.26	16.25	33.773	24.749	321.8	0.340	5.62	100.5	3.1	0.22	0.1	0.00	0.25	0.20	94	213
100	ISL	16.12	16.10	33.810	24.810	316.2	0.359	5.61	100.1	3.2	0.21	0.0	0.00	0.29	0.25	100	
103		16.03	16.01	33.826	24.842	313.1	0.368	5.61	99.9	3.3	0.20	0.0	0.00	0.30	0.28	103	212
113		15.50	15.48	33.793	24.936	304.4	0.399	5.53	97.4	2.8	0.25	0.3	0.11	0.28	0.30	113	211
123		14.82	14.80	33.784	25.078	291.1	0.429	5.36	93.2	5.0	0.35	1.7	0.18	0.20	0.28	123	210
125	ISL	14.63	14.61	33.766	25.105	288.5	0.435	5.32	92.1	5.2	0.38	2.1	0.17	0.19	0.27	126	
138		13.25	13.23	33.641	25.295	270.6	0.471	5.04	84.7	6.3	0.63	5.5	0.04	0.14	0.19	139	209
150	ISL	12.02	12.00	33.606	25.507	250.4	0.502	4.69	76.8	9.8	0.91	9.8	0.03	0.10	0.14	151	
164		10.80	10.78	33.630	25.748	227.4	0.536	4.28	68.3	14.7	1.22	14.7	0.01	0.06	0.09	165	208
193		9.48	9.46	33.779	26.089	195.3	0.597	3.77	58.5	22.6	1.60	20.8	0.00	0.01	0.03	194	207
200	ISL	9.28	9.26	33.813	26.148	189.8	0.611	3.69	57.0	24.1	1.65	21.7	0.00			201	
238		8.47	8.45	33.956	26.387	167.4	0.679	3.24	49.2	31.6	1.89	25.4	0.00			239	206
250	ISL	8.20	8.17	33.982	26.449	161.7	0.698	3.05	46.0	34.5	1.99	26.8	0.00			251	
270		7.81	7.78	34.018	26.535	153.7	0.730	2.70	40.4	39.4	2.16	29.0	0.00			271	205
300	ISL	7.61	7.58	34.078	26.611	146.9	0.775	2.14	31.9	45.2	2.37	31.2	0.00			302	
318		7.55	7.52	34.106	26.642	144.2	0.801	1.84	27.4	48.3	2.47	32.2	0.00			320	204
377		6.91	6.87	34.128	26.749	134.6	0.883	1.39	20.4	57.6	2.69	35.2	0.00			379	203
400	ISL	6.60	6.56	34.122	26.786	131.2	0.914	1.26	18.3	61.5	2.76	36.4	0.00			402	
432		6.20	6.16	34.116	26.834	126.8	0.955	1.09	15.7	67.0	2.86	38.0	0.00			435	202
500	ISL	5.73	5.69	34.171	26.937	117.5	1.038	0.75	10.7	78.0	3.05	40.3	0.00			503	
521		5.59	5.55	34.188	26.967	114.7	1.063	0.64	9.1	81.4	3.11	41.0	0.00			524	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 45.2 N	123 20.0 W	13/07/98	0735 UTC		350 15 kn			1018.2 mb	18.1 C	16.5 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	18.02	18.02	33.397	24.041	386.1	0.000	5.54	102.3	1.5	0.22	0.0	0.00	0.13	0.03	0	
1		18.02	18.02	33.397	24.041	386.2	0.004	5.54	102.3	1.5	0.22	0.0	0.00	0.13	0.03	1	220
10	ISL	18.02	18.02	33.397	24.041	386.5	0.039	5.54	102.3	1.6	0.22	0.0	0.00	0.13	0.03	10	
15		18.02	18.02	33.397	24.042	386.6	0.058	5.54	102.3	1.6	0.22	0.0	0.00	0.13	0.03	15	219
20	ISL	18.00	18.00	33.399	24.048	386.2	0.077	5.54	102.3	1.6	0.22	0.0	0.00	0.13	0.03	20	
30		17.96	17.95	33.419	24.074	384.1	0.116	5.55	102.4	1.6	0.22	0.0	0.00	0.13	0.03	30	218
45		17.70	17.69	33.440	24.153	377.0	0.173	5.62	103.2	1.7	0.23	0.0	0.00	0.17	0.05	45	217
50	ISL	17.32	17.31	33.425	24.233	369.5	0.192	5.70	103.9	1.7	0.23	0.0	0.00	0.18	0.05	50	
60		16.49	16.48	33.404	24.411	352.8	0.228	5.86	105.1	1.8	0.24	0.0	0.00	0.22	0.06	60	216
75		15.75	15.74	33.456	24.620	333.3	0.279	5.84	103.2	1.8	0.25	0.0	0.00	0.30	0.12	75	215
84		15.65	15.64	33.489	24.668	329.0	0.309	5.80	102.3	1.9	0.24	0.0	0.00	0.34	0.18	84	214
95		15.59	15.58	33.502	24.692	327.1	0.345	5.76	101.5	2.0	0.25	0.0	0.00	0.33	0.22	95	213
100	ISL	15.68	15.66	33.596	24.744	322.3	0.361	5.70	100.7	2.1	0.24	0.0	0.00	0.34	0.25	100	
104		15.75	15.73	33.673	24.788	318.3	0.374	5.65	100.0	2.2	0.23	0.0	0.01	0.34	0.26	104	212
114		15.70	15.68	33.714	24.831	314.5	0.406	5.60	99.0	2.4	0.23	0.1	0.04	0.32	0.24	114	211
123		15.51	15.49	33.781	24.925	305.8	0.434	5.42	95.5	2.9	0.29	0.5	0.18	0.25	0.30	123	210
125	ISL	15.41	15.39	33.783	24.949	303.6	0.440	5.39	94.8	3.0	0.31	0.7	0.18	0.24	0.30	125	
138		14.41	14.39	33.749	25.139	285.6	0.478	5.16	88.9	4.4	0.47	3.3	0.08	0.21	0.22	139	209
150	ISL	12.93	12.91	33.665	25.377	263.0	0.511	4.82	80.5	7.7	0.76	7.6	0.04	0.15	0.16	151	
163		11.35	11.33	33.610	25.634	238.4	0.543	4.44	71.7	11.9	1.09	12.6	0.01	0.08	0.11	164	208
193		9.98	9.96	33.750	25.983	205.5	0.610	3.83	60.1	19.4	1.49	19.0	0.00	0.02	0.04	194	207
200	ISL	9.71	9.69	33.782	26.053	198.9	0.624	3.69	57.6	21.3	1.58	20.3	0.00			201	
226		8.92	8.90	33.890	26.266	178.9	0.673	3.24	49.7	27.9	1.84	24.4	0.00			227	206
250	ISL	8.57	8.54	33.966	26.380	168.4	0.715	3.03	46.1	31.5	1.95	26.0	0.00			251	
266		8.42	8.39	34.004	26.433	163.6	0.742	2.91	44.1	33.6	2.01	26.7	0.00			267	205
300	ISL	7.96	7.93	34.064	26.549	153.0	0.795	2.41	36.2	40.0	2.23	29.3	0.00			302	
317		7.71	7.68	34.081	26.599	148.4	0.821	2.15	32.1	43.6	2.34	30.7	0.00			319	204
375		6.73	6.70	34.075	26.732	136.1	0.903	1.64	23.9	56.4	2.60	34.9	0.00			377	203
400	ISL	6.47	6.43	34.093	26.780	131.6	0.937	1.40	20.3	61.3	2.71	36.3	0.00			402	
436		6.19	6.15	34.129	26.845	125.7	0.983	1.05	15.1	67.8	2.86	37.9	0.00			439	202
500	ISL	5.84	5.80	34.193	26.941	117.3	1.061			76.7	3.04	39.8	0.00			503	
522		5.72	5.68	34.215	26.973	114.4	1.086	0.95 U	13.5U	79.7	3.10	40.5	0.00			525	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 25.1 N	124 0.2 W	13/07/98	0035 UTC		340 13 kn	350 03 07	2	1018.1 mb	19.0 C	17.1 C	27m	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	18.09	18.09	33.479	24.086	381.8	0.000	5.55	102.7	1.9	0.22	0.1	0.00	0.11	0.03	0	
2	18.09	18.09	33.483	24.090	381.6	0.008									2	221
2	18.09	18.09	33.479	24.087	381.9	0.008	5.55	102.7	1.9	0.22	0.1	0.00	0.11	0.03	2	220
10 ISL	18.09	18.09	33.480	24.088	382.0	0.038	5.56	102.9	1.9	0.22	0.1	0.00	0.11	0.03	10	
13	18.09	18.09	33.480	24.088	382.1	0.050	5.56	102.9	1.9	0.22	0.1	0.00	0.11	0.03	13	219
20 ISL	18.09	18.09	33.496	24.100	381.2	0.076	5.56	102.9	1.9	0.22	0.1	0.00	0.12	0.03	20	
29	18.08	18.08	33.517	24.119	379.7	0.111	5.54	102.5	1.9	0.22	0.0	0.00	0.13	0.02	29	218
30 ISL	18.12	18.11	33.538	24.126	379.1	0.114	5.54	102.6	1.9	0.22	0.0	0.00	0.13	0.02	30	
45	18.58	18.57	33.886	24.279	365.1	0.170	5.49	102.8	2.0	0.19	0.0	0.00	0.12	0.03	45	217
50 ISL	18.48	18.47	33.970	24.368	356.8	0.188	5.55	103.8	2.0	0.18	0.0	0.00	0.14	0.04	50	
58	18.23	18.22	34.063	24.501	344.3	0.216	5.64	105.0	2.1	0.16	0.0	0.00	0.17	0.05	58	216
75 ISL	17.78	17.77	34.051	24.603	335.2	0.274	5.62	103.7	2.1	0.17	0.0	0.00	0.21	0.07	75	
76	17.76	17.75	34.048	24.606	335.0	0.277	5.62	103.7	2.1	0.17	0.0	0.00	0.21	0.07	76	215
86	17.56	17.55	34.084	24.682	328.1	0.311	5.58	102.6	2.2	0.17	0.0	0.00	0.29	0.12	86	214
95	17.40	17.38	34.107	24.739	323.0	0.340	5.57	102.1	2.2	0.16	0.0	0.00	0.31	0.14	95	213
100 ISL	17.34	17.32	34.125	24.767	320.4	0.356	5.55	101.6	2.2	0.16	0.0	0.00	0.30	0.17	100	
106	17.28	17.26	34.144	24.796	317.9	0.375	5.51	100.8	2.3	0.16	0.0	0.00	0.27	0.20	106	212
116	17.20	17.18	34.149	24.819	316.0	0.407	5.46	99.7	2.4	0.17	0.0	0.00	0.11 U	0.12 U	116	211
125	16.78	16.76	34.114	24.892	309.3	0.435	5.34	96.7	2.7	0.22	0.3	0.11	0.23	0.23	125	210
141	15.63	15.61	33.978	25.051	294.5	0.483	5.11	90.4	3.9	0.39	2.4	0.14	0.17	0.18	142	209
150 ISL	14.53	14.51	33.841	25.185	281.6	0.509	4.83	83.5	5.8	0.60	5.1	0.10	0.15	0.18	151	
165	12.74	12.72	33.667	25.417	259.6	0.550	4.34	72.2	9.6	0.97	10.0	0.01	0.12	0.17	166	208
194	11.40	11.38	33.748	25.733	229.8	0.621	3.93	63.6	14.7	1.27	15.0	0.00	0.04	0.07	195	207
200 ISL	11.06	11.04	33.758	25.802	223.2	0.634	3.89	62.5	15.9	1.33	16.0	0.00			201	
233	9.37	9.34	33.833	26.150	190.3	0.703	3.69	57.1	23.1	1.63	21.2	0.00			234	206
250 ISL	8.87	8.84	33.906	26.286	177.4	0.734	3.45	52.8	27.3	1.79	23.5	0.00			251	
268	8.48	8.45	33.978	26.404	166.5	0.765	3.17	48.2	31.8	1.94	25.7	0.00			269	205
300 ISL	7.84	7.81	34.021	26.533	154.4	0.816	2.82	42.2	38.5	2.13	28.5	0.00			302	
320	7.54	7.51	34.033	26.586	149.5	0.846	2.59	38.5	42.3	2.23	29.8	0.00			322	204
380	7.22	7.18	34.139	26.715	138.1	0.933	1.57	23.2	52.9	2.60	33.6	0.00			382	203
400 ISL	7.06	7.02	34.163	26.757	134.4	0.960	1.32	19.4	56.6	2.70	34.8	0.00			402	
440	6.73	6.69	34.198	26.829	127.8	1.012	0.93	13.6	63.5	2.87	36.8	0.00			443	202
500 ISL	6.29	6.25	34.222	26.907	121.0	1.087	0.67	9.7	71.1	3.02	38.6	0.00			503	
514	6.19	6.14	34.228	26.924	119.4	1.104	0.61	8.8	72.9	3.05	39.0	0.00			517	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 26.8

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 56.8 N	117 18.5 W	09/07/98	1825 UTC	71 m	290 08 kn	290 01 06	1	1013.5 mb	20.9 C	19.3 C	20m	6/8	CU

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	20.44	20.44	33.488	23.494	438.3	0.000	5.63	108.9	1.9	0.23	0.0	0.02	0.15	0.03	0	
1 B	20.44	20.44	33.488	23.494	438.3	0.004	5.63	108.9	1.9	0.23	0.0	0.02	0.15	0.03	1	209
1	20.61	20.61	33.515	23.470	440.7	0.004							0.23	0.07	1	210
8	17.45	17.45	33.132	23.976	392.6	0.034	5.83	106.4	2.2	0.28	0.0	0.02	0.17	0.05	8	208
10 ISL	16.54	16.54	33.091	24.158	375.3	0.041	5.94	106.4	2.3	0.30	0.0	0.02	0.18	0.06	10	
15 B	14.72	14.72	33.079	24.553	337.8	0.059	6.16	106.4	2.4	0.33	0.0	0.02	0.22	0.07	15	207
20 ISL	14.46	14.46	33.148	24.661	327.6	0.076	6.13	105.4	2.7	0.34	0.0	0.02	0.78	0.25	20	
22	14.35	14.35	33.153	24.688	325.1	0.082	6.12	105.0	2.8	0.34	0.0	0.02	0.96	0.32	22	206
28 B	13.88	13.88	33.381	24.963	299.1	0.101	5.61	95.4	5.6	0.57	2.6	0.13	0.48	0.34	28	205
30 ISL	13.56	13.56	33.427	25.064	289.6	0.107	5.33	90.1	6.6	0.68	4.5	0.14	0.52	0.33	30	
36	12.64	12.64	33.511	25.312	266.1	0.124	4.57	75.8	9.2	0.99	9.8	0.15	0.64	0.27	36	204
43 B	12.32	12.31	33.538	25.395	258.4	0.142	4.37	72.0	11.0	1.10	10.9	0.28	0.09 A	0.16 A	43	203
50 ISL	12.07	12.06	33.554	25.455	252.8	0.160	4.24	69.5	11.8	1.16	12.2	0.19	0.03	0.11	50	
53 B	11.98	11.97	33.559	25.476	250.9	0.167	4.19	68.6	12.1	1.18	12.7	0.14	0.00	0.10	53	202
65	11.74	11.73	33.589	25.544	244.6	0.197	3.94	64.2	14.1	1.28	14.0	0.17	0.00	0.03	65	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 9807 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.6 N	117 23.8 W	09/07/98	2042 UTC	611 m	280 08 kn	270 02 07	1	1013.2 mb	21.1 C	19.1 C	27m	6/8	CU

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	33.167	23.313	455.6	0.000	5.50	105.7	2.2	0.27	0.0	0.00	0.12	0.04	0	
1	20.20	20.20	33.167	23.313	455.6	0.005	5.50	105.7	2.2	0.27	0.0	0.00	0.12	0.04	1	220
10 ISL	17.95	17.95	33.123	23.849	404.8	0.043	5.72	105.4	2.2	0.27	0.0	0.00	0.12	0.03	10	
14	16.58	16.58	33.121	24.172	374.1	0.059	5.85	104.9	2.2	0.27	0.0	0.00	0.12	0.03	14	219
20 ISL	15.61	15.61	33.107	24.381	354.4	0.081	5.95	104.7	2.2	0.28	0.0	0.00	0.13	0.04	20	
30	14.70	14.70	33.108	24.580	335.7	0.115	6.02	104.0	2.3	0.31	0.0	0.00	0.16	0.06	30	218
44	14.43	14.42	33.250	24.747	320.1	0.161	5.86	100.7	2.6	0.34	0.0	0.00	0.32	0.27	44	217
50 ISL	14.15	14.14	33.265	24.818	313.6	0.180	5.76	98.5	3.0	0.38	0.8	0.05	0.74	0.49	50	
54	13.88	13.87	33.284	24.888	306.9	0.193	5.64	95.9	3.6	0.44	1.4	0.08	0.94	0.59	54	216
64	12.79	12.78	33.469	25.251	272.6	0.222	4.96	82.5	7.4	0.79	7.3	0.05	0.33	0.29	64	215
74	12.27	12.26	33.552	25.416	257.1	0.248	4.62	76.1	9.9	0.98	10.1	0.03	0.23	0.22	74	214
75 ISL	12.19	12.18	33.557	25.435	255.3	0.251	4.57	75.1	10.2	1.01	10.5	0.03	0.22	0.21	75	
83	11.59	11.58	33.590	25.573	242.3	0.270	4.18	67.9	12.9	1.20	13.4	0.02	0.14	0.16	83	213
94	11.07	11.06	33.625	25.695	230.9	0.297	3.99	64.1	15.1	1.33	15.5	0.01	0.09	0.12	94	212
100 ISL	10.92	10.91	33.639	25.733	227.4	0.310	3.93	62.9	15.9	1.35	16.1	0.01	0.07	0.11	100	
108	10.76	10.75	33.660	25.777	223.3	0.328	3.85	61.4	16.9	1.37	16.9	0.01	0.06	0.10	108	211
124	10.23	10.22	33.744	25.935	208.6	0.363	3.50	55.2	20.6	1.59	19.7	0.01	0.03	0.08	125	210
125 ISL	10.23	10.22	33.752	25.941	208.0	0.365	3.47	54.7	20.8	1.60	19.9	0.01	0.03	0.08	126	
143	10.26	10.24	33.848	26.011	201.8	0.402	2.89	45.6	24.2	1.80	22.2	0.00	0.03	0.09	144	209
150 ISL	10.21	10.19	33.871	26.038	199.4	0.416	2.79	44.0	24.9	1.84	22.7	0.00	0.03	0.09	151	
166	10.06	10.04	33.912	26.096	194.3	0.447	2.65	41.7	26.1	1.90	23.6	0.00	0.02	0.08	167	208
198	9.73	9.71	34.007	26.226	182.5	0.508	2.39	37.3	29.5	2.04	25.4	0.00	0.01	0.05	199	207
200 ISL	9.69	9.67	34.010	26.235	181.7	0.511	2.39	37.3	29.7	2.04	25.5	0.00			201	
227	9.24	9.22	34.043	26.335	172.6	0.559	2.37	36.6	32.2	2.10	26.6	0.00			228	206
250 ISL	9.16	9.13	34.108	26.399	167.0	0.598	2.07	32.0	34.9	2.22	27.7	0.00			251	
269	9.10	9.07	34.160	26.449	162.5	0.629	1.80	27.8	37.0	2.32	28.6	0.00			271	205
300 ISL	8.94	8.91	34.185	26.495	158.8	0.679	1.67	25.7	38.9	2.37	29.3	0.00			302	
320	8.79	8.76	34.191	26.524	156.4	0.711	1.62	24.8	40.4	2.40	29.8	0.00			322	204
377	8.08	8.04	34.242	26.673	142.8	0.796	1.15	17.3	49.8	2.65	32.4	0.02			379	203
400 ISL	7.65	7.61	34.254	26.745	136.0	0.828	0.93	13.9	55.5	2.77	34.0	0.02			403	
435	7.01	6.97	34.271	26.849	126.2	0.874	0.63	9.3	64.2	2.94	36.3	0.02			438	202
500 ISL	6.41	6.36	34.294	26.948	117.2	0.953	0.44	6.4	73.3	3.06	38.5	0.00			503	
519	6.24	6.19	34.302	26.977	114.6	0.975	0.38	5.5	75.9	3.10	39.2	0.00			522	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 50.7 N	117 32.0 W	09/07/98	2355 UTC	853 m	280 11 kn	280 02 08	1	1011.7 mb	19.9 C	18.6 C	32m	5/8	CU

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	19.52	19.52	33.160	23.484	439.3	0.000	5.54	105.1		0.25	0.0	0.00	0.10	0.02	0	
1	19.52	19.52	33.160	23.484	439.3	0.004	5.54	105.1	4.4 U	0.25	0.0	0.00	0.10	0.02	1	220
10 ISL	18.51	18.51	33.218	23.784	411.0	0.043	5.61	104.5		0.24	0.0	0.00	0.11	0.02	10	
15	17.71	17.71	33.276	24.024	388.3	0.063	5.68	104.2	6.2 U	0.23	0.0	0.00	0.11	0.02	15	219
20 ISL	17.25	17.25	33.338	24.182	373.4	0.082	5.76	104.8		0.23	0.0	0.00	0.11	0.02	20	
29	16.53	16.53	33.413	24.408	352.1	0.114	5.89	105.7	2.4	0.25	0.0	0.00	0.11	0.03	29	218
30 ISL	16.44	16.44	33.409	24.426	350.4	0.118	5.89	105.5	2.4	0.25	0.0	0.00	0.11	0.03	30	
44	15.35	15.34	33.308	24.594	334.8	0.166	5.91	103.5	2.6	0.28	0.0	0.00	0.13	0.05	44	217
50 ISL	15.07	15.06	33.285	24.637	330.8	0.186	5.90	102.8	3.0	0.29	0.0	0.00	0.18	0.09	50	
54	14.90	14.89	33.279	24.670	327.9	0.199	5.88	102.1	3.4	0.30	0.0	0.00	0.21	0.12	54	216
64	14.35	14.34	33.312	24.812	314.5	0.231	5.80	99.6	4.9	0.36	0.2	0.01	1.11	0.62	64	215
74	13.20	13.19	33.373	25.095	287.7	0.261	5.21	87.4	9.6	0.94	9.6	0.03	0.66	0.42	74	214
75 ISL	13.14	13.13	33.389	25.120	285.4	0.264	5.16	86.4	10.1	0.97	10.1	0.03	0.63	0.41	75	
84	12.54	12.53	33.541	25.356	263.2	0.289	4.64	76.8	9.5 U	0.95 U	9.6 U	0.03 U	0.38	0.32	84	213
94	11.24	11.23	33.639	25.675	232.8	0.314	3.85	62.0	19.0	1.36	15.8	0.02	0.17	0.19	94	212
100 ISL	11.12	11.11	33.716	25.757	225.2	0.327	3.50	56.3	22.3	1.48	17.5	0.02	0.14	0.20	100	
108	10.96	10.95	33.747	25.810	220.3	0.345	3.15	50.5	25.9	1.63	19.4	0.03	0.10	0.22	108	211
123	10.68	10.67	33.825	25.920	210.1	0.377	2.84	45.3	26.5	1.78	21.3	0.03	0.05	0.17	124	210
125 ISL	10.66	10.65	33.831	25.929	209.4	0.382	2.81	44.8	26.3	1.79	21.5	0.03	0.05	0.17	126	
143	10.49	10.47	33.868	25.987	204.2	0.419	2.67	42.4	24.5	1.86	22.5	0.03	0.04	0.16	144	209
150 ISL	10.37	10.35	33.883	26.020	201.2	0.433	2.65	42.0	24.8	1.88	22.9	0.03	0.03	0.14	151	
168	10.07	10.05	33.930	26.108	193.1	0.468	2.57	40.4	26.7	1.95	23.8	0.03	0.02	0.08	169	208
199	9.87	9.85	34.051	26.237	181.5	0.527	2.17	34.0	30.8	2.13	25.8	0.02	0.01	0.06	200	207
200 ISL	9.86	9.84	34.054	26.241	181.2	0.528	2.16	33.9	30.9	2.13	25.9	0.02			201	
229	9.58	9.55	34.129	26.347	171.7	0.580	1.92	29.9	33.5	2.24	27.3	0.02			230	206
250 ISL	9.28	9.25	34.155	26.416	165.4	0.615	1.82	28.2	35.9	2.30	28.2	0.03			251	
267	9.04	9.01	34.169	26.466	160.9	0.643	1.75	27.0	37.8	2.35	28.8	0.03			268	205
300 ISL	8.79	8.76	34.201	26.531	155.3	0.695	1.58	24.2	40.8	2.44	29.8	0.03			302	
316	8.67	8.64	34.213	26.559	152.8	0.719	1.49	22.8	42.5	2.48	30.3	0.03			318	204
376	7.74	7.70	34.238	26.719	138.1	0.807	1.10	16.5	52.8	2.72	33.4	0.02			378	203
400 ISL	7.45	7.41	34.254	26.774	133.1	0.839	0.92	13.7	57.0	2.81	34.6	0.02			402	
436	7.09	7.05	34.276	26.842	127.0	0.886	0.67	9.9	63.0	2.94	36.3	0.02			439	202
500 ISL	6.65	6.60	34.292	26.915	120.6	0.965	0.47	6.9	70.8	3.06	37.9	0.02			503	
521	6.51	6.46	34.298	26.938	118.6	0.990	0.41	6.0	73.4	3.10	38.4	0.02			524	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 40.9 N	117 52.3 W	10/07/98	0414 UTC	629 m	330 06 kn			1013.0 mb	20.5 C	18.6 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	18.05	18.05	33.204	23.886	400.9	0.000	5.65	104.3		0.28	0.0	0.00	0.10	0.02	0	
1	18.05	18.05	33.204	23.886	401.0	0.004	5.65	104.3	18.7 U	0.28	0.0	0.00	0.10	0.02	1	220
10 ISL	17.52	17.52	33.205	24.015	389.0	0.040	5.71	104.4		0.27	0.0	0.00	0.10	0.02	10	
14	17.21	17.21	33.210	24.093	381.7	0.055	5.74	104.3	25.9 U	0.27	0.0	0.00	0.10	0.02	14	219
20 ISL	17.10	17.10	33.235	24.138	377.5	0.078	5.74	104.1		0.27	0.0	0.00	0.11	0.02	20	
29	16.91	16.91	33.266	24.207	371.3	0.111	5.74	103.7	3.7	0.27	0.0	0.00	0.14	0.04	29	218
30 ISL	16.84	16.84	33.265	24.223	369.8	0.115	5.75	103.7	3.8	0.27	0.0	0.00	0.15	0.04	30	
45	15.60	15.59	33.233	24.481	345.6	0.169	5.94	104.5	5.4	0.28	0.0	0.00	0.25	0.10	45	217
50 ISL	15.26	15.25	33.218	24.544	339.7	0.186	5.96	104.2	5.3	0.28	0.0	0.00	0.26	0.11	50	
54	15.03	15.02	33.209	24.588	335.7	0.199	5.97	103.9	9.7 U	0.29	0.0	0.00	0.28	0.13	54	216
64	14.62	14.61	33.214	24.680	327.2	0.233	5.91	102.0	15.0 U	0.31	0.0	0.00	0.38	0.27	64	215
74	14.55	14.54	33.298	24.760	319.8	0.265	5.82	100.3	5.0	0.34	0.1	0.03	0.75	0.54	74	214
75 ISL	14.44	14.43	33.287	24.774	318.4	0.268	5.79	99.6	5.1	0.36	0.3	0.05	0.73	0.53	75	
84	13.52	13.51	33.234	24.924	304.3	0.296	5.50	92.8	6.6	0.55	2.8	0.20	0.40	0.33	84	213
94	13.66	13.65	33.509	25.109	287.1	0.326	5.16	87.4	32.7 U	0.62	4.6	0.10	0.27	0.28	94	212
100 ISL	13.33	13.32	33.496	25.165	281.8	0.343	5.06	85.2	10.2	0.71	6.1	0.06	0.23	0.24	100	
109	12.56	12.55	33.430	25.266	272.3	0.368	5.00	82.8	45.8 U	0.87	8.5	0.03	0.18	0.19	109	211
122	11.36	11.34	33.588	25.614	239.3	0.401	5.03	81.2	36.4 U	1.07	12.0	0.04	0.11	0.16	123	210
125 ISL	11.13	11.11	33.609	25.672	233.8	0.408	4.89	78.6	16.4	1.14	13.1	0.04	0.09	0.14	126	
144	10.02	10.00	33.705	25.941	208.5	0.450	3.75	58.9	21.7	1.56	19.4	0.01	0.02	0.05	145	209
150 ISL	9.82	9.80	33.745	26.005	202.4	0.462	3.53	55.2	23.3	1.65	20.7	0.01	0.02	0.05	151	
168	9.44	9.42	33.859	26.157	188.3	0.498	3.04	47.2	27.8	1.87	23.7	0.01	0.01	0.05	169	208
198	8.95	8.93	33.993	26.341	171.3	0.552	2.52	38.7	34.5	2.10	26.8	0.01	0.00	0.04	199	207
200 ISL	8.91	8.89	33.998	26.351	170.3	0.555	2.51	38.5	34.8	2.11	26.9	0.01			201	
227	8.40	8.38	34.039	26.463	160.1	0.600	2.43	36.9	37.8	2.20	28.3	0.00			228	206
250 ISL	8.06	8.03	34.069	26.538	153.2	0.636	2.24	33.7	41.4	2.30	29.6	0.00			251	
268	7.85	7.82	34.091	26.586	148.8	0.663	2.05	30.7	44.5	2.39	30.6	0.01			269	205
300 ISL	7.57	7.54	34.128	26.656	142.6	0.709	1.70	25.3	49.7	2.53	32.1	0.00			302	
316	7.44	7.41	34.145	26.688	139.8	0.732	1.52	22.6	52.4	2.60	32.8	0.00			318	204
375	6.86	6.82	34.210	26.821	127.8	0.811	0.91	13.3	64.0	2.88	36.0	0.00			377	203
400 ISL	6.68	6.64	34.225	26.857	124.6	0.842	0.75	10.9	67.1	2.95	36.8	0.00			402	
436	6.46	6.42	34.244	26.901	120.7	0.887	0.59	8.6	70.9	3.02	37.7	0.00			439	202
500 ISL	6.20	6.16	34.304	26.983	113.7	0.962	0.37	5.3	79.3	3.14	39.0	0.00			503	
512	6.15	6.10	34.315	26.998	112.4	0.975	0.33	4.8	80.9	3.16	39.2	0.00			515	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 31.0 N	118 12.8 W	10/07/98	0824 UTC	1653 m	300 10 kn			1013.5 mb	18.0 C	17.0 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	17.88	17.88	33.414	24.088	381.7	0.000	5.58	102.8	2.9	0.27	0.0	0.00	0.17	0.02	0	
1	17.88	17.88	33.414	24.088	381.7	0.004	5.58	102.8	2.9	0.27	0.0	0.00	0.17	0.02	1	220
10 ISL	17.76	17.76	33.422	24.124	378.6	0.038	5.61	103.1	2.9	0.27	0.0	0.00	0.19	0.01	10	
15	17.61	17.61	33.401	24.144	376.9	0.057	5.63	103.2	2.9	0.27	0.0	0.00	0.21	0.01	15	219
20 ISL	17.41	17.41	33.406	24.196	372.1	0.076	5.66	103.3	2.9	0.27	0.0	0.00	0.25	0.04	20	
30	17.01	17.01	33.417	24.299	362.5	0.112	5.71	103.4	2.9	0.28	0.0	0.00	0.33	0.09	30	218
45	13.79	13.78	33.191	24.835	311.8	0.163	5.68	96.3	3.5	0.46	1.1	0.21	0.93	0.54	45	217
50 ISL	13.47	13.46	33.232	24.932	302.7	0.178	5.48	92.4	4.5	0.56	2.7	0.27	0.69	0.46	50	
55	13.31	13.30	33.288	25.007	295.6	0.193	5.26	88.4	5.7	0.67	4.6	0.29	0.41	0.34	55	216
65	12.77	12.76	33.337	25.152	282.0	0.222	5.04	83.8	8.0	0.84	7.6	0.16	0.26	0.23	65	215
74	12.22	12.21	33.456	25.351	263.3	0.247	4.62	75.9	11.0	1.06	11.4	0.03	0.15	0.16	74	214
75 ISL	12.14	12.13	33.468	25.375	261.0	0.249	4.57	75.0	11.3	1.08	11.7	0.03	0.14	0.15	75	
84	11.52	11.51	33.563	25.565	243.1	0.272	4.15	67.3	13.4	1.25	14.2	0.02	0.09	0.11	84	213
94	11.25	11.24	33.620	25.659	234.4	0.296	3.77	60.8	15.8	1.41	16.6	0.02	0.04	0.09	94	212
100 ISL	10.91	10.90	33.668	25.757	225.1	0.310	3.55	56.8	18.0	1.52	18.3	0.02	0.02	0.08	100	
110	10.30	10.29	33.752	25.929	208.9	0.331	3.25	51.4	21.7	1.69	20.9	0.01	0.01	0.06	111	211
124	9.74	9.73	33.834	26.088	194.0	0.360	2.99	46.7	25.4	1.84	23.2	0.01	0.01	0.06	125	210
125 ISL	9.70	9.69	33.840	26.099	193.0	0.361	2.97	46.3	25.7	1.85	23.4	0.01	0.01	0.06	126	
144	9.17	9.15	33.944	26.267	177.3	0.397	2.67	41.2	30.5	2.02	25.8	0.01	0.01	0.05	145	209
150 ISL	9.10	9.08	33.962	26.292	175.0	0.407	2.60	40.1	31.3	2.05	26.2	0.01	0.01	0.05	151	
169	8.98	8.96	33.995	26.338	171.0	0.440	2.44	37.5	32.9	2.11	26.9	0.01	0.01	0.05	170	208
198	8.73	8.71	34.013	26.391	166.4	0.489	2.43	37.1	34.7	2.16	27.7	0.01	0.02	0.03	199	207
200 ISL	8.71	8.69	34.020	26.400	165.6	0.492	2.40	36.7	35.0	2.17	27.8	0.01			201	
228	8.45	8.43	34.109	26.510	155.6	0.537	1.95	29.6	40.0	2.34	29.7	0.01			229	206
250 ISL	8.09	8.06	34.115	26.569	150.2	0.571	1.92	28.9	43.0	2.40	30.7	0.01			251	
269	7.76	7.73	34.108	26.613	146.3	0.599	1.89	28.3	45.6	2.44	31.5	0.01			271	205
300 ISL	7.39	7.36	34.132	26.685	139.8	0.643	1.61	23.9	51.0	2.58	33.2	0.00			302	
319	7.21	7.18	34.153	26.727	136.0	0.670	1.39	20.5	54.5	2.67	34.2	0.00			321	204
379	6.82	6.78	34.236	26.847	125.4	0.748	0.75	11.0	64.5	2.94	36.9	0.00			381	203
400 ISL	6.72	6.68	34.253	26.874	123.1	0.774	0.63	9.2	66.8	2.99	37.4	0.00			403	
438	6.51	6.47	34.276	26.920	119.1	0.820	0.49	7.1	70.9	3.05	38.2	0.00			441	202
500 ISL	5.96	5.92	34.311	27.019	110.0	0.891	0.33	4.7	80.7	3.17	40.1	0.00			503	
521	5.78	5.74	34.324	27.052	107.0	0.914	0.28	4.0	84.0	3.21	40.8	0.00			525	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 20.6 N	118 33.4 W	10/07/98	1305 UTC	1394 m	290 16 kn	290 02 06	1	1013.3 mb	16.1 C	15.2 C	16m	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	17.42	17.42	33.435	24.215	369.6	0.000	5.63	102.8	3.0	0.28	0.0	0.00	0.25	0.05	0	
1		17.42	17.42	33.435	24.215	369.6	0.004	5.63	102.8	3.0	0.28	0.0	0.00	0.25	0.05	1	221
10		17.25	17.25	33.446	24.264	365.2	0.037	5.70	103.8	3.2	0.28	0.0	0.00	0.29	0.08	10	220
20		16.12	16.12	33.442	24.524	340.8	0.072	5.85	104.2	3.1	0.28	0.0	0.00	0.67	0.21	20	219
30		14.40	14.40	33.420	24.884	306.7	0.104	5.48	94.2	5.5	0.56	2.6	0.21	1.35	0.63	30	218
40		13.10	13.09	33.453	25.176	279.1	0.134	4.98	83.4	8.1	0.86	7.3	0.22	0.97	0.43	40	217
50		12.29	12.28	33.544	25.405	257.5	0.161	4.29	70.7	12.2	1.22	13.1	0.03	0.35	0.31	50	216
60		11.51	11.50	33.581	25.580	241.1	0.185	4.12	66.8	14.0	1.32	15.0	0.02	0.16	0.18	60	215
69		11.00	10.99	33.628	25.709	229.0	0.207	3.89	62.4	16.2	1.43	16.9	0.02	0.09	0.11	69	214
75	ISL	10.72	10.71	33.661	25.785	221.9	0.220	3.72	59.3	17.8	1.51	18.2	0.02	0.06	0.10	75	
85		10.35	10.34	33.717	25.893	211.8	0.242	3.43	54.2	20.4	1.64	20.1	0.01	0.03	0.08	85	213
100		9.96	9.95	33.802	26.026	199.4	0.273	3.06	48.0	23.8	1.80	22.3	0.01	0.01	0.06	100	212
120		9.39	9.38	33.894	26.192	184.0	0.311	2.79	43.2	28.2	1.95	24.7	0.01	0.01	0.07	121	211
125	ISL	9.29	9.28	33.916	26.225	180.9	0.320	2.71	41.9	29.3	1.99	25.2	0.01	0.01	0.07	126	
139		9.04	9.02	33.976	26.313	172.8	0.345	2.49	38.3	32.1	2.09	26.6	0.01	0.01	0.08	140	210
150	ISL	8.85	8.83	34.019	26.376	166.9	0.364	2.33	35.7	34.3	2.17	27.6	0.01	0.01	0.07	151	
169		8.57	8.55	34.076	26.465	158.8	0.395	2.10	32.0	37.7	2.29	28.9	0.01	0.01	0.06	170	209
199		8.26	8.24	34.100	26.531	153.0	0.441	1.98	30.0	40.9	2.35	29.9	0.01	0.00	0.05	200	208
200	ISL	8.24	8.22	34.099	26.534	152.8	0.443	1.99	30.1	41.0	2.35	29.9	0.01			201	
228		7.68	7.66	34.077	26.599	146.8	0.485	2.09	31.2	44.3	2.37	30.9	0.01			229	207
250	ISL	7.45	7.43	34.098	26.649	142.4	0.517	1.85	27.5	48.2	2.48	32.2	0.00			251	
268		7.32	7.29	34.123	26.687	139.0	0.542	1.58	23.4	51.5	2.58	33.3	0.00			270	206
300	ISL	7.06	7.03	34.145	26.741	134.2	0.586	1.31	19.3	56.2	2.69	34.7	0.00			302	
318		6.93	6.90	34.158	26.769	131.8	0.610	1.18	17.3	58.6	2.75	35.4	0.00			320	205
377		6.62	6.59	34.231	26.869	123.0	0.685	0.73	10.6	66.8	2.95	37.3	0.00			379	204
400	ISL	6.49	6.45	34.250	26.902	120.2	0.713	0.61	8.9	69.7	3.01	38.0	0.00			403	
438		6.27	6.23	34.276	26.951	115.9	0.758	0.46	6.7	74.2	3.10	39.0	0.00			441	203
500	ISL	5.97	5.93	34.315	27.021	109.9	0.828	0.33	4.7	80.2	3.17	40.0	0.00			503	
517		5.89	5.84	34.326	27.040	108.2	0.846	0.29	4.2	81.8	3.19	40.3	0.00			521	202
1041		3.83	3.75	34.497	27.411	75.5		0.57	7.8							1050	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 11.0 N	118 55.4 W	10/07/98	1847 UTC	1430 m	300 12 kn	310 03 05	1	1015.7 mb	17.2 C	15.9 C	13m	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	17.32	17.32	33.536	24.316	359.9	0.000	5.76	105.1	4.3	0.28	0.0	0.00	0.52	0.08	0	
0		17.32	17.32	33.542	24.321	359.5	0.000									0	222
1		17.32	17.32	33.537	24.317	359.9	0.004									1	223
1	A	17.32	17.32	33.536	24.316	359.9	0.004	5.76	105.1	4.3	0.28	0.0	0.00	0.52	0.08	1	221
10	A	17.27	17.27	33.545	24.335	358.4	0.036	5.77	105.2	4.3	0.27	0.0	0.00	0.56	0.10	10	220
18	A	16.74	16.74	33.606	24.507	342.3	0.064	5.86	105.7	4.9	0.25	0.0	0.00	1.00	0.17	18	219
20	ISL	16.39	16.39	33.599	24.583	335.2	0.071	5.88	105.4	5.0	0.25	0.0	0.00	1.16	0.19	20	
27	A	14.95	14.95	33.580 D	24.890	306.1	0.093	5.95	103.6	5.2	0.27	0.1	0.00	1.86	0.27	27	218
30	ISL	14.39	14.39	33.599	25.024	293.3	0.102	5.82	100.2	5.6	0.31	0.9	0.02	2.47	0.51	30	
36	A	13.30	13.30	33.652 D	25.290	268.1	0.119	5.55	93.4	7.9	0.52	2.6	0.07	3.12	0.87	36	217
42		12.19	12.18	33.694 D	25.540	244.5	0.134	4.41	72.6	12.9	1.01	9.9	0.27	1.85	0.60	42	216
49	A	11.08	11.07	33.710	25.758	223.8	0.151	3.43	55.1	19.1	1.57	18.8	0.03	0.17	0.23	49	215
50	ISL	10.99	10.98	33.714	25.777	222.0	0.153	3.41	54.7	19.3	1.58	19.0	0.03	0.16	0.22	50	
60		10.43	10.42	33.756	25.909	209.7	0.175	3.23	51.2	21.5	1.68	20.7	0.02	0.04	0.13	60	214
70		10.02	10.01	33.786	26.002	201.0	0.195	3.20	50.3	23.1	1.73	21.7	0.01	0.03	0.11	70	213
75	ISL	9.97	9.96	33.825	26.041	197.4	0.205	3.08	48.3	24.1	1.79	22.4	0.01	0.03	0.10	75	
85		9.87	9.86	33.877	26.099	192.1	0.225	2.80	43.9	26.1	1.91	23.6	0.01	0.02	0.09	85	212
100		9.79	9.78	33.898	26.129	189.6	0.253	2.65	41.4	27.5	1.95	24.3	0.01	0.01	0.09	101	211
120		9.54	9.53	33.977	26.232	180.2	0.290	2.37	36.9	30.3	2.09	25.9	0.01	0.01	0.10	121	210
125	ISL	9.51	9.50	33.994	26.251	178.5	0.299	2.30	35.8	30.9	2.11	26.2	0.01	0.01	0.10	126	
140		9.40	9.38	34.040	26.305	173.7	0.326	2.09	32.4	32.8	2.18	27.2	0.01	0.01	0.09	141	209
150	ISL	9.22	9.20	34.072	26.359	168.7	0.343	1.96	30.3	34.9	2.25	28.0	0.01	0.01	0.09	151	
168		8.85	8.83	34.125	26.460	159.4	0.372	1.76	27.0	38.8	2.36	29.3	0.01	0.00	0.09	169	208
199		8.44	8.42	34.179	26.566	149.8	0.420	1.57	23.9	42.7	2.47	30.7	0.01	0.00	0.05	200	207
200	ISL	8.43	8.41	34.179	26.568	149.6	0.422	1.57	23.9	42.8	2.47	30.7	0.01			201	
230		8.20	8.18	34.180	26.604	146.7	0.466	1.51	22.8	45.0	2.53	31.3	0.01			231	206
250	ISL	7.89	7.86	34.176	26.647	142.8	0.495	1.44	21.6	48.2	2.58	32.2	0.00			251	
268		7.61	7.58	34.178	26.689	138.9	0.520	1.35	20.1	51.5	2.64	33.2	0.00			270	205
300	ISL	7.34	7.31	34.214	26.756	133.0	0.564	1.05	15.6	56.5	2.77	34.6	0.00			302	
317		7.23	7.20	34.234	26.788	130.2	0.586	0.89	13.2	59.0	2.83	35.3	0.00			319	204
376		6.64	6.61	34.235	26.870	123.0	0.661	0.71	10.4	67.4	2.95	37.4	0.00			378	203
400	ISL	6.49	6.45	34.262	26.911	119.3	0.690	0.58	8.4	70.8	3.02	38.1	0.00			403	
434		6.33	6.29	34.305	26.966	114.4	0.730	0.40	5.8	75.2	3.11	38.9	0.00			437	202
500	ISL	6.04	6.00	34.334	27.027	109.4	0.804	0.32	4.6	80.9	3.17	39.7	0.00			503	
512		5.99	5.94	34.340	27.038	108.4	0.817	0.31	4.5	81.9	3.18	39.9	0.00			516	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 0.6 N	119 13.8 W	10/07/98	2207 UTC	1584 m	310 18 kn	300 03 06	1	1015.8 mb	17.1 C	15.9 C	16m	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	17.41	17.41	33.427	24.211	369.9	0.000	5.70	104.1	3.4	0.29	0.0	0.00	0.26	0.06	0	
1		17.41	17.41	33.427	24.211	369.9	0.004	5.70	104.1	3.4	0.29	0.0	0.00	0.26	0.06	1	220
10		17.36	17.36	33.427	24.223	369.1	0.037	5.71	104.2	3.4	0.28	0.0	0.00	0.25	0.06	10	219
19		15.44	15.44	33.332	24.591	334.3	0.069	5.95	104.5	3.8	0.35	0.0	0.00	0.50	0.14	19	218
20	ISL	15.37	15.37	33.327	24.603	333.2	0.072	5.95	104.3	3.9	0.35	0.0	0.01	0.54	0.17	20	
29		15.02	15.02	33.337	24.687	325.4	0.102	5.76	100.3	4.5	0.44	1.2	0.10	0.90	0.42	29	217
30	ISL	14.97	14.97	33.353	24.711	323.2	0.105	5.73	99.7	4.8	0.46	1.5	0.12	0.91	0.45	30	
39		14.14	14.13	33.500	25.001	295.8	0.133	5.31	90.9	8.3	0.71	5.4	0.27	0.97	0.60	39	216
49		11.91	11.90	33.537	25.472	251.2	0.160	4.43	72.4	12.3	1.11	12.0	0.25	0.55	0.43	49	215
50	ISL	11.79	11.78	33.542	25.498	248.7	0.163	4.39	71.6	12.5	1.13	12.4	0.24	0.51	0.40	50	
59		11.10	11.09	33.589	25.661	233.3	0.184	4.13	66.3	14.6	1.28	15.0	0.10	0.19	0.21	59	214
70		10.68	10.67	33.679	25.806	219.8	0.209	3.58	57.0	19.1	1.55	18.8	0.04	0.09	0.18	70	213
75	ISL	10.40	10.39	33.732	25.896	211.3	0.220	3.37	53.4	21.2	1.65	20.3	0.04	0.06	0.15	75	
85		9.86	9.85	33.840	26.072	194.7	0.240	3.00	47.0	25.1	1.82	22.9	0.03	0.03	0.11	85	212
99		9.50	9.49	33.954	26.221	180.8	0.267	2.49	38.7	29.7	2.04	25.5	0.01	0.01	0.11	99	211
100	ISL	9.49	9.48	33.960	26.227	180.3	0.268	2.46	38.2	29.9	2.05	25.6	0.01	0.01	0.11	100	
119		9.35	9.34	34.040	26.313	172.5	0.302	2.13	33.0	33.1	2.18	27.2	0.01	0.01	0.08	120	210
125	ISL	9.29	9.28	34.054	26.333	170.6	0.312	2.09	32.4	33.6	2.20	27.5	0.01	0.01	0.08	126	
140		9.13	9.11	34.079	26.379	166.6	0.337	2.03	31.3	34.8	2.24	28.0	0.01	0.01	0.09	141	209
150	ISL	8.99	8.97	34.096	26.415	163.4	0.354	1.96	30.1	36.1	2.28	28.5	0.01	0.01	0.08	151	
170		8.73	8.71	34.127	26.480	157.5	0.386	1.81	27.7	38.9	2.36	29.4	0.01	0.01	0.07	171	208
199		8.50	8.48	34.163	26.544	151.9	0.431	1.64	25.0	41.8	2.45	30.4	0.01	0.00	0.07	200	207
200	ISL	8.49	8.47	34.164	26.547	151.7	0.432	1.64	25.0	41.9	2.45	30.4	0.01			201	
227		8.29	8.27	34.180	26.590	148.0	0.473	1.53	23.2	44.3	2.51	31.2	0.01			228	206
250	ISL	8.09	8.06	34.196	26.633	144.2	0.506	1.39	21.0	47.1	2.58	32.0	0.01			251	
266		7.93	7.90	34.207	26.666	141.4	0.529	1.28	19.2	49.4	2.63	32.7	0.01			268	205
300	ISL	7.54	7.51	34.233	26.743	134.4	0.576	1.00	14.9	55.0	2.77	34.3	0.00			302	
318		7.33	7.30	34.246	26.783	130.8	0.600	0.86	12.7	58.2	2.84	35.2	0.00			320	204
379		6.76	6.72	34.277	26.887	121.5	0.677	0.55	8.0	68.1	3.01	37.4	0.00			381	203
400	ISL	6.60	6.56	34.285	26.915	119.1	0.702	0.49	7.1	70.7	3.05	38.0	0.00			403	
436		6.38	6.34	34.296	26.953	115.8	0.744	0.41	5.9	74.4	3.11	38.7	0.00			439	202
500	ISL	6.22	6.18	34.315	26.989	113.2	0.818	0.34	4.9	78.0	3.15	39.1	0.00			503	
508		6.20	6.15	34.317	26.993	112.8	0.827	0.33	4.8	78.4	3.16	39.2	0.00			511	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 50.4 N	119 34.6 W	11/07/98	0204 UTC	1865 m	300 20 kn	310 05 07	1	1014.9 mb	15.5 C	14.2 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	15.69	15.69	33.232	24.458	346.4	0.000	5.96	105.1	2.4	0.33	0.0	0.00	0.33	0.10	0	
1		15.69	15.69	33.232	24.458	346.4	0.003	5.96	105.1	2.4	0.33	0.0	0.00	0.33	0.10	1	220
9		15.69	15.69	33.232	24.459	346.6	0.031	5.94	104.7	2.5	0.33	0.0	0.00	0.43	0.10	9	219
10	ISL	15.69	15.69	33.233	24.459	346.6	0.035	5.94	104.7	2.5	0.33	0.0	0.00	0.43	0.10	10	
19		15.69	15.69	33.265	24.484	344.5	0.066	5.96	105.1	2.7	0.34	0.0	0.00	0.44	0.14	19	218
20	ISL	15.67	15.67	33.271	24.494	343.6	0.069	5.97	105.2	2.7	0.34	0.0	0.00	0.45	0.14	20	
30		15.49	15.49	33.328	24.578	335.9	0.103	6.00	105.4	3.2	0.35	0.0	0.00	0.71	0.24	30	217
40		14.79	14.78	33.351	24.748	319.9	0.136	5.91	102.4	3.8	0.42	0.8	0.05	1.24	0.59	40	216
50		14.43	14.42	33.400	24.863	309.3	0.167	5.63	96.9	4.7	0.51	1.9	0.14	0.60	0.38	50	215
60		13.73	13.72	33.446	25.044	292.2	0.197	5.27	89.4	5.1	0.58	3.8	0.22	0.26	0.28	60	214
70		13.18	13.17	33.454	25.162	281.3	0.226	5.09	85.4	6.2	0.70	5.7	0.15	0.08 U	0.08 U	70	213
75	ISL	12.92	12.91	33.469	25.225	275.3	0.240	5.01	83.6	6.8	0.75	6.6	0.12	0.20	0.21	75	
84		12.39	12.38	33.505	25.357	263.0	0.264	4.83	79.7	8.3	0.86	8.5	0.07	0.16	0.18	84	212
98		11.32	11.31	33.575	25.611	239.0	0.299	4.37	70.5	12.5	1.15	13.3	0.03	0.09	0.12	98	211
100	ISL	11.17	11.16	33.586	25.647	235.7	0.304	4.32	69.5	13.1	1.19	13.9	0.03	0.08	0.11	100	
118		10.03	10.02	33.693	25.929	209.0	0.344	3.95	62.0	18.6	1.47	18.4	0.02	0.03	0.07	119	210
125	ISL	9.70	9.69	33.739	26.020	200.4	0.359	3.81	59.4	20.8	1.56	19.9	0.02	0.02	0.06	126	
140		9.15	9.13	33.830	26.181	185.4	0.387	3.54	54.6	25.1	1.73	22.7	0.01	0.00	0.05	141	209
150	ISL	8.87	8.85	33.873	26.259	178.1	0.406	3.41	52.2	27.4	1.80	23.9	0.01	0.00	0.05	151	
169		8.45	8.43	33.934	26.372	167.6	0.438	3.18	48.3	31.3	1.92	25.7	0.01	0.00	0.05	170	208
196		7.98	7.96	34.001	26.495	156.2	0.482	2.77	41.6	37.4	2.12	28.4	0.00	0.00	0.04	197	207
200	ISL	7.95	7.93	34.011	26.508	155.1	0.488	2.70	40.5	38.2	2.15	28.7	0.00			201	
227		7.79	7.77	34.076	26.583	148.4	0.529	2.18	32.6	43.5	2.34	30.6	0.00			228	206
250	ISL	7.57	7.55	34.115	26.645	142.8	0.563	1.80	26.8	48.3	2.49	32.3	0.00			251	
271		7.36	7.33	34.144	26.698	138.0	0.592	1.49	22.1	52.5	2.61	33.7	0.00			273	205
300	ISL	7.16	7.13	34.183	26.757	132.8	0.632	1.15	17.0	57.3	2.75	35.2	0.00			302	
315		7.07	7.04	34.201	26.784	130.4	0.651	1.00	14.7	59.7	2.81	35.8	0.00			317	204
380		6.57	6.54	34.275	26.911	119.1	0.732	0.56	8.2	70.3	3.04	38.2	0.00			382	203
400	ISL	6.50	6.46	34.291	26.933	117.3	0.756	0.46	6.7	72.3	3.08	38.4	0.00			403	
434		6.41	6.37	34.311	26.961	115.1	0.796	0.34	4.9	75.0	3.12	38.6	0.00			437	202
500	ISL	6.08	6.04	34.323	27.013	110.7	0.870	0.30	4.3	80.5	3.17	39.6	0.00			503	
518		5.99	5.94	34.327	27.028	109.5	0.890	0.29	4.2	82.0	3.18	39.9	0.00			522	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 30.8 N	120 15.0 W	11/07/98	0824 UTC	3921 m	320 20 kn			1016.1 mb	16.3 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	17.53	17.53	33.284	24.073	383.1	0.000	5.61	102.6	1.6	0.22	0.0	0.00	0.15	0.03	0	
1		17.53	17.53	33.284	24.073	383.1	0.004	5.61	102.6	1.6	0.22	0.0	0.00	0.15	0.03	1	220
10	ISL	17.54	17.54	33.285	24.072	383.6	0.038	5.60	102.4	1.6	0.22	0.0	0.00	0.14	0.04	10	
15		17.54	17.54	33.286	24.073	383.6	0.058	5.59	102.2	1.6	0.22	0.0	0.00	0.13	0.04	15	219
20	ISL	17.54	17.54	33.286	24.073	383.8	0.077	5.59	102.2	1.6	0.22	0.0	0.00	0.13	0.04	20	
30		17.53	17.52	33.286	24.076	383.9	0.115	5.58	102.0	1.6	0.21	0.0	0.00	0.14	0.04	30	218
45		17.18	17.17	33.306	24.175	374.9	0.172	5.66	102.8	1.6	0.21	0.0	0.00	0.19	0.07	45	217
50	ISL	17.13	17.12	33.307	24.188	373.8	0.191	5.67	102.9	1.7	0.22	0.0	0.00	0.24	0.08	50	
60		16.82	16.81	33.311	24.264	366.9	0.228	5.70	102.8	1.8	0.24	0.0	0.00	0.33	0.11	60	216
74		15.32	15.31	33.358	24.640	331.3	0.277	5.84	102.3	2.0	0.27	0.0	0.00	0.35	0.20	74	215
75	ISL	15.30	15.29	33.364	24.649	330.5	0.280	5.84	102.2	2.0	0.27	0.0	0.00	0.36	0.21	75	
84		15.13	15.12	33.364	24.686	327.2	0.310	5.79	101.0	2.1	0.27	0.0	0.00	0.39	0.32	84	214
94		14.98	14.97	33.399	24.746	321.8	0.342	5.70	99.2	2.3	0.30	0.1	0.02	0.35	0.36	94	213
100	ISL	14.69	14.68	33.434	24.835	313.4	0.361	5.55	96.0	2.8	0.35	0.6	0.11	0.31	0.37	100	
104		14.45	14.43	33.459	24.906	306.8	0.373	5.44	93.7	3.3	0.40	1.2	0.16	0.28	0.37	104	212
114		13.87	13.85	33.499	25.058	292.5	0.403	5.19	88.3	4.7	0.54	3.6	0.06	0.21	0.26	114	211
125		12.94	12.92	33.511	25.255	273.9	0.435	4.91	82.0	6.8	0.74	6.9	0.03	0.15	0.22	126	210
139		11.82	11.80	33.533	25.487	251.9	0.471	4.59	74.8	10.2	0.99	10.8	0.03	0.11	0.14	140	209
150	ISL	11.05	11.03	33.578	25.663	235.2	0.498	4.33	69.5	13.3	1.19	14.0	0.02	0.08	0.10	151	
164		10.27	10.25	33.657	25.861	216.5	0.530	3.96	62.5	17.6	1.43	17.8	0.01	0.04	0.07	165	208
194		9.46	9.44	33.859	26.155	189.1	0.591	2.98	46.2	27.0	1.87	23.8	0.01	0.01	0.06	195	207
200	ISL	9.38	9.36	33.894	26.195	185.3	0.602	2.82	43.7	28.3	1.93	24.6	0.01			201	
229		9.03	9.01	34.019	26.349	171.1	0.654	2.28	35.1	33.7	2.16	27.3	0.00			230	206
250	ISL	8.54	8.51	34.053	26.453	161.5	0.688	2.24	34.1	37.4	2.24	28.7	0.00			251	
269		8.09	8.06	34.067	26.532	154.1	0.718	2.21	33.3	40.6	2.30	29.8	0.00			270	205
300	ISL	7.71	7.68	34.101	26.615	146.6	0.765	1.93	28.8	45.5	2.43	31.4	0.00			302	
317		7.56	7.53	34.116	26.648	143.6	0.790	1.75	26.1	48.2	2.50	32.3	0.00			319	204
379		6.86	6.82	34.140	26.766	133.0	0.875	1.23	18.0	58.6	2.75	35.6	0.00			381	203
400	ISL	6.63	6.59	34.154	26.807	129.2	0.903	1.05	15.3	62.6	2.83	36.7	0.00			402	
436		6.28	6.24	34.181	26.875	123.0	0.948	0.78	11.3	69.3	2.96	38.4	0.00			439	202
500	ISL	5.90	5.86	34.232	26.964	115.1	1.025	0.51	7.3	77.8	3.10	40.1	0.00			503	
507		5.86	5.82	34.238	26.974	114.3	1.033	0.48	6.9	78.7	3.12	40.3	0.00			510	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 10.8 N	120 56.7 W	11/07/98	1804 UTC	3847 m	310 21 kn	310 06 04		1018.4 mb	18.9 C	17.1 C	27m	

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	17.64	17.64	33.174	23.962	393.7	0.000	5.59	102.4	4.0	0.22	0.0	0.00	0.13	0.03	0	
1		17.65	17.65	33.174	23.960	393.9	0.004									1	224
3	A	17.64	17.64	33.174	23.962	393.7	0.012	5.59	102.4	4.0	0.22	0.0	0.00	0.13	0.03	3	222
3		17.65	17.65	33.175	23.961	393.9	0.012									3	223
10	ISL	17.64	17.64	33.176	23.964	393.8	0.039	5.60	102.6	3.9	0.22	0.0	0.00	0.14	0.03	10	
12		17.64	17.64	33.176	23.964	393.9	0.047	5.60	102.6	20.6 U	0.22	0.0	0.00	0.14	0.03	12	221
20	ISL	17.61	17.61	33.177	23.972	393.3	0.079	5.60	102.5	3.8	0.21	0.0	0.00	0.13	0.03	20	
21	A	17.60	17.60	33.176	23.974	393.2	0.083	5.60	102.5	7.9 U	0.21	0.0	0.00	0.13	0.03	21	220
30	ISL	17.44	17.43	33.416	24.197	372.3	0.117	5.66	103.4	3.6	0.22	0.0	0.00	0.14	0.03	30	
38	A	17.28	17.27	33.632	24.401	353.1	0.146	5.72	104.3	3.5	0.23	0.0	0.00	0.16	0.04	38	219
47		17.17	17.16	33.643	24.436	350.1	0.178	5.73	104.3	2.8	0.23	0.0	0.00	0.16	0.05	47	218
50	ISL	17.12	17.11	33.645	24.449	348.9	0.188	5.73	104.2	2.9	0.23	0.0	0.00	0.16	0.05	50	
57	A	16.96	16.95	33.642	24.485	345.8	0.213	5.74	104.0	3.1	0.23	0.0	0.00	0.17	0.04	57	217
75	A	16.16	16.15	33.571	24.616	333.8	0.274	5.78	103.1	4.7	0.23	0.0	0.00	0.21	0.07	75	216
82		15.99	15.98	33.559	24.645	331.2	0.297	5.78	102.7	7.8 U	0.23	0.0	0.00	0.23	0.08	82	215
94		15.95	15.94	33.604	24.689	327.4	0.337	5.74	101.9	2.7	0.22	0.0	0.00	0.23	0.11	94	214
100	ISL	15.79	15.77	33.596	24.719	324.7	0.356	5.75	101.8	3.4	0.22	0.0	0.00	0.23	0.13	100	
103	A	15.73	15.71	33.601	24.737	323.1	0.366	5.76	101.8	3.8	0.22	0.0	0.00	0.23	0.15	103	213
108		15.80	15.78	33.656	24.764	320.7	0.382	5.66	100.2	8.7 U	0.21	0.0	0.00	0.23	0.18	108	212
116		15.90	15.88	33.735	24.802	317.3	0.407	5.59	99.3	4.0	0.21	0.0	0.01	0.14	0.14	116	211
125		15.52	15.50	33.778	24.921	306.3	0.435	5.40	95.2	9.1 U	0.29	0.6	0.19	0.21	0.21	126	210
140		13.72	13.70	33.660	25.214	278.4	0.479	5.05	85.8	6.3	0.62	5.2	0.05	0.12	0.20	141	209
150	ISL	12.55	12.53	33.619	25.416	259.2	0.506	4.84	80.2	8.8	0.82	8.3	0.03	0.06	0.17	151	
163		11.25	11.23	33.611	25.653	236.6	0.538	4.58	73.8	12.6	1.05	12.1	0.01	0.00	0.12	164	208
190		9.85	9.83	33.700	25.966	207.0	0.598	3.95	61.8	20.4	1.49	18.9	0.00	0.02	0.05	191	207
200	ISL	9.55	9.53	33.762	26.064	197.8	0.619	3.70	57.5	22.9	1.62	20.7	0.00			201	
228		8.97	8.95	33.926	26.286	177.1	0.671	3.10	47.6	28.9	1.89	24.5	0.00			229	206
250	ISL	8.55	8.52	33.985	26.398	166.7	0.709	2.91	44.3	32.9	2.01	26.4	0.00			251	
268		8.25	8.22	34.012	26.465	160.5	0.738	2.80	42.3	36.0	2.08	27.5	0.00			269	205
300	ISL	7.84	7.81	34.052	26.557	152.1	0.788	2.46	36.8	41.6	2.24	29.6	0.00			302	
318		7.65	7.62	34.069	26.599	148.4	0.815	2.24	33.4	44.8	2.34	30.7	0.00			320	204
380		6.98	6.94	34.131	26.742	135.4	0.903	1.44	21.1	57.1	2.68	34.7	0.00			382	203
400	ISL	6.79	6.75	34.141	26.776	132.3	0.930	1.27	18.6	60.2	2.76	35.7	0.00			402	
434		6.49	6.45	34.155	26.827	127.7	0.974	1.03	15.0	65.2	2.87	37.3	0.00			437	202
500	ISL	6.02	5.98	34.196	26.921	119.4	1.056	0.67	9.6	75.0	3.05	39.5	0.00			503	
513		5.93	5.89	34.204	26.938	117.8	1.071	0.60	8.6	76.9	3.08	39.9	0.00			516	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 50.9 N	121 35.6 W	11/07/98	2304 UTC	4102 m	330 25 kn	330 07 06	1	1018.5 mb	18.8 C	16.9 C	25m	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	18.38	18.38	33.641	24.139	376.8	0.000	5.50	102.5	2.0	0.23	0.1	0.00	0.09	0.01	0	
2	18.38	18.38	33.640	24.138	376.9	0.008									2	221
2	18.38	18.38	33.641	24.139	376.9	0.008									2	222
2	18.38	18.38	33.641	24.139	376.9	0.008	5.50	102.5	2.0	0.23	0.1	0.00	0.09	0.01	2	220
10 ISL	18.37	18.37	33.642	24.143	376.8	0.038	5.50	102.4	2.0	0.23	0.1	0.00	0.05	0.01	10	
15	18.37	18.37	33.642	24.143	377.0	0.057	5.50	102.4	2.0	0.23	0.1	0.00	0.02	0.01	15	219
20 ISL	18.32	18.32	33.646	24.159	375.6	0.075	5.51	102.5	2.0	0.23	0.1	0.00	0.04	0.02	20	
30 ISL	18.19	18.18	33.652	24.196	372.5	0.113	5.54	102.8	2.1	0.22	0.1	0.00	0.09	0.03	30	
31	18.17	18.16	33.652	24.201	372.0	0.116	5.54	102.8	2.1	0.22	0.1	0.00	0.10	0.03	31	218
45	17.96	17.95	33.643	24.246	368.2	0.168	5.58	103.1	2.0	0.23	0.1	0.00	0.11	0.04	45	217
50 ISL	17.57	17.56	33.623	24.325	360.8	0.187	5.65	103.6	2.0	0.23	0.1	0.00	0.13	0.05	50	
60	16.76	16.75	33.589	24.491	345.2	0.222	5.77	104.1	2.1	0.23	0.1	0.00	0.16	0.06	60	216
73	16.40	16.39	33.588	24.574	337.7	0.266	5.76	103.2	2.2	0.24	0.1	0.00	0.19	0.08	73	215
75 ISL	16.36	16.35	33.588	24.583	336.9	0.273	5.76	103.1	2.2	0.24	0.1	0.00	0.20	0.09	75	
85	16.18	16.17	33.582	24.620	333.7	0.306	5.74	102.4	2.1	0.24	0.0	0.00	0.26	0.13	85	214
95	16.01	16.00	33.566	24.647	331.5	0.340	5.71	101.5	2.2	0.25	0.1	0.00	0.26	0.15	95	213
100 ISL	15.87	15.85	33.562	24.675	328.9	0.356	5.62	99.6	2.3	0.26	0.1	0.02	0.29	0.25	100	
103	15.74	15.72	33.555	24.699	326.7	0.366	5.57	98.5	2.4	0.27	0.1	0.03	0.30	0.31	103	212
114	14.90	14.88	33.465	24.815	315.8	0.401	5.49	95.4	3.2	0.39	0.9	0.28	0.22	0.26	114	211
124	14.21	14.19	33.511	24.997	298.7	0.432	5.12	87.7	4.9	0.57	3.8	0.07	0.19	0.20	124	210
125 ISL	14.14	14.12	33.512	25.013	297.2	0.435	5.09	87.1	5.0	0.59	4.1	0.07	0.19	0.20	126	
140	13.17	13.15	33.516	25.214	278.3	0.478	4.74	79.5	7.4	0.81	7.6	0.03	0.12	0.17	141	209
150 ISL	12.61	12.59	33.539	25.342	266.2	0.506	4.48	74.3	9.3	0.96	9.9	0.03	0.09	0.14	151	
164	11.84	11.82	33.588	25.527	248.7	0.542	4.13	67.4	12.5	1.17	13.1	0.02	0.06	0.10	165	208
194	9.98	9.96	33.740	25.976	206.2	0.610	3.61	56.6	20.7	1.57	19.9	0.01	0.02	0.05	195	207
200 ISL	9.79	9.77	33.768	26.029	201.2	0.622	3.53	55.1	21.8	1.62	20.7	0.01			201	
227	9.23	9.21	33.880	26.209	184.5	0.674	3.20	49.4	26.5	1.81	23.5	0.00			228	206
250 ISL	8.75	8.72	33.970	26.355	170.9	0.715	2.93	44.8	31.2	1.97	25.7	0.00			251	
266	8.43	8.40	34.020	26.444	162.6	0.742	2.75	41.7	34.5	2.07	27.1	0.00			267	205
300 ISL	7.75	7.72	34.046	26.566	151.3	0.795	2.47	36.9	41.2	2.23	29.6	0.00			302	
319	7.43	7.40	34.049	26.614	146.8	0.823	2.30	34.1	44.9	2.32	30.9	0.00			321	204
378	7.03	6.99	34.136	26.739	135.7	0.907	1.42	20.9	55.7	2.67	34.5	0.00			380	203
400 ISL	6.80	6.76	34.150	26.782	131.8	0.936	1.21	17.7	59.9	2.77	35.7	0.00			402	
438	6.41	6.37	34.170	26.849	125.6	0.985	0.94	13.6	66.6	2.90	37.5	0.00			441	202
500 ISL	6.06	6.02	34.228	26.941	117.5	1.060	0.60	8.6	74.6	3.06	39.4	0.00			503	
517	5.97	5.92	34.244	26.965	115.4	1.080	0.51	7.3	76.8	3.10	39.9	0.00			520	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 30.8 N	122 15.7 W	12/07/98	0506 UTC	4168 m	320 29 kn			1019.1 mb	18.1 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	18.35	18.35	33.628	24.137	377.0	0.000	5.54	103.1	1.9	0.23	0.0	0.00	0.09	0.02	0	
2	18.35	18.35	33.628	24.137	377.1	0.008	5.54	103.1	1.9	0.23	0.0	0.00	0.09	0.02	2	220
10 ISL	18.35	18.35	33.630	24.138	377.2	0.038	5.51	102.6	1.9	0.23	0.0	0.00	0.09	0.01	10	
16	18.35	18.35	33.632	24.140	377.2	0.060	5.49	102.2	1.9	0.23	0.0	0.00	0.09	0.01	16	219
20 ISL	18.35	18.35	33.631	24.140	377.4	0.075	5.49	102.2	1.9	0.23	0.0	0.00	0.09	0.01	20	
30 ISL	18.35	18.34	33.629	24.139	377.9	0.113	5.49	102.2	1.9	0.23	0.0	0.00	0.09	0.02	30	
31	18.35	18.34	33.629	24.139	377.9	0.117	5.49	102.2	1.9	0.23	0.0	0.00	0.09	0.02	31	218
44	18.31	18.30	33.636	24.154	376.9	0.166	5.50	102.3	1.9	0.23	0.0	0.00	0.09	0.02	44	217
50 ISL	17.87	17.86	33.630	24.258	367.2	0.188	5.61	103.5	1.9	0.23	0.0	0.00	0.10	0.03	50	
60	17.05	17.04	33.617	24.444	349.7	0.224	5.78	104.9	2.0	0.24	0.0	0.00	0.12	0.04	60	216
75	16.60	16.59	33.585	24.526	342.4	0.276	5.75	103.4	2.0	0.24	0.0	0.00	0.17	0.06	75	215
83	16.37	16.36	33.560	24.560	339.4	0.303	5.78	103.5	2.1	0.25	0.0	0.00	0.20	0.08	83	214
94	16.10	16.09	33.538	24.605	335.4	0.341	5.77	102.7	2.1	0.26	0.0	0.00	0.23	0.10	94	213
100 ISL	15.99	15.97	33.529	24.623	333.9	0.361	5.75	102.2	2.1	0.27	0.0	0.00	0.28	0.14	100	
105	15.84	15.82	33.521	24.651	331.4	0.377	5.74	101.7	2.1	0.27	0.0	0.00	0.31	0.19	105	212
114	15.27	15.25	33.498	24.760	321.2	0.407	5.58	97.7	2.7	0.34	0.2	0.16	0.32	0.28	114	211
125 ISL	14.51	14.49	33.501	24.926	305.5	0.441	5.35	92.2	3.9	0.47	2.3	0.06	0.23	0.18	125	
126	14.44	14.42	33.502	24.942	304.0	0.444	5.33	91.8	4.0	0.48	2.5	0.04	0.22	0.17	126	210
141	13.32	13.30	33.499	25.171	282.4	0.488	4.98	83.8	6.3	0.71	6.0	0.04	0.03 A	0.03 A	142	209
150 ISL	12.56	12.54	33.514	25.333	267.1	0.513	4.74	78.5	8.4	0.87	8.6	0.03	0.03	0.03	151	
160	11.80	11.78	33.549	25.504	250.8	0.539	4.47	72.9	10.9	1.05	11.4	0.01	0.03 A	0.04 A	161	208
190	10.89	10.87	33.731	25.812	222.1	0.610	3.62	57.9	17.8	1.48	17.7	0.01	0.02	0.04	191	207
200 ISL	10.48	10.46	33.776	25.919	212.0	0.631	3.45	54.7	20.1	1.59	19.5	0.01			201	
228	9.36	9.33	33.881	26.189	186.5	0.687	3.16	48.9	26.2	1.83	23.5	0.00			229	206
250 ISL	8.80	8.77	33.947	26.330	173.3	0.727	3.03	46.4	29.8	1.94	25.3	0.00			251	
268	8.47	8.44	33.990	26.414	165.5	0.757	2.92	44.3	32.7	2.01	26.5	0.00			269	205
300 ISL	8.04	8.01	34.055	26.531	154.8	0.808	2.48	37.3	39.0	2.21	28.9	0.00			302	
317	7.85	7.82	34.078	26.577	150.6	0.834	2.22	33.3	42.5	2.32	30.2	0.00			319	204
375	7.03	6.99	34.098	26.709	138.4	0.918	1.67	24.6	53.3	2.57	33.8	0.00			377	203
400 ISL	6.73	6.69	34.116	26.764	133.4	0.952	1.39	20.3	58.7	2.70	35.4	0.00			402	
435	6.39	6.35	34.147	26.834	127.0	0.998	1.01	14.6	65.9	2.87	37.5	0.00			438	202
500 ISL	6.05	6.01	34.209	26.927	118.8	1.078			74.1	3.04	39.4	0.00			503	
518	5.96	5.91	34.226	26.952	116.6	1.099			76.4	3.09	39.9	0.00			521	201

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

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
30 10.9 N	122 55.8 W	12/07/98	1105 UTC	3846 m	320 20 kn			1018.7 mb	17.9 C	15.7 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	18.61	18.61	33.750	24.165	374.3	0.000	5.44	101.8	1.6	0.22	0.0	0.00	0.10	0.02	0	
1	18.61	18.61	33.750	24.165	374.3	0.004	5.44	101.8	1.6	0.22	0.0	0.00	0.10	0.02	1	220
10 ISL	18.61	18.61	33.749	24.165	374.7	0.037	5.43	101.7	1.6	0.22	0.0	0.00	0.10	0.02	10	
14	18.61	18.61	33.749	24.165	374.8	0.052	5.43	101.7	1.6	0.22	0.0	0.00	0.10	0.02	14	219
20 ISL	18.60	18.60	33.763	24.179	373.7	0.075	5.44	101.8	1.6	0.22	0.0	0.00	0.10	0.02	20	
30	18.57	18.56	33.798	24.213	370.8	0.112	5.45	102.0	1.6	0.21	0.0	0.00	0.10	0.03	30	218
46	18.55	18.54	33.869	24.273	365.7	0.171	5.47	102.4	1.6	0.20	0.0	0.00	0.11	0.03	46	217
50 ISL	18.50	18.49	33.866	24.283	364.8	0.186	5.48	102.4	1.6	0.20	0.0	0.00	0.12	0.03	50	
60	18.39	18.38	33.884	24.325	361.2	0.222	5.53	103.2	1.7	0.20	0.0	0.00	0.13	0.04	60	216
75	17.53	17.52	33.838	24.500	345.0	0.275	5.67	104.0	1.8	0.20	0.0	0.00	0.13	0.05	75	215
84	17.53	17.52	33.923	24.566	339.0	0.306	5.62	103.1	1.8	0.19	0.0	0.00	0.16	0.06	84	214
95	17.61	17.59	34.104	24.686	328.0	0.342	5.55	102.1	1.8	0.17	0.0	0.00	0.23	0.09	95	213
100 ISL	17.56	17.54	34.119	24.709	325.9	0.359	5.53	101.7	1.9	0.16	0.0	0.00	0.23	0.10	100	
104	17.50	17.48	34.120	24.725	324.6	0.372	5.52	101.4	1.9	0.16	0.0	0.00	0.22	0.12	104	212
115	17.36	17.34	34.161	24.790	318.8	0.407	5.46	100.0	2.0	0.16	0.0	0.00	0.25	0.22	115	211
124	17.19	17.17	34.205	24.865	311.9	0.436	5.36	97.9	2.2	0.18	0.0	0.03	0.26	0.26	124	210
125 ISL	17.09	17.07	34.195	24.881	310.4	0.439	5.35	97.5	2.3	0.19	0.1	0.03	0.25	0.26	125	
139	15.31	15.29	33.983	25.125	287.2	0.480	5.11	89.8	3.7	0.39	2.5	0.09	0.16	0.21	140	209
150 ISL	14.03	14.01	33.822	25.276	272.9	0.511	4.91	84.0	5.5	0.59	5.0	0.07	0.12	0.18	151	
164	12.64	12.62	33.673	25.441	257.2	0.548	4.68	77.7	8.2	0.83	8.4	0.02	0.09	0.14	165	208
194	10.88	10.86	33.677	25.771	226.0	0.621	4.33	69.2	13.5	1.17	13.9	0.01	0.04	0.08	195	207
200 ISL	10.59	10.57	33.696	25.837	219.7	0.634	4.21	66.9	15.0	1.26	15.2	0.01			201	
229	9.46	9.43	33.814	26.120	193.1	0.694	3.61	56.0	22.7	1.64	21.1	0.00			230	206
250 ISL	8.91	8.88	33.889	26.267	179.3	0.733	3.35	51.4	27.2	1.80	23.7	0.00			251	
268	8.55	8.52	33.943	26.365	170.1	0.765	3.19	48.5	30.6	1.90	25.3	0.00			269	205
300 ISL	8.01	7.98	34.002	26.493	158.3	0.817	2.92	43.9	36.2	2.06	27.5	0.00			302	
318	7.75	7.72	34.022	26.547	153.3	0.845	2.76	41.2	39.3	2.15	28.6	0.00			320	204
378	6.90	6.86	34.056	26.694	139.8	0.933	1.97	28.9	52.0	2.50	33.2	0.00			380	203
400 ISL	6.65	6.61	34.077	26.744	135.2	0.963	1.65	24.0	57.0	2.64	34.9	0.00			402	
437	6.31	6.27	34.115	26.819	128.3	1.012	1.16	16.8	64.9	2.84	37.3	0.00			440	202
500 ISL	5.91	5.87	34.174	26.917	119.6	1.090	0.70	10.0	74.7	3.03	39.6	0.00			503	
510	5.85	5.81	34.184	26.932	118.2	1.102	0.63	9.0	76.3	3.06	40.0	0.00			513	201

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
29 51.1 N	123 36.4 W	12/07/98	1812 UTC	4090 m	330 15 kn	330 03 06	2	1020.4 mb	18.9 C	16.2 C	28m	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	18.56	18.56	33.805	24.220	369.1	0.000	5.46	102.2	1.9	0.22	0.0	0.00	0.11	0.01	0	
1 A	18.56	18.56	33.805	24.220	369.1	0.004	5.46	102.2	1.9	0.22	0.0	0.00	0.11	0.01	1	223
2	18.56	18.56	33.801	24.217	369.4	0.007									2	224
10 ISL	18.56	18.56	33.806	24.221	369.3	0.037	5.45	102.0	1.8	0.22	0.0	0.00	0.10	0.01	10	
12	18.56	18.56	33.806	24.221	369.4	0.044	5.45	102.0	1.8	0.22	0.0	0.00	0.10	0.01	12	222
20 ISL	18.56	18.56	33.812	24.226	369.2	0.074	5.45	102.0	1.8	0.22	0.0	0.00	0.10	0.02	20	
21 A	18.56	18.56	33.813	24.227	369.2	0.078	5.45	102.0	1.8	0.22	0.0	0.00	0.10	0.02	21	221
30 ISL	18.57	18.56	33.822	24.232	369.1	0.111	5.46	102.2	1.8	0.22	0.0	0.00	0.11	0.02	30	
31	18.57	18.56	33.823	24.232	369.0	0.114	5.46	102.2	1.8	0.22	0.0	0.00	0.11	0.02	31	220
39 A	18.60	18.59	33.922	24.301	362.8	0.144	5.48	102.7	1.9	0.19	0.0	0.00	0.12	0.03	39	219
49	17.95	17.94	33.926	24.465	347.5	0.179	5.60	103.6	1.9	0.22	0.0	0.00	0.16	0.03	49	218
50 ISL	17.91	17.90	33.925	24.474	346.6	0.183	5.60	103.5	1.9	0.22	0.0	0.00	0.16	0.03	50	
60 A	17.68	17.67	33.911	24.520	342.6	0.217	5.61	103.3	1.9	0.24	0.0	0.00	0.18	0.05	60	217
68	17.52	17.51	33.917	24.563	338.8	0.244	5.59	102.6	1.9	0.22	0.0	0.00	0.20	0.09	68	216
75 ISL	17.44	17.43	33.943	24.602	335.2	0.268	5.58	102.2	2.0	0.19	0.0	0.00	0.23	0.11	75	
77 A	17.41	17.40	33.948	24.614	334.3	0.275	5.58	102.2	2.0	0.19	0.0	0.00	0.24	0.11	77	215
86	17.16	17.15	33.903	24.639	332.1	0.305	5.57	101.5	2.0	0.22	0.0	0.00	0.26	0.14	86	214
96	16.99	16.97	33.949	24.715	325.2	0.338	5.51	100.1	2.1	0.22	0.0	0.00	0.29	0.29	96	213
100 ISL	17.23	17.21	34.054	24.739	323.1	0.351	5.49	100.3	2.1	0.19	0.0	0.00	0.29	0.26	100	
104 A	17.48	17.46	34.160	24.760	321.2	0.363	5.48	100.6	2.1	0.16	0.0	0.00	0.28	0.22	104	212
116	17.44	17.42	34.185	24.790	318.9	0.402	5.45	100.0	2.2	0.16	0.0	0.00	0.26	0.25	116	211
125 ISL	17.31	17.29	34.200	24.833	315.1	0.430	5.38	98.5	2.3	0.17	0.0	0.02	0.22	0.28	125	
126	17.29	17.27	34.203	24.840	314.4	0.434	5.37	98.3	2.3	0.17	0.0	0.02	0.21	0.28	127	210
140	16.00	15.98	33.950	24.946	304.5	0.477	5.20	92.6	3.3	0.34	1.4	0.17	0.18	0.26	141	209
150 ISL	14.78	14.76	33.784	25.088	291.0	0.507	4.97	86.3	4.8	0.53	3.8	0.13	0.16	0.24	151	
165	13.04	13.02	33.638	25.335	267.4	0.548	4.52	75.7	8.0	0.86	8.3	0.02	0.12	0.19	166	208
196	11.30	11.28	33.797	25.790	224.5	0.625	3.49	56.4	17.1	1.46	17.2	0.00	0.03	0.06	197	207
200 ISL	11.04	11.02	33.801	25.840	219.7	0.634	3.48	55.9	18.1	1.50	17.9	0.00			201	
228	9.43	9.40	33.829	26.137	191.5	0.691	3.44	53.3	24.3	1.71	22.0	0.00			229	206
250 ISL	8.83	8.80	33.919	26.303	175.9	0.732	3.02	46.2	29.7	1.92	25.2	0.00			251	
268	8.53	8.50	33.991	26.406	166.3	0.762	2.66	40.5	33.8	2.08	27.3	0.00			269	205
300 ISL	7.88	7.85	34.030	26.534	154.3	0.814	2.64	39.6	39.2	2.17	28.8	0.00			302	
316	7.63	7.60	34.041	26.579	150.2	0.838	2.63	39.2	41.7	2.20	29.3	0.00			318	204
376	7.38	7.34	34.166	26.714	138.3	0.925	1.44	21.4	52.4	2.62	33.4	0.00			378	203
400 ISL	7.22	7.18	34.199	26.763	133.9	0.957	1.10	16.3	56.7	2.75	34.8	0.00			402	
439	6.94	6.90	34.239	26.833	127.7	1.008	0.69	10.1	63.1	2.93	36.7	0.00			442	202
500 ISL	6.57	6.52	34.283	26.918	120.2	1.084	0.45	6.6	70.6	3.07	38.4	0.00			503	
512	6.50	6.45	34.292	26.935	118.8	1.098	0.40	5.8	72.1	3.10	38.7	0.00			515	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON — CALCOFI CRUISE 9807 — STATION 70 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
35 53.2 N	122 22.2 W	25/ 7/98	1949 UTC	20 m		1235 - 1953 PST	1216 PST	1952 PST	405.5 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	15.87	33.103	24.319	5.91	104.5	2.4	0.38	0.0	0.00	0.31	0.08	86. A	9.3	9.0	9.1	0.07
8	15.43	33.097	24.412	5.96	104.5	2.5	0.36	0.0	0.00	0.32	0.10					
14	15.06	33.097	24.493	6.04	105.1	2.6	0.37	0.0	0.00	0.31	0.17	34.	7.2	7.4	7.3	0.11
22	14.64	33.122	24.603	6.00	103.5	2.6	0.41	0.5	0.03	0.55	0.26					
28	13.08	33.077	24.889	5.74	95.9	4.0	0.59	2.4	0.22	0.65	0.41	12.	13.3	13.1	13.2	0.12
35	11.71	33.075	25.150	5.08	82.4	8.2	0.90	7.2	0.61	0.46	0.39					
43	11.44	33.274	25.354	4.80	77.5	11.4	1.09	11.2	0.33	0.47	0.40	3.7	2.8	3.0	2.9	0.07
53	10.95	33.350	25.501	4.44	71.0	13.1	1.22	13.9	0.16	0.31	0.30	1.7	0.65	0.59	0.62	0.05
64	10.32	33.501	25.729	4.00	63.1	18.0	1.48	18.1	0.08	0.15	0.31					
75	9.96	33.573	25.846	3.78	59.2	20.4	1.61	20.1	0.04	0.09	0.26	0.32	0.02	0.02	0.02	0.04

RV NEW HORIZON — CALCOFI CRUISE 9807 — STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 23.4 N	122 15.0 W	23/ 7/98	1857 UTC	23 m		1210 - 1945 PST	1215 PST	1944 PST	410.7 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
2	15.35	32.963	24.327	5.90	103.2	2.5	0.34	0.1	0.00	0.20	0.07	88. A	5.1	5.0	5.1	0.08
10	15.21	32.960	24.355	5.94	103.6	2.5	0.34	0.1	0.00	0.24	0.09					
18	15.08	33.085	24.480	6.03	104.9	2.7	0.37	0.1	0.00	0.31	0.12	30.	7.7	7.6	7.7	0.12
25	15.05	33.087	24.488	6.01	104.5	2.6	0.38	0.1	0.00	0.41	0.20					
32	14.98	33.090	24.506	5.99	104.0	2.7	0.39	0.2	0.02	0.65	0.27	12.	10.3	10.1	10.2	0.12
39	14.46	33.057	24.592	5.97	102.6	2.3	0.35	0.1	0.01	0.68	0.32					
50	13.83	33.093	24.751	5.77	97.9	2.8	0.43	0.7	0.14	0.55	0.34	3.6	3.9	4.2	4.0	0.05
56	13.54	33.094	24.811	5.68	95.8	3.3	0.50	1.5	0.20	0.36	0.26					
63	12.99	33.090	24.918	5.53	92.2	4.3	0.59	2.9	0.24	0.27	0.42	1.5	1.1	0.99	1.0	0.04
74	11.73	33.261	25.291	4.80	78.0	10.4	1.04	10.3	0.26	0.19	0.40					
87	10.78	33.376	25.552	4.43	70.6	13.7	1.24	14.4	0.04	0.13	0.14	0.30	0.03	0.05	0.04	0.02

RV NEW HORIZON — CALCOFI CRUISE 9807 — STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 9.2 N	121 9.0 W	21/ 7/98	1853 UTC	17 m		1212 - 1942 PST	1211 PST	1943 PST	617.1 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
1	16.86	33.503	24.399	5.92	107.0	0.7	0.29	0.0	0.00	0.41	0.13	91. A	14.9	13.3	14.1	0.09
13	16.20	33.492	24.544	5.99	106.9	0.8	0.32	0.1	0.01	0.56	0.22	31.	16.1	15.8	16.0	0.13
25	14.50	33.535	24.952	5.61	96.8	5.8	0.64	3.8	0.24	1.48	0.84	10.	22.6	22.7	22.7	0.23
36	12.87	33.602	25.337	4.82	80.4	13.0	1.11	10.8	0.72	0.81	0.69	3.9	5.3	5.7	5.5	0.11
47	11.51	33.661	25.642	3.88	62.9	17.4	1.45	17.3	0.08	0.21	0.38	1.4	0.35	0.33	0.34	0.06
56	10.72	33.745	25.850	3.22	51.4	21.1	1.68	20.7	0.05	0.11	0.26					
64	10.30	33.792	25.959	2.98	47.1	23.3	1.79	22.4	0.05	0.06	0.20	0.31	0.01	0.01	0.01	0.04

RV NEW HORIZON — CALCOFI CRUISE 9807 — STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 49.3 N	123 54.5 W	22/ 7/98	1911 UTC	27 m		1226 - 1954 PST	1222 PST	1952 PST	141.6 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	17.85	33.461	24.131	5.53	101.9	1.9	0.24	0.0	0.00	0.13	0.04	89. A	3.0	2.8	2.9	0.05
11	17.83	33.461	24.137	5.53	101.8	1.9	0.24	0.0	0.00	0.13	0.03					
21	17.83	33.461	24.137	5.54	102.0	2.0	0.25	0.0	0.00	0.14	0.03	30.	3.0	3.3	3.1	0.09
38	17.83	33.463	24.139	5.52	101.6	2.0	0.24	0.0	0.00	0.14	0.03	12.	1.7	1.7	1.7	0.07
48	17.39	33.477	24.256	5.60	102.2	1.9	0.22	0.0	0.00	0.19	0.04					
58	16.19	33.414	24.488	5.86	104.5	2.0	0.24	0.0	0.00	0.19	0.05	3.7	0.71	0.83	0.77	0.05
74	15.40	33.414	24.665	5.83	102.3	2.1	0.27	0.0	0.00	0.23	0.10	1.5	0.32	0.29	0.30	0.04
83	15.08	33.413	24.735	5.85	102.0	2.3	0.25	0.0	0.00	0.24	0.11					
92	15.15	33.569	24.840	5.75	100.5	2.5	0.24	0.0	0.00	0.28	0.20					
101	15.24	33.730	24.945	5.64	98.8	2.7	0.23	0.1	0.01	0.31	0.29	0.32	0.05	0.05	0.05	0.03

A) INCUBATION LIGHT INTENSITIES WERE 94, 31, 12, 3.8, 1.5, 0.30 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 53.2 N	120 8.9 W	20/ 7/98	1825 UTC	20 m		1205 - 1936 PST	1207 PST	1937 PST	831.0 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
1	18.59	33.388	23.894	5.66	105.7	2.7	0.27	0.0	0.00	0.22	0.06	93. A	8.4	8.6	8.5	0.07
8	18.29	33.364	23.950	5.73	106.4	2.7	0.27	0.0	0.00	0.30	0.08					
15	18.06	33.344	23.991	5.76	106.5	2.7	0.28	0.1	0.01	0.44	0.17	32.	22.9	21.6	22.3	0.16
21	15.10	33.376	24.700	5.55	96.8	5.6	0.55	3.1	0.06	1.20	0.50					
27	14.29	33.394	24.887	5.42	93.0	6.6	0.63	4.3	0.08	0.99	0.42	13.	23.6	24.3	24.0	0.20
37	13.20	33.460	25.162	4.92	82.6	9.4	0.86	7.8	0.11	0.78	0.41					
43	13.17	33.463	25.170	4.91	82.4	9.5	0.87	8.0	0.11	0.73	0.41	3.7	6.7	7.0	6.8	0.08
55	12.61	33.500	25.309	4.67	77.4	11.1	0.99	9.9	0.12	0.65	0.41	1.5	2.4	2.4	2.4	0.08
66	12.12	33.535	25.431	4.40	72.2	12.4	1.12	11.8	0.12	0.45	0.35					
77	11.83	33.567	25.510	4.22	68.8	13.6	1.21	13.3	0.11	0.38	0.35	0.27	0.10	0.09	0.10	0.05

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 54.5 N	122 8.4 W	19/ 7/98	1906 UTC	22 m		1214 - 1940 PST	1215 PST	1942 PST	141.8 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
1	17.19	33.155	24.055	5.62	102.0	1.7	0.21	0.0	0.00	0.17	0.06	93. A	3.5	3.4	3.5	0.05
18	17.20	33.154	24.052	5.61	101.9	1.7	0.22	0.0	0.00	0.16	0.04	28.	3.5	3.8	3.7	0.05
32	17.18	33.154	24.058	5.61	101.8	1.7	0.22	0.0	0.00	0.17	0.04	11.	2.3	2.2	2.2	0.05
47	16.08	33.254	24.389	5.85	104.0	1.9	0.26	0.0	0.00	0.21	0.07	3.8	0.89	0.95	0.92	0.03
60	15.35	33.273	24.567	5.93	103.9					0.23	0.09	1.5	0.33	0.35	0.34	0.03
72	15.06	33.294	24.647	5.86	102.1	2.1	0.28	0.0	0.00	0.22	0.12					
83	15.05	33.396	24.728	5.78	100.7	2.2	0.27	0.0	0.00	0.25	0.21	0.31	0.02	0.03	0.03	0.02

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 30.2 N	119 17.8 W	16/ 7/98	1812 UTC	25 m		1159 - 1939 PST	1203 PST	1938 PST	338.6 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
1	18.28	33.412	23.989	5.61	104.2	2.8	0.25	0.1	0.00	0.15	0.03	94. A	4.7	4.6	4.6	0.08
10	17.82	33.419	24.107	5.70	104.9	2.9	0.26	0.1	0.00	0.20	0.06					
19	16.43	33.387	24.411	5.90	105.7	3.3	0.29	0.1	0.00	0.25	0.07	31.	9.0	9.6	9.3	0.11
28	13.46	33.398	25.061	5.55	93.6	5.3	0.60	3.5	0.19	1.58	0.53					
34	12.55	33.466	25.294	4.73	78.3	9.3	0.96	9.6	0.13	0.68	0.53	12.	7.1	8.2	7.7	0.09
43	11.70	33.569	25.535	4.17	67.8	13.1	1.22	13.8	0.05	0.24	0.29					
52	10.97	33.634	25.719	3.85	61.7	16.2	1.39	16.6	0.02	0.10	0.15	4.1	0.50	0.50	0.50	0.04
60	10.83	33.670	25.772	3.63	58.0	18.0	1.51	18.2	0.02	0.07	0.14					
68	10.69	33.700	25.820	3.49	55.6	19.2	1.56	19.1	0.02	0.05	0.10	1.5	0.18	0.18	0.18	0.04
80	10.20	33.762	25.953	3.27	51.6	21.9	1.69	21.1	0.01	0.02	0.09					
94	9.81	33.799	26.048	3.18	49.7	23.8	1.76	22.3	0.01	0.01	0.06	0.31	-0.01	-0.01	-0.01	0.05

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 19.7 N	121 43.0 W	17/ 7/98	1845 UTC	31 m		1210 - 1945 PST	1213 PST	1943 PST	233.3 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
1	16.61	32.980	24.056	5.72	102.6	2.2	0.26	0.1	0.00	0.12	0.02	95. A	2.8	2.8	2.8	0.06
12	16.60	32.982	24.060	5.72	102.5	2.2	0.25	0.1	0.00	0.12	0.02					
24	16.43	32.984	24.101	5.74	102.5	2.2	0.25	0.1	0.00	0.14	0.04	30.	3.8	4.0	3.9	0.08
34	15.72	32.971	24.252	5.86	103.2	2.3	0.27	0.1	0.00	0.16	0.05					
45	15.15	33.031	24.424	5.94	103.5	2.4	0.29	0.1	0.00	0.17	0.06	11.	3.0	3.3	3.1	0.09
55	15.13	33.201	24.560	5.94	103.5	2.2	0.27	0.1	0.00	0.20	0.08					
65	15.39	33.381	24.642	5.85	102.6	2.1	0.27	0.1	0.00	0.22	0.12	4.0	1.5	1.6	1.5	0.05
76	15.48	33.455	24.679	5.79	101.8	2.3	0.25	0.1	0.00	0.23	0.14					
85	15.36	33.508	24.747	5.69	99.8	2.5	0.27	0.1	0.01	0.30	0.22	1.5	0.70	0.65	0.67	0.04
97	14.82	33.590	24.928	5.44	94.4	3.4	0.35	0.8	0.22	0.26	0.24					
107	14.09	33.596	25.087	5.21	89.1	4.8	0.51	3.3	0.20	0.20	0.25					
118	13.05	33.570	25.279	4.98	83.4	6.8	0.70	6.4	0.04	0.17	0.19	0.29	0.08	0.06	0.07	0.02

A) INCUBATION LIGHT INTENSITIES WERE 94, 31, 12, 3.8, 1.5, 0.30 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON — CALCOFI CRUISE 9807 — STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 19.5 N	123 44.3 W	18/ 7/98	1818 UTC	23 m		1220 - 1950 PST	1221 PST	1949 PST	167.9 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	18.53	33.392	23.911	5.47	102.0	2.3	0.21	0.1	0.00	0.13	0.03	94. A	2.8	2.1	2.5	0.03
19	18.52	33.394	23.916	5.49	102.4	1.7	0.21	0.1	0.00	0.12	0.02	28.	4.7	4.5	4.6	0.05
31	18.17	33.523	24.102	5.54	102.7	2.0	0.22	0.1	0.00	0.14	0.04	13.	3.2	3.5	3.3	0.08
47	15.90	33.312	24.474	5.93	105.0	2.1	0.25	0.1	0.00	0.17	0.06	4.3	1.2	1.3	1.2	0.11
62	15.31	33.308	24.603	5.89	103.1	2.0	0.27	0.1	0.00	0.20	0.09	1.6	0.42	0.47	0.45	0.08
75	15.38	33.408	24.665	5.81	101.9	2.2	0.27	0.1	0.00	0.22	0.11					
86	15.44	33.490	24.715	5.73	100.7	2.1	0.26	0.1	0.00	0.23	0.19	0.32	0.03	0.03	0.03	0.04

RV NEW HORIZON — CALCOFI CRUISE 9807 — STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 25.2 N	117 54.3 W	15/ 7/98	1854 UTC	25 m		1155 - 1937 PST	1158 PST	1934 PST	467.2 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	19.55	33.315	23.595	5.51	104.7	2.4	0.26	0.0	0.00	0.22	0.05	88. A	9.1	9.3	9.2	0.10
10	17.98	33.354	24.018	5.61	103.5	2.6	0.27	0.0	0.00	0.18	0.04					
18	16.84	33.381	24.311	5.75	103.8	2.8	0.27	0.0	0.00	0.22	0.07	33.	6.5	6.6	6.5	0.19
35	15.26	33.193	24.525	5.96	104.2	2.1	0.29	0.0	0.00	0.25	0.12	12.	4.5	4.4	4.5	0.18
44	14.54	33.226	24.705	5.85	100.8	2.3	0.32	0.0	0.00	0.56	0.43					
53	14.15	33.234	24.794	5.82	99.5	2.6	0.36	0.2	0.05	0.90	0.65	3.9	9.0	9.2	9.1	0.14
60	13.78	33.296	24.918	5.48	93.0	4.1	0.51	2.5	0.18	0.66	0.61					
67	13.57	33.428	25.063	5.23	88.4	5.3	0.61	4.5	0.09	0.43	0.43	1.6	2.0	2.1	2.1	0.06
76	12.87	33.459	25.228	5.00	83.3	7.0	0.76	6.9	0.05	0.28	0.33					
85	12.38	33.541	25.386	4.84	79.9	8.2	0.86	8.6	0.04	0.22	0.26					
94	11.48	33.588	25.592	4.51	73.0	11.8	1.09	12.4	0.02	0.14	0.16	0.31	0.06	0.02	0.04	0.07

RV NEW HORIZON — CALCOFI CRUISE 9807 — STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 25.0 N	119 57.5 W	14/ 7/98	1849 UTC	26 m		1208 - 1938 PST	1206 PST	1935 PST	401.7 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
1	15.36	33.033	24.378	5.89	103.1	2.2	0.30	0.0	0.00	0.29	0.06	94. A	8.1	8.4	8.2	0.07
10	15.30	33.034	24.392	5.90	103.1	2.2	0.30	0.0	0.00	0.17	0.02					
20	15.14	33.062	24.449	5.94	103.5	2.3	0.31	0.0	0.00	0.27	0.00	31.	6.4	6.1	6.2	0.08
28	14.96	33.083	24.505	5.94	103.1	2.2	0.32	0.0	0.00	0.27	0.12					
37	14.25	33.053	24.633	5.96	102.0	2.1	0.34	0.1	0.02	0.61	0.26	11.	7.8	7.7	7.8	0.08
46	14.02	33.065	24.690	5.90	100.5	2.4	0.38	0.3	0.07	0.57	0.45					
56	13.77	33.082	24.755	5.80	98.3	3.0	0.44	0.9	0.18	0.51	0.33	3.7	2.7	2.9	2.8	0.04
70	13.61	33.253	24.920	5.44	92.0	3.6	0.51	2.5	0.11	0.33	0.35	1.6	0.78	0.84	0.81	0.03
84	13.05	33.348	25.106	5.56	92.9	6.0	0.72	4.8	0.23	0.75	0.52					
97	12.42	33.440	25.301	4.97	82.0	8.8	0.94	8.5	0.20	0.58	0.35	0.33	0.04	0.07	0.06	0.05

RV NEW HORIZON — CALCOFI CRUISE 9807 — STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 6.7 N	122 40.2 W	13/ 7/98	1835 UTC	23 m		1220 - 1942 PST	1217 PST	1940 PST	139.0 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
1	18.20	33.379	23.983	5.53	102.5	4.1	0.21	0.1	0.00	0.15	0.04	94. A	4.0	3.7	3.8	0.11
17	18.20	33.375	23.981	5.52	102.3	2.7	0.20	0.1	0.00	0.14	0.03	32.	3.8	4.0	3.9	0.12
30	18.16	33.376	23.992	5.52	102.2	2.1	0.20	0.1	0.00	0.17	0.03	14.	2.3	2.2	2.2	0.13
49	17.74	33.770	24.396	5.70	105.0	2.5	0.21	0.1	0.00	0.19	0.04	3.8	0.66	0.79	0.72	0.11
61	17.28	33.786	24.520	5.70	104.0	3.3	0.20	0.1	0.00	0.20	0.05	1.7	0.09	0.08	0.09	0.09
74	16.39	33.640	24.616	5.78	103.6	4.4	0.21	0.1	0.00	0.22	0.08					
86	16.48	33.765	24.692	5.63	101.1	2.4	0.21	0.1	0.00	0.21	0.17	0.32	0.01	0.02	0.02	0.05

A) INCUBATION LIGHT INTENSITIES WERE 94, 31, 12, 3.8, 1.5, 0.30 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 26.8

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 56.8 N	117 18.5 W	9/ 7/98	1825 UTC	20 m		1155 - 1932 PST	1154 PST	1930 PST	512.8 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
1	20.44	33.488	23.494	5.63	108.9	1.9	0.23	0.0	0.02	0.15	0.03	93. A	11.3	10.7	11.0	0.15
8	17.45	33.132	23.976	5.83	106.4	2.2	0.28	0.0	0.02	0.17	0.05					
15	14.72	33.079	24.553	6.16	106.4	2.4	0.33	0.0	0.02	0.22	0.07	32.	4.5	4.5	4.5	0.11
22	14.35	33.153	24.688	6.12	105.0	2.8	0.34	0.0	0.02	0.96	0.32					
28	13.88	33.381	24.963	5.61	95.4	5.6	0.57	2.6	0.13	0.48	0.34	12.	19.8	19.2	19.5	0.12
36	12.64	33.511	25.312	4.57	75.8	9.2	0.99	9.8	0.15	0.64	0.27					
43	12.32	33.538	25.395	4.37	72.0	11.0	1.10	10.9	0.28	0.09 A	0.16 A	3.7	6.3	6.9	6.6	0.06
53	11.98	33.559	25.476	4.19	68.6	12.1	1.18	12.7	0.14	0.00	0.10	1.7	1.8	1.7	1.7	0.04

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

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 11.0 N	118 55.4 W	10/ 7/98	1847 UTC	13 m		1158 - 1938 PST	1201 PST	1935 PST	702.8 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
1	17.32	33.536	24.316	5.76	105.1	4.3	0.28	0.0	0.00	0.52	0.08	89. A	16.0	17.0	16.5	0.17
10	17.27	33.545	24.335	5.77	105.2	4.3	0.27	0.0	0.00	0.56	0.10	31.	19.3	17.1	18.2	0.19
18	16.74	33.606	24.507	5.86	105.7	4.9	0.25	0.0	0.00	1.00	0.17	12.	21.2	19.3	20.3	0.27
27	14.95	33.580 D	24.890	5.95	103.6	5.2	0.27	0.1	0.00	1.86	0.27	4.1	17.0	17.8	17.4	0.33
36	13.30	33.652 D	25.290	5.55	93.4	7.9	0.52	2.6	0.07	3.12	0.87	1.4	11.2	12.1	11.6	0.21
42	12.19	33.694 D	25.540	4.41	72.6	12.9	1.01	9.9	0.27	1.85	0.60					
49	11.08	33.710	25.758	3.43	55.1	19.1	1.57	18.8	0.03	0.17	0.23	0.31	0.13	0.04	0.09	0.04

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 10.8 N	120 56.7 W	11/ 7/98	1804 UTC	27 m		1207 - 1940 PST	1209 PST	1940 PST	206.0 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
3	17.64	33.174	23.962	5.59	102.4	4.0	0.22	0.0	0.00	0.13	0.03	84. A	3.3	2.9	3.1	0.10
12	17.64	33.176	23.964	5.60	102.6	20.6 U	0.22	0.0	0.00	0.14	0.03					
21	17.60	33.176	23.974	5.60	102.5	7.9 U	0.21	0.0	0.00	0.13	0.03	30.	4.9	4.7	4.8	0.08
38	17.28	33.632	24.401	5.72	104.3	3.5	0.23	0.0	0.00	0.16	0.04	12.	3.0	2.8	2.9	0.05
47	17.17	33.643	24.436	5.73	104.3	2.8	0.23	0.0	0.00	0.16	0.05					
57	16.96	33.642	24.485	5.74	104.0	3.1	0.23	0.0	0.00	0.17	0.04	3.9	1.1	1.3	1.2	0.03
75	16.16	33.571	24.616	5.78	103.1	4.7	0.23	0.0	0.00	0.21	0.07	1.4	0.46	0.44	0.45	0.03
82	15.99	33.559	24.645	5.78	102.7	7.8 U	0.23	0.0	0.00	0.23	0.08					
94	15.95	33.604	24.689	5.74	101.9	2.7	0.22	0.0	0.00	0.23	0.11					
103	15.73	33.601	24.737	5.76	101.8	3.8	0.22	0.0	0.00	0.23	0.15	0.29	0.01	0.00	0.00	0.05

RV NEW HORIZON CALCOFI CRUISE 9807 STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
29 51.1 N	123 36.4 W	12/ 7/98	1812 UTC	28 m		1222 - 1950 PST	1220 PST	1946 PST	117.4 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
1	18.56	33.805	24.220	5.46	102.2	1.9	0.22	0.0	0.00	0.11	0.01	95. A	1.9	2.0	2.0	0.06
12	18.56	33.806	24.221	5.45	102.0	1.8	0.22	0.0	0.00	0.10	0.01					
21	18.56	33.813	24.227	5.45	102.0	1.8	0.22	0.0	0.00	0.10	0.02	32.	2.5	2.2	2.3	0.08
31	18.57	33.823	24.232	5.46	102.2	1.8	0.22	0.0	0.00	0.11	0.02					
39	18.60	33.922	24.301	5.48	102.7	1.9	0.19	0.0	0.00	0.12	0.03	12.	1.4	1.3	1.4	0.09
49	17.95	33.926	24.465	5.60	103.6	1.9	0.22	0.0	0.00	0.16	0.03					
60	17.68	33.911	24.520	5.61	103.3	1.9	0.24	0.0	0.00	0.18	0.05	3.7	0.69	0.83	0.76	0.04
68	17.52	33.917	24.563	5.59	102.6	1.9	0.22	0.0	0.00	0.20	0.09					
77	17.41	33.948	24.614	5.58	102.2	2.0	0.19	0.0	0.00	0.24	0.11	1.5	0.42	0.42	0.42	0.06
86	17.16	33.903	24.639	5.57	101.5	2.0	0.22	0.0	0.00	0.26	0.14					
96	16.99	33.949	24.715	5.51	100.1	2.1	0.22	0.0	0.00	0.29	0.29					
104	17.48	34.160	24.760	5.48	100.6	2.1	0.16	0.0	0.00	0.28	0.22	0.33	0.05	0.05	0.05	0.02

A) INCUBATION LIGHT INTENSITIES WERE 94, 31, 12, 3.8, 1.5, 0.30 PERCENT RESPECTIVELY.

CalCOFI Cruise 9807

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)
70	51	36 10.3	121 45.4	07/25	2134	2155	440	200	134	134
70	55	36 03.3	122 00.3	07/25	1805	1827	432	211	65	65
70	60	35 53.9	122 23.7	07/25	1319	1341	449	202	245	245
70	65	35 42.7	122 43.4	07/25	0847	0908	446	201	103	103
77	49	35 05.8	120 47.1	07/24	0458	0505	146	61	48	48
77	51	35 01.8	120 56.2	07/24	0235	0257	455	203	143	112
77	55	34 54.1	121 12.8	07/23	2314	2336	425	207	174	174
77	60	34 43.2	121 33.4	07/23	1914	1936	437	207	87	87
77	70	34 23.8	122 15.8	07/23	1228	1250	413	210	77	77
77	80	34 04.1	122 56.4	07/23	0612	0634	454	199	46	46
77	90	33 43.9	123 38.9	07/23	0029	0051	452	201	35	35
77	100	33 23.8	124 20.2	07/22	1841	1903	474	206	53	53
80	51	34 27.1	120 31.4	07/21	0438	0444	136	60	52	52
80	55	34 19.2	120 49.7	07/21	0807	0829	486	200	47	47
80	60	34 09.4	121 09.7	07/21	1203	1225	451	212	55	55
80	70	33 49.1	121 51.1	07/21	1845	1907	450	207	31	31
80	80	33 29.4	122 33.2	07/22	0033	0055	468	199	28	28
80	90	33 09.4	123 14.2	07/22	0620	0642	476	201	36	36
80	100	32 50.4	123 54.8	07/22	1239	1300	465	198	19	19
82	47	34 18.4	120 02.7	07/21	0031	0053	428	204	122	122
83	40.6	34 13.4	119 24.6	07/20	1817	1820	70	25	14	14
83	42	34 10.9	119 30.5	07/20	1629	1639	214	87	19	19
83	51	33 53.1	120 08.7	07/20	0918	0928	217	88	32	32
83	55	33 45.3	120 24.4	07/20	0650	0712	484	205	50	50
83	60	33 35.9	120 45.7	07/20	0221	0243	505	183	119	119
83	70	33 15.3	121 28.6	07/19	2001	2022	437	206	66	66
83	80	32 55.8	122 08.4	07/19	1244	1305	458	195	41	41
83	90	32 35.2	122 49.8	07/19	0555	0617	489	203	18	18
83	100	32 16.1	123 30.0	07/18	2345	2407	490	201	22	22
83	110	31 55.7	124 12.1	07/18	1722	1745	561	190	18	18
87	33	33 52.9	118 30.6	07/15	2320	2325	101	35	59	59
87	35	33 49.2	118 38.6	07/16	0139	0201	447	204	119	92
87	40	33 39.9	118 57.9	07/16	0552	0613	448	208	20	20
87	45	33 29.7	119 18.6	07/16	0914	0935	463	199	13	13
87	50	33 19.7	119 39.9	07/16	1510	1518	170	70	29	29
87	55	33 09.7	120 01.0	07/16	1915	1937	438	217	135	135
87	60	32 59.1	120 21.8	07/16	2331	2352	470	207	94	94
87	70	32 39.7	121 01.6	07/17	0533	0554	476	217	59	59
87	80	32 20.8	121 43.9	07/17	1233	1255	504	194	42	42
87	90	32 00.8	122 24.9	07/17	1939	2000	498	209	24	24
87	100	31 39.9	123 06.7	07/18	0156	0218	545	188	26	26
87	110	31 18.6	123 43.6	07/18	0839	0900	449	212	16	16
90	28	33 29.0	117 46.2	07/15	1700	1707	149	60	13	13
90	30	33 25.0	117 55.0	07/15	1235	1257	455	206	24	24
90	35	33 15.5	118 15.3	07/15	0756	0817	422	199	21	21
90	37	33 11.5	118 23.3	07/15	0510	0532	450	210	29	29
90	45	32 55.5	118 57.0	07/14	2348	0009	466	199	112	112
90	53	32 39.2	119 30.1	07/14	1820	1842	442	214	61	61
90	60	32 25.2	119 57.7	07/14	1237	1259	424	212	28	28
90	70	32 05.9	120 39.2	07/14	0555	0616	469	203	60	60
90	80	31 45.9	121 19.2	07/13	2337	2359	488	214	27	27
90	90	31 26.3	122 00.7	07/13	1726	1748	490	210	37	37
90	100	31 04.9	122 39.7	07/13	0822	0843	488	206	16	16
90	110	30 46.2	123 20.2	07/13	0052	0114	482	206	27	27
90	120	30 26.5	124 01.2	07/12	1836	1858	467	210	19	19
93	26.7	32 56.7	117 18.8	07/09	1119	1126	167	70	162	30
93	28	32 53.8	117 24.7	07/09	1412	1434	459	214	4	4
93	30	32 50.2	117 32.0	07/09	1726	1747	463	211	6	6
93	35	32 41.4	117 52.8	07/09	2132	2153	442	216	36	36
93	40	32 31.4	118 13.4	07/10	0137	0159	457	212	57	57
93	45	32 20.5	118 34.1	07/10	0652	0714	461	214	26	26
93	50	32 11.1	118 54.5	07/10	0952	1014	466	205	26	26
93	55	32 00.3	119 14.7	07/10	1517	1539	497	201	52	52
93	60	31 49.9	119 35.9	07/10	1929	1951	472	209	36	36
93	70	31 30.4	120 16.6	07/11	0155	0217	510	207	27	27
93	80	31 10.6	120 55.3	07/11	0826	0847	494	210	12	12
93	90	30 51.1	121 36.6	07/11	1617	1639	489	210	14	14
93	100	30 31.6	122 16.9	07/11	2216	2237	483	210	21	21
93	110	30 11.0	122 56.9	07/12	0427	0449	490	210	20	20
93	120	29 50.6	123 35.4	07/12	0914	0935	489	204	10	10

PERSONNEL

CalCOFI Cruise 9808

SHIP'S CAPTAIN

Louis H. Zimm, RV *Robert Gordon Sproul*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

Renger, Edward H. (Chief Scientist)	Staff Research Associate, SIO
Aljian, Corrie E.	Volunteer
Barnes, K'wasi H.	Volunteer
Gruber, Dennis W.	Staff Research Associate, SIO
Hays, Amy E.	Fishery Biololgist, NMFS
McConnico, Laurie A.	Volunteer
Nelson, Matthew M.	Volunteer
Pillard, Eugene G.	Resident Technician, SIO
Ramirez, Fernando	Staff Research Associate, SIO
Schmitt, James A.	Senior Electronics Technician, SIO
Swensen, Daryl L.	Biological Technician, NMFS
Todd, Mary M.	Volunteer

FIGURES

Cruise 9808

1. CalCOFI Cruise 9808, track and station positions.

2. Sections along CalCOFI line 90 (vertical exaggeration, 1000): A) potential density and geostrophic velocity (+ = northward); B) temperature; C) salinity; D) oxygen saturation; E) oxygen; F) chlorophyll-*a*; and G) phaeopigments.

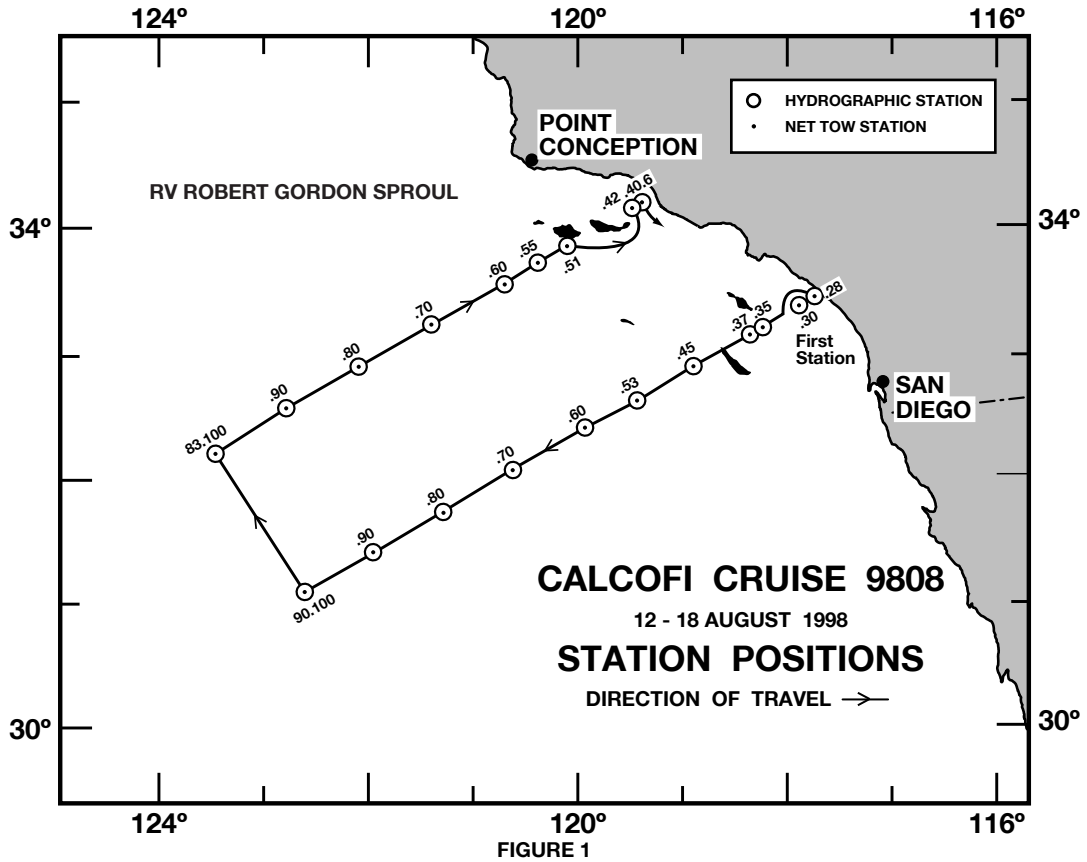

FIGURE 1

CALCOFI CRUISE 9808

12 - 15 AUGUST 1998

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90
GEOSTROPHIC VELOCITY RELATIVE TO 500m (cm/s)

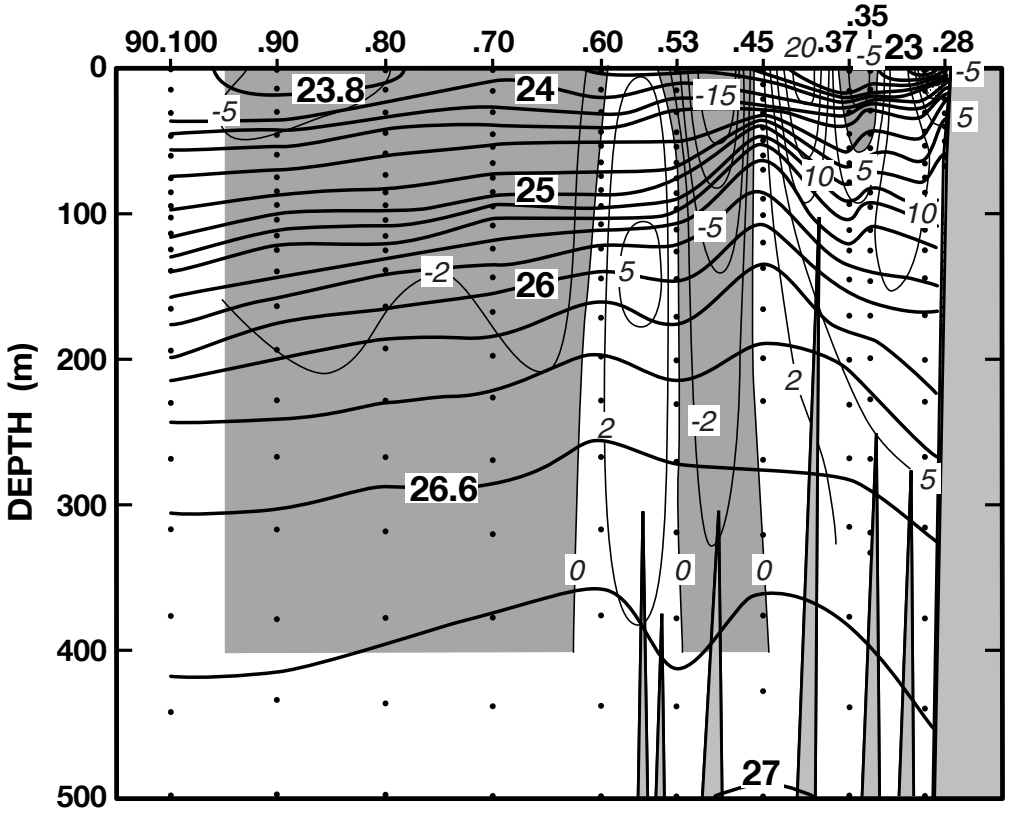

FIGURE 2A

CALCOFI CRUISE 9808

12 - 15 AUGUST 1998

TEMPERATURE (ºC) ALONG CALCOFI LINE 90

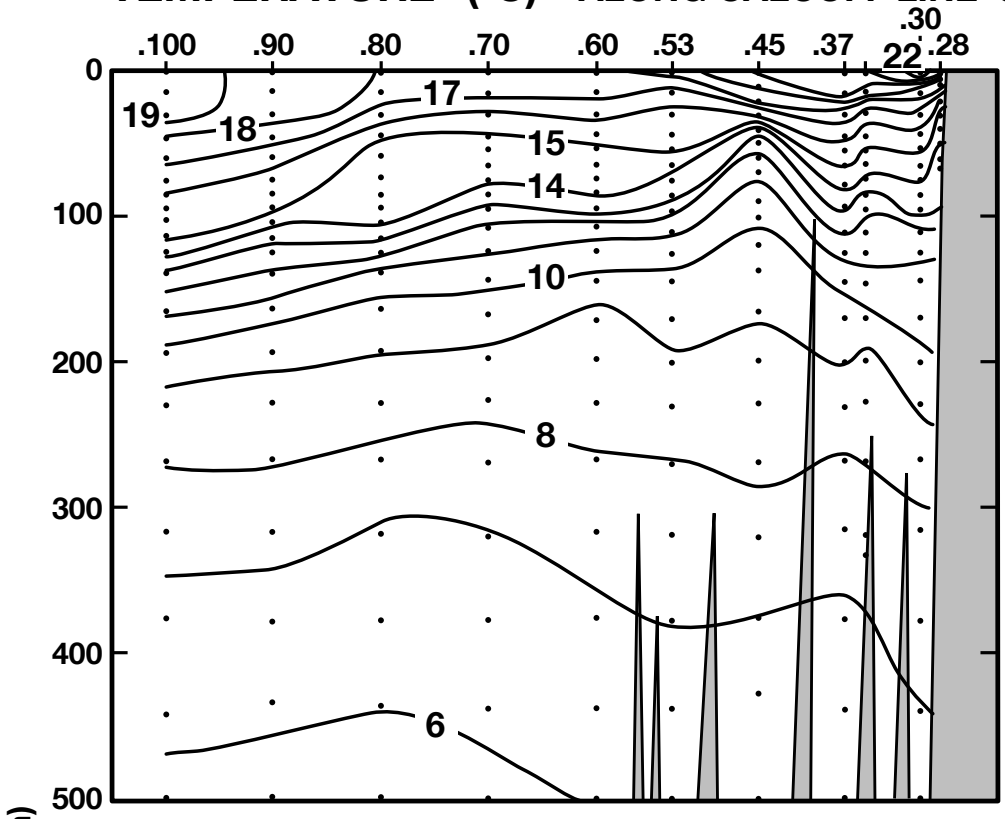

FIGURE 2B

SALINITY ALONG CALCOFI LINE 90

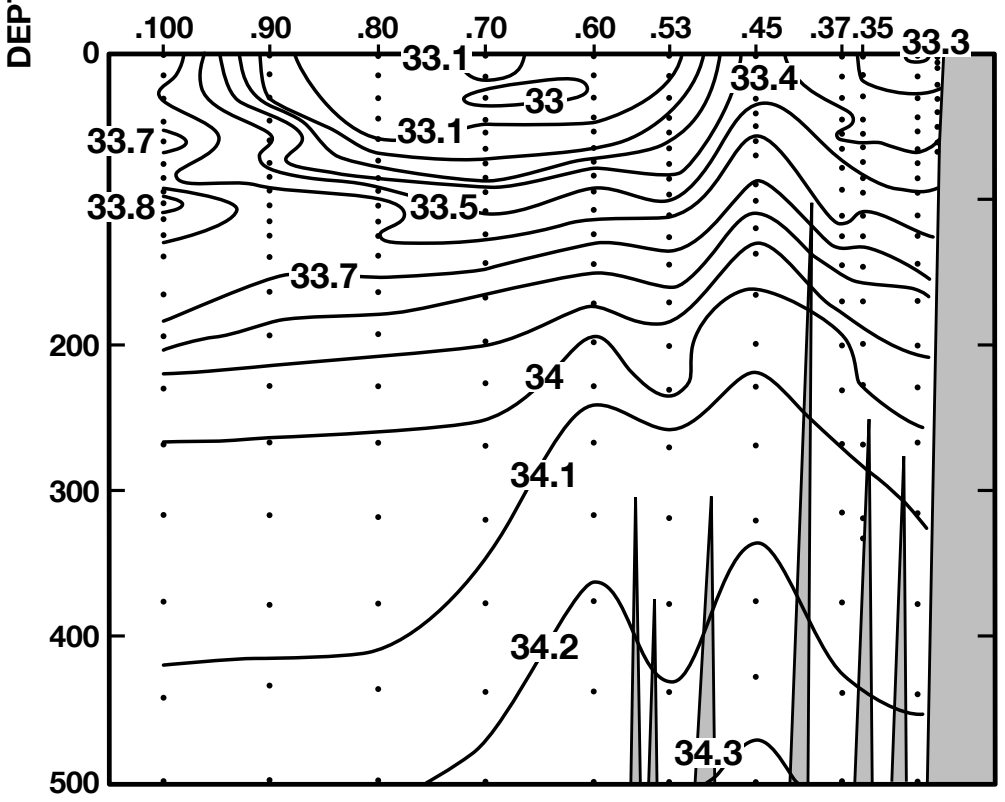

FIGURE 2C

CALCOFI CRUISE 9808

12 - 15 AUGUST 1998

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

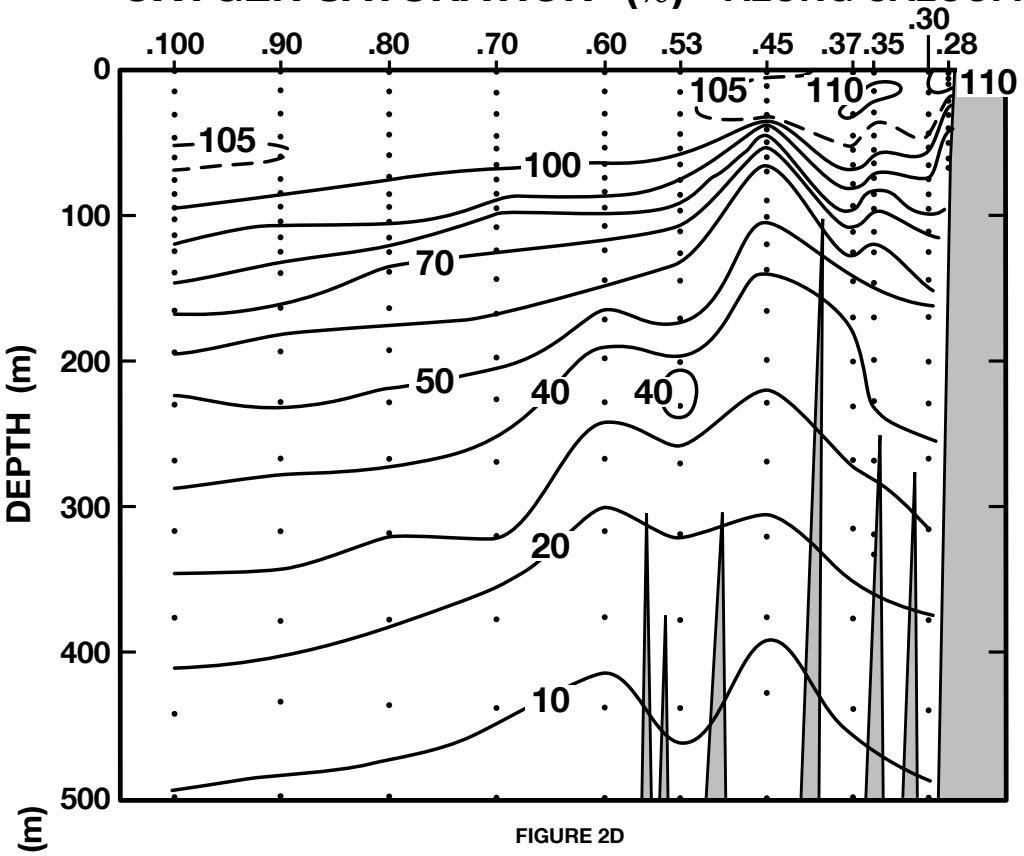

FIGURE 2D

OXYGEN (ml/l) ALONG CALCOFI LINE 90

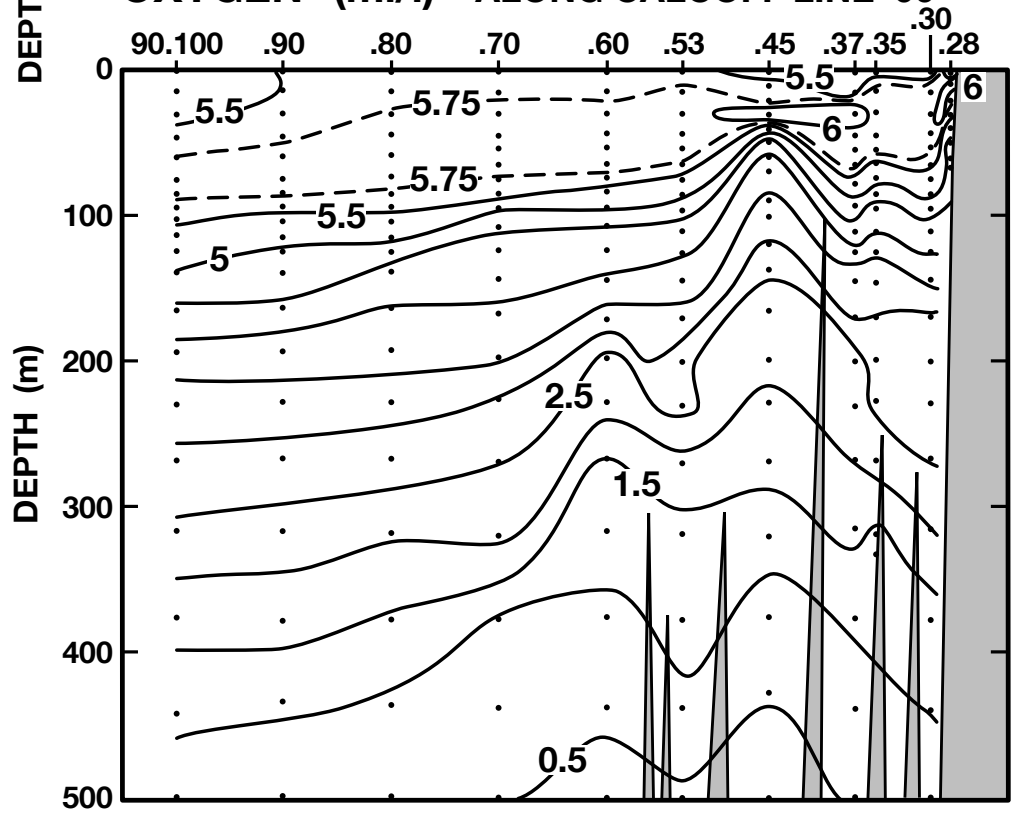

FIGURE 2E

CALCOFI CRUISE 9808

12 - 15 AUGUST 1998

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

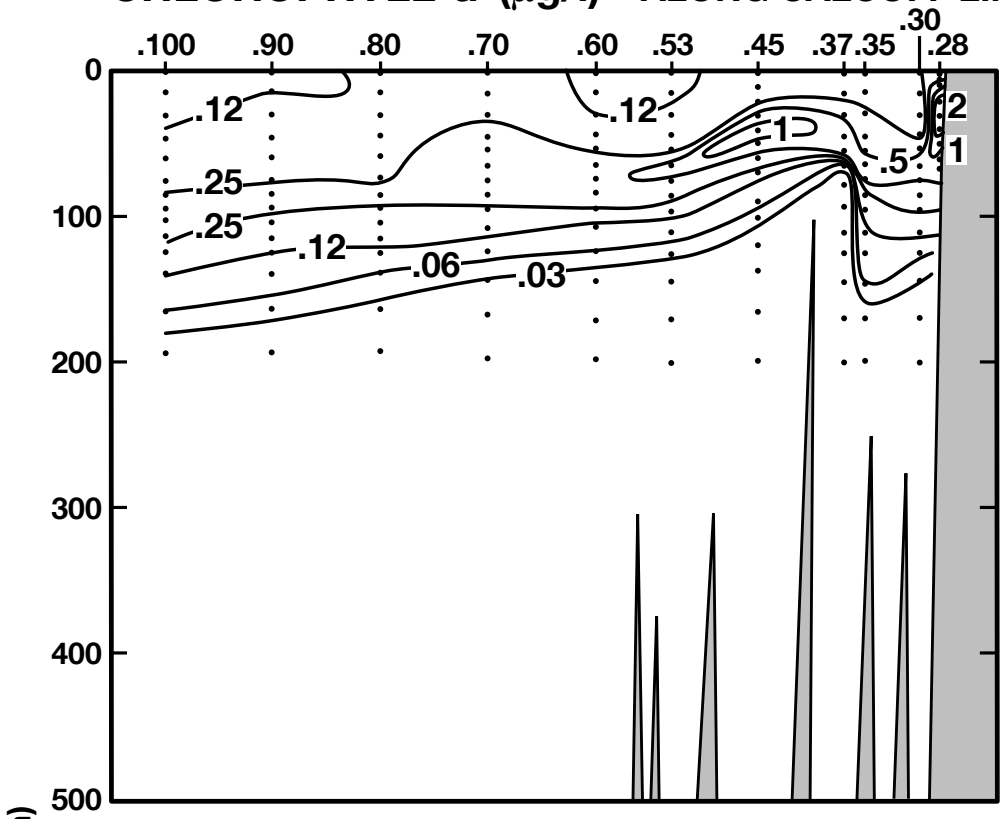

FIGURE 2F

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

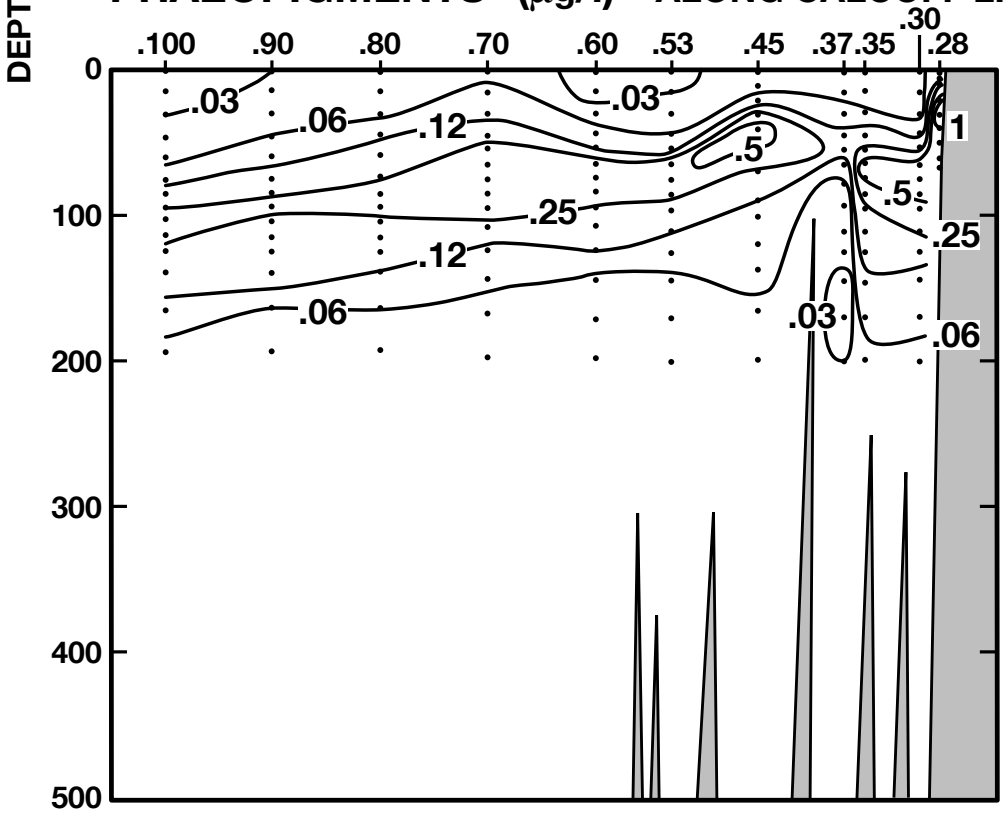

FIGURE 2G

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 13.4 N	119 24.5 W	17/08/98	1946 UTC	35 m	310 09 kn	260 01 07	2	1016.2 mb	19.8 C	18.3 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	19.23	19.23	33.319	23.680	420.6	0.000	5.69	107.5					0.42	0.15	0	
1	19.23	19.23	33.319	23.680	420.6	0.004	5.69	107.5					0.42	0.15	1	205
7	18.25	18.25	33.299	23.910	398.9	0.029	5.83	108.1					0.36	0.17	7	204
10 ISL	17.83	17.83	33.299	24.012	389.2	0.041	5.87	108.0					0.43	0.20	10	
12	17.55	17.55	33.301	24.082	382.7	0.048	5.89	107.8					0.49	0.22	12	203
20	16.22	16.22	33.321	24.408	351.8	0.078	6.00	107.0					0.55	0.27	20	202
27	15.40	15.40	33.322	24.593	334.4	0.102	5.75	100.9					1.14	0.63	27	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 10.9 N	119 30.6 W	17/08/98	1738 UTC	107 m	320 07 kn	300 02 04	2	1016.3 mb	18.9 C	18.0 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	20.08	20.08	33.327	23.466	441.0	0.000	5.55	106.5					0.33	0.12	0	
1	20.08	20.08	33.327	23.466	441.0	0.004	5.55	106.5					0.33	0.12	1	211
10	19.77	19.77	33.323	23.545	433.9	0.044	5.62	107.3					0.36	0.13	10	210
20	18.39	18.39	33.324	23.895	400.8	0.086	5.81	108.0					0.57	0.24	20	209
30 ISL	16.04	16.04	33.326	24.453	347.8	0.123	5.76	102.3					0.62	0.32	30	
31	15.81	15.81	33.330	24.508	342.6	0.126	5.75	101.7					0.63	0.32	31	208
41	14.73	14.72	33.381	24.784	316.5	0.159	5.41	93.6					0.54	0.33	41	207
50 ISL	14.24	14.23	33.411	24.911	304.7	0.187	5.24	89.8					0.51	0.39	50	
51	14.19	14.18	33.414	24.924	303.5	0.190	5.22	89.4					0.51	0.39	51	206
61	13.07	13.06	33.482	25.205	276.9	0.219	4.84	81.0					0.27	0.33	61	205
71	12.19	12.18	33.549	25.429	255.8	0.246	4.46	73.3					0.20	0.27	71	204
75 ISL	12.04	12.03	33.560	25.466	252.4	0.256	4.38	71.8					0.18	0.25	75	
81	11.88	11.87	33.571	25.504	248.8	0.271	4.29	70.1					0.16	0.22	81	203
88	11.55	11.54	33.593	25.583	241.5	0.288	4.14	67.1					0.11	0.17	88	202
99	11.21	11.20	33.636	25.678	232.6	0.314	3.89	62.6					0.08	0.18	99	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 52.6 N	120 8.1 W	17/08/98	1026 UTC	105 m	340 14 kn			1014.0 mb	16.5 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	17.43	17.43	33.328	24.130	377.6	0.000	5.80	105.9					0.56	0.21	0	
1	17.43	17.43	33.328	24.130	377.6	0.004	5.80	105.9					0.56	0.21	1	209
10	15.90	15.90	33.339	24.494	343.3	0.036	6.01	106.5					0.31	0.12	10	208
20	14.49	14.49	33.373	24.828	311.7	0.069	5.85	100.8					1.21	0.48	20	207
30	13.91	13.91	33.426	24.991	296.5	0.099	5.43	92.5					0.77	0.49	30	206
41	13.54	13.53	33.452	25.087	287.6	0.131	5.20	87.9					0.51	0.47	41	205
50 ISL	13.34	13.33	33.462	25.136	283.2	0.157	5.03	84.7					0.55	0.46	50	
51	13.30	13.29	33.464	25.145	282.4	0.160	5.00	84.1					0.55	0.46	51	204
61	12.24	12.23	33.544	25.415	256.9	0.187	4.49	73.9					0.26	0.26	61	203
71	11.79	11.78	33.579 D	25.527	246.4	0.212									71	202
75 ISL	11.55	11.54	33.603	25.590	240.5	0.222	4.10	66.5					0.16	0.19	75	
85	10.96	10.95	33.665	25.745	225.9	0.245	3.82	61.2					0.09	0.14	85	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 44.8 N	120 25.1 W	17/08/98	0548 UTC	1001 m	310 17 kn			1014.8 mb	17.6 C	16.0 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	19.36	19.36	33.318	23.646	423.8	0.000	5.56	105.3					0.19	0.06	0	
1	19.36	19.36	33.318	23.646	423.9	0.004	5.56	105.3					0.19	0.06	1	220
9	19.34	19.34	33.319	23.652	423.6	0.038	5.57	105.5					0.22	0.07	9	219
10 ISL	19.31	19.31	33.319	23.660	422.9	0.042	5.57	105.4					0.22	0.07	10	
20 ISL	19.03	19.03	33.320	23.732	416.3	0.084	5.60	105.4					0.28	0.09	20	
21	19.00	19.00	33.320	23.740	415.6	0.088	5.60	105.3					0.28	0.09	21	218
30	16.79	16.79	33.373	24.317	360.8	0.123	6.02	108.6					0.65	0.34	30	217
39	14.54	14.53	33.417	24.852	310.0	0.154	5.81	100.2					1.69	0.81	39	216
49	13.47	13.46	33.481	25.124	284.3	0.183	5.03	84.9					1.04	0.68	49	215
50 ISL	13.34	13.33	33.488	25.156	281.3	0.186	4.95	83.3					0.98	0.66	50	
59	12.24	12.23	33.548	25.418	256.5	0.210	4.32	71.1					0.52	0.46	59	214
70	11.63	11.62	33.597	25.571	242.2	0.238	3.95	64.2					0.22	0.32	70	213
75 ISL	11.42	11.41	33.618	25.626	237.1	0.250	3.83	62.0					0.20	0.28	75	
85	11.04	11.03	33.656	25.724	227.9	0.273	3.67	58.9					0.16	0.22	85	212
99	10.43	10.42	33.703	25.868	214.4	0.304	3.57	56.6					0.05	0.17	99	211
100 ISL	10.41	10.40	33.709	25.876	213.7	0.306	3.54	56.1					0.05	0.17	100	
125 ISL	9.78	9.77	33.838	26.084	194.4	0.357	3.01	47.0					0.02	0.10	126	
130	9.65	9.64	33.860	26.123	190.8	0.367	2.94	45.8					0.02	0.09	131	210
138	9.30	9.28	33.878	26.194	184.1	0.382	3.01	46.6					0.01	0.06	139	209
150 ISL	9.03	9.01	33.948	26.292	174.9	0.403	2.79	42.9					0.01	0.06	151	
169	8.83	8.81	34.064	26.415	163.6	0.435	2.27	34.8					0.02	0.05	170	208
200	8.50	8.48	34.112	26.504	155.7	0.485	1.99	30.3					0.01	0.05	201	207
227	8.49	8.47	34.168	26.550	151.8	0.526	1.63	24.8							228	206
250 ISL	8.43	8.40	34.178	26.568	150.6	0.561	1.58	24.0							251	
267	8.35	8.32	34.177	26.579	149.8	0.587	1.54	23.4							269	205
300 ISL	8.15	8.12	34.192	26.622	146.3	0.636	1.42	21.4							302	
318	8.02	7.99	34.201	26.648	144.0	0.662	1.34	20.2							320	204
377	7.55	7.51	34.214	26.728	137.2	0.745	1.11	16.5							379	203
400 ISL	7.39	7.35	34.215	26.752	135.2	0.776	1.04	15.4							403	
436	7.10	7.06	34.215	26.793	131.6	0.824	0.93	13.7							439	202
500 ISL	6.30	6.25	34.221	26.905	121.2	0.905	0.74	10.7							503	
531	5.91	5.86	34.227	26.959	116.0	0.942	0.65	9.3							535	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 34.7 N	120 45.5 W	17/08/98	0036 UTC	1411 m	320 15 kn	340 05 09	1	1013.9 mb	17.8 C	16.0 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	17.38	17.38	33.308	24.127	377.9	0.000	5.69	103.8					0.22	0.10	0	
2	17.38	17.38	33.308	24.127	378.0	0.008	5.69	103.8					0.22	0.10	2	220
9	17.36	17.36	33.309	24.133	377.7	0.034	5.67	103.4					0.24	0.09	9	219
10 ISL	17.35	17.35	33.309	24.135	377.5	0.038	5.67	103.3					0.24	0.09	10	
19	17.30	17.30	33.306	24.145	376.8	0.072	5.69	103.6					0.24	0.10	19	218
20 ISL	17.24	17.24	33.305	24.159	375.6	0.075	5.71	103.8					0.24	0.11	20	
29	16.22	16.22	33.259	24.361	356.6	0.108	5.86	104.4					0.27	0.16	29	217
30 ISL	15.98	15.98	33.239	24.400	352.9	0.112	5.87	104.1					0.32	0.19	30	
39	13.85	13.84	33.106	24.756	319.1	0.142	5.94	100.8					0.73	0.43	39	216
50	12.65	12.64	33.214	25.080	288.5	0.176	5.19	86.0					0.57	0.46	50	215
58	12.26	12.25	33.325	25.241	273.3	0.198	4.79	78.7					0.42	0.34	58	214
70	11.81	11.80	33.484	25.450	253.8	0.230	4.35	70.9					0.26	0.19	70	213
75 ISL	11.45	11.44	33.538	25.558	243.5	0.242	4.19	67.8					0.18	0.16	75	
83	10.85	10.84	33.610	25.722	228.0	0.261	3.99	63.8					0.08	0.14	83	212
99	10.23	10.22	33.687	25.890	212.3	0.296	3.91	61.7					0.05	0.10	99	211
100 ISL	10.19	10.18	33.693	25.902	211.2	0.298	3.91	61.6					0.05	0.10	100	
119	9.43	9.42	33.813	26.122	190.6	0.337	3.82	59.2					0.01	0.06	120	210
125 ISL	9.26	9.25	33.839	26.170	186.1	0.348	3.73	57.6					0.01	0.06	126	
139	8.94	8.93	33.886	26.258	178.0	0.373	3.50	53.7					0.00	0.06	140	209
150 ISL	8.77	8.75	33.919	26.311	173.1	0.393	3.42	52.3					0.00	0.05	151	
171	8.47	8.45	33.966	26.394	165.5	0.428	3.31	50.3					0.00	0.04	172	208
199	7.81	7.79	34.002	26.521	153.7	0.473	3.00	44.9					0.00	0.04	200	207
200 ISL	7.79	7.77	34.003	26.525	153.4	0.474	3.00	44.9							201	
229	7.38	7.36	34.008	26.588	147.7	0.518	2.93	43.4							230	206
250 ISL	7.19	7.17	34.012	26.618	145.1	0.549	2.72	40.1							251	
270	7.04	7.01	34.018	26.643	143.0	0.578	2.45	36.0							272	205
300 ISL	6.75	6.72	34.037	26.698	138.1	0.620	2.04	29.8							302	
318	6.59	6.56	34.053	26.732	135.0	0.644	1.79	26.0							320	204
376	6.21	6.18	34.127	26.840	125.3	0.720	1.05	15.1							378	203
400 ISL	6.05	6.02	34.143	26.874	122.4	0.750	0.89	12.8							403	
436	5.83	5.79	34.163	26.917	118.5	0.793	0.74	10.6							439	202
500 ISL	5.49	5.45	34.221	27.005	110.7	0.866	0.50	7.1							503	
527	5.34	5.30	34.246	27.043	107.3	0.896	0.40	5.7							531	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 14.7 N	121 26.6 W	16/08/98	1755 UTC	3800 m	340 17 kn	340 06 05	2	1016.1 mb	16.8 C	15.2 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	16.65	16.65	33.067	24.114	379.2	0.000	5.74	103.1					0.31	0.08	0	
2	16.65	16.65	33.067	24.114	379.3	0.008	5.74	103.1					0.31	0.08	2	220
10 ISL	16.81	16.81	33.168	24.154	375.7	0.038	5.79	104.3					0.54	0.13	10	
12	16.86	16.86	33.200	24.167	374.5	0.045	5.81	104.8					0.61	0.15	12	219
20	16.92	16.92	33.245	24.188	372.8	0.075	5.81	105.0					0.74	0.17	20	218
28	16.72	16.72	33.228	24.222	369.8	0.105	5.82	104.7					0.75	0.16	28	217
30 ISL	16.56	16.56	33.199	24.237	368.4	0.112	5.82	104.4					0.69	0.16	30	
39	15.77	15.76	33.049	24.301	362.6	0.145	5.84	103.0					0.38	0.14	39	216
49	15.23	15.22	33.341	24.646	330.0	0.180	5.87	102.6					0.22	0.14	49	215
50 ISL	15.23	15.22	33.365	24.664	328.3	0.183	5.84	102.1					0.22	0.15	50	
60	15.19	15.18	33.531	24.801	315.6	0.215	5.59	97.7					0.25	0.26	60	214
69	14.72	14.71	33.555	24.921	304.3	0.243	5.64	97.7					0.26	0.26	69	213
75 ISL	14.00	13.99	33.490	25.023	294.7	0.261	5.48	93.5					0.25	0.26	75	
84	12.90	12.89	33.412	25.185	279.4	0.287	5.16	86.0					0.22	0.26	84	212
99	12.16	12.15	33.568	25.450	254.5	0.327	4.79	78.7					0.14	0.20	99	211
100 ISL	12.07	12.06	33.575	25.472	252.4	0.330	4.76	78.1					0.13	0.19	100	
118	10.48	10.47	33.681	25.843	217.3	0.372	4.33	68.7					0.04	0.09	119	210
125 ISL	10.24	10.23	33.707	25.905	211.5	0.387	4.30	67.8					0.04	0.07	126	
138	9.99	9.97	33.750	25.981	204.5	0.414	4.25	66.7					0.03	0.05	139	209
150 ISL	9.66	9.64	33.821	26.091	194.2	0.438	4.26	66.4					0.02	0.03	151	
167	9.19	9.17	33.921	26.246	179.7	0.470	4.27	65.9					0.00	0.02	168	208
196	8.47	8.45	33.997	26.419	163.7	0.519	3.82	58.0					0.00	0.02	197	207
200 ISL	8.39	8.37	33.999	26.433	162.4	0.526	3.77	57.2							201	
228	7.89	7.87	34.000	26.508	155.5	0.570	3.39	50.8							229	206
250 ISL	7.55	7.53	34.015	26.570	149.9	0.604	2.83	42.1							251	
267	7.32	7.29	34.029	26.613	145.9	0.629	2.40	35.5							269	205
300 ISL	7.03	7.00	34.056	26.675	140.4	0.676	1.96	28.8							302	
319	6.87	6.84	34.068	26.707	137.7	0.703	1.79	26.2							321	204
377	6.07	6.04	34.084	26.824	126.7	0.779	1.25	18.0							379	203
400 ISL	5.92	5.89	34.101	26.857	123.9	0.808	1.07	15.3							403	
437	5.78	5.74	34.137	26.903	119.9	0.853	0.82	11.7							440	202
500 ISL	5.57	5.53	34.219	26.994	111.9	0.926	0.47	6.7							503	
514	5.52	5.48	34.237	27.014	110.1	0.942	0.39	5.5							517	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.8 N	122 8.0 W	16/08/98	1046 UTC	4187 m	350 18 kn			1015.0 mb	16.7 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	17.82	17.82	33.120	23.877	401.7	0.000	5.53	101.6					0.14	0.04	0	
2	17.82	17.82	33.120	23.878	401.8	0.008	5.53	101.6					0.14	0.04	2	220
10 ISL	17.82	17.82	33.120	23.878	402.0	0.040	5.53	101.6					0.15	0.03	10	
15	17.82	17.82	33.121	23.879	402.1	0.060	5.53	101.6					0.16	0.03	15	219
20 ISL	17.81	17.81	33.119	23.880	402.2	0.080	5.53	101.6					0.16	0.03	20	
30	17.80	17.79	33.116	23.880	402.5	0.121	5.53	101.5					0.16	0.04	30	218
45	17.71	17.70	33.111	23.899	401.2	0.181	5.56	101.9					0.22	0.05	45	217
50 ISL	17.39	17.38	33.136	23.995	392.2	0.201	5.63	102.6					0.27	0.07	50	
60	16.58	16.57	33.213	24.244	368.7	0.239	5.77	103.5					0.34	0.12	60	216
75 ISL	15.52	15.51	33.354	24.593	335.9	0.292	5.84	102.7					0.29	0.15	75	
76	15.47	15.46	33.363	24.611	334.2	0.295	5.84	102.6					0.28	0.15	76	215
86	15.36	15.35	33.415	24.675	328.4	0.328	5.81	101.9					0.26	0.20	86	214
93	15.31	15.30	33.520	24.767	319.8	0.351	5.72	100.2					0.24	0.23	93	213
100 ISL	15.16	15.14	33.590	24.854	311.7	0.373	5.61	98.1					0.25	0.26	100	
108	14.83	14.81	33.629	24.956	302.2	0.397	5.48	95.2					0.25	0.29	108	212
114	14.45	14.43	33.630	25.038	294.5	0.415	5.38	92.7					0.23	0.29	114	211
125 ISL	13.13	13.11	33.565	25.259	273.5	0.447	5.10	85.5					0.17	0.22	126	
127	12.87	12.85	33.556	25.304	269.3	0.452	5.05	84.2					0.16	0.21	128	210
140	11.68	11.66	33.617	25.579	243.2	0.485	4.76	77.4					0.11	0.16	141	209
150 ISL	11.01	10.99	33.654	25.729	229.0	0.509	4.56	73.1					0.08	0.12	151	
163	10.33	10.31	33.700	25.884	214.3	0.538	4.30	68.0					0.05	0.07	164	208
191	9.27	9.25	33.841	26.171	187.4	0.594	3.66	56.6					0.01	0.04	192	207
200 ISL	9.06	9.04	33.890	26.243	180.6	0.611	3.37	51.8							201	
229	8.61	8.59	34.017	26.414	164.9	0.661	2.56	39.0							230	206
250 ISL	8.37	8.34	34.047	26.474	159.4	0.695	2.47	37.4							251	
263	8.22	8.19	34.051	26.500	157.1	0.715	2.41	36.4							264	205
300 ISL	7.58	7.55	34.036	26.583	149.6	0.772	2.49	37.1							302	
317	7.27	7.24	34.025	26.618	146.3	0.797	2.51	37.1							319	204
373	6.41	6.38	34.030	26.738	135.1	0.876	1.88	27.2							375	203
400 ISL	6.46	6.42	34.105	26.791	130.6	0.912	1.38	20.0							402	
436	6.61	6.57	34.211	26.855	125.2	0.958	0.77	11.2							439	202
500 ISL	6.04	6.00	34.223	26.939	117.6	1.036	0.58	8.3							503	
519	5.87	5.82	34.227	26.964	115.4	1.058	0.52	7.4							522	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 34.6 N	122 48.6 W	16/08/98	0312 UTC	4265 m	360 17 kn			1014.9 mb	17.4 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	18.20	18.20	33.167	23.821	407.1	0.000	5.51	102.0					0.13	0.04	0	
1	18.20	18.20	33.167	23.821	407.2	0.004	5.51	102.0					0.13	0.04	1	220
10 ISL	18.20	18.20	33.184	23.834	406.2	0.041	5.50	101.8					0.13	0.03	10	
15	18.20	18.20	33.205	23.851	404.8	0.061	5.50	101.8					0.13	0.03	15	219
20 ISL	18.17	18.17	33.209	23.861	404.0	0.081	5.50	101.8					0.15	0.03	20	
30	18.11	18.10	33.274	23.926	398.1	0.121	5.51	101.9					0.21	0.05	30	218
46	17.40	17.39	33.463	24.243	368.5	0.183	5.71	104.3					0.25	0.08	46	217
50 ISL	17.06	17.05	33.455	24.318	361.5	0.197	5.77	104.7					0.26	0.09	50	
58	16.36	16.35	33.417	24.451	348.9	0.226	5.87	105.0					0.27	0.11	58	216
75	15.50	15.49	33.391	24.625	332.8	0.284	5.90	103.7					0.24	0.11	75	215
86	15.40	15.39	33.441	24.686	327.3	0.320	5.86	102.8					0.27	0.13	86	214
94	15.09	15.08	33.503	24.802	316.5	0.346	5.68	99.1					0.28	0.26	94	213
100 ISL	14.66	14.65	33.544	24.927	304.7	0.364	5.47	94.6					0.27	0.33	100	
104	14.37	14.35	33.569	25.008	297.1	0.376	5.35	92.0					0.27	0.35	104	212
114	14.04	14.02	33.615	25.113	287.4	0.406	5.26	89.9					0.30	0.28	114	211
124	13.46	13.44	33.602	25.222	277.1	0.434	5.17	87.3					0.25	0.25	125	210
125 ISL	13.38	13.36	33.601	25.237	275.7	0.436	5.15	86.8					0.24	0.25	126	
139	12.24	12.22	33.601	25.461	254.5	0.474	4.88	80.3					0.15	0.24	140	209
150 ISL	11.43	11.41	33.630	25.635	238.0	0.501	4.66	75.4					0.10	0.18	151	
165	10.48	10.46	33.696	25.855	217.2	0.535	4.36	69.1					0.05	0.08	166	208
196	9.20	9.18	33.872	26.207	184.1	0.597	3.78	58.3					0.00	0.03	197	207
200 ISL	9.12	9.10	33.888	26.232	181.7	0.604	3.79	58.4							201	
227	8.71	8.69	33.962	26.355	170.4	0.652	3.91	59.7							228	206
250 ISL	8.25	8.22	33.986	26.444	162.1	0.690	3.63	54.9							251	
268	7.90	7.87	33.996	26.504	156.6	0.719	3.29	49.3							269	205
300 ISL	7.53	7.50	34.028	26.583	149.5	0.768	2.65	39.4							302	
318	7.34	7.31	34.042	26.621	146.0	0.794	2.31	34.2							320	204
375	6.45	6.42	34.041	26.742	134.8	0.874	1.83	26.5							377	203
400 ISL	6.26	6.22	34.067	26.787	130.8	0.908	1.52	21.9							402	
437	6.07	6.03	34.110	26.846	125.6	0.955	1.07	15.4							440	202
500 ISL	5.58	5.54	34.142	26.932	117.8	1.032	0.78	11.1							503	
531	5.34	5.30	34.159	26.974	113.8	1.068	0.64	9.0							535	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 14.8 N	123 29.3 W	15/08/98	2032 UTC	4180 m	350 11 kn	350 03 09	2	1016.5 mb	18.9 C	17.7 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	18.79	18.79	33.481	23.915	398.2	0.000	5.42	101.7					0.13	0.03	0	
1	18.79	18.79	33.481	23.915	398.2	0.004	5.42	101.7					0.13	0.03	1	220
10 ISL	18.78	18.78	33.482	23.918	398.2	0.040	5.41	101.4					0.13	0.03	10	
16	18.77	18.77	33.483	23.922	398.1	0.064	5.41	101.4					0.13	0.03	16	219
20 ISL	18.73	18.73	33.489	23.937	396.8	0.080	5.42	101.5					0.13	0.03	20	
30	18.64	18.63	33.503	23.970	394.0	0.119	5.43	101.6					0.13	0.04	30	218
46	17.50	17.49	33.587	24.314	361.7	0.180	5.71	104.5					0.20	0.06	46	217
50 ISL	17.06	17.05	33.548	24.389	354.7	0.194	5.77	104.7					0.21	0.07	50	
59	16.23	16.22	33.495	24.541	340.4	0.225	5.85	104.4					0.23	0.09	59	216
74	16.29	16.28	33.783	24.749	321.1	0.275	5.75	102.9					0.26	0.11	74	215
75 ISL	16.28	16.27	33.789	24.756	320.5	0.278	5.75	102.9					0.26	0.11	75	
84	16.15	16.14	33.820	24.810	315.6	0.307	5.72	102.1					0.28	0.14	84	214
94	15.95	15.94	33.898	24.916	305.9	0.338	5.57	99.1					0.28	0.37	94	213
100 ISL	15.58	15.56	33.849	24.961	301.7	0.356	5.58	98.5					0.28	0.34	100	
104	15.33	15.31	33.810	24.987	299.3	0.368	5.59	98.2					0.28	0.32	104	212
115	15.10	15.08	33.829	25.052	293.4	0.401	5.51	96.3					0.25	0.33	115	211
123	14.89	14.87	33.861	25.123	286.9	0.424	5.39	93.9					0.21	0.32	124	210
125 ISL	14.66	14.64	33.850	25.164	283.0	0.429	5.34	92.5					0.19	0.31	126	
138	12.87	12.85	33.756	25.459	254.8	0.464	4.99	83.3					0.10	0.20	139	209
150 ISL	11.84	11.82	33.724	25.632	238.4	0.494	4.80	78.4					0.06	0.13	151	
164	11.01	10.99	33.717	25.779	224.6	0.526	4.61	73.9					0.05	0.08	165	208
195	9.67	9.65	33.784	26.062	198.0	0.592	4.05	63.1					0.01	0.03	196	207
200 ISL	9.56	9.54	33.800	26.092	195.1	0.602	4.02	62.5							201	
230	9.10	9.07	33.895	26.241	181.4	0.658	3.88	59.7							231	206
250 ISL	8.65	8.62	33.942	26.349	171.4	0.694	3.56	54.3							251	
268	8.24	8.21	33.975	26.438	163.1	0.724	3.24	48.9							269	205
300 ISL	7.69	7.66	34.004	26.542	153.5	0.774	2.90	43.3							302	
318	7.42	7.39	34.012	26.587	149.4	0.802	2.73	40.5							320	204
378	6.65	6.62	34.042	26.716	137.5	0.888	1.93	28.1							380	203
400 ISL	6.41	6.37	34.048	26.753	134.1	0.918	1.72	24.9							402	
437	6.07	6.03	34.064	26.809	129.0	0.966	1.41	20.3							440	202
500 ISL	5.76	5.72	34.146	26.913	119.7	1.045	0.81	11.6							503	
511	5.71	5.67	34.160	26.931	118.2	1.058	0.70	10.0							514	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.0 N	117 46.3 W	13/08/98	0236 UTC	73 m	340	08 kn	300 02 10	1	1016.4 mb	22.3 C	21.1 C		6/8	AC

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	21.37	21.37	33.279	23.085	477.3	0.000	6.12	120.3					0.55	0.17	0	
1		21.37	21.37	33.279	23.086	477.4	0.005	6.12	120.3					0.55	0.17	1	209
5		18.78	18.78	33.295	23.775	411.7	0.023	5.94	111.3					0.43	0.10	5	208
9		18.10	18.10	33.290	23.940	396.1	0.039	6.18	114.3					0.60	0.23	9	207
10	ISL	17.84	17.84	33.285	23.999	390.5	0.043	6.15	113.1					0.71	0.27	10	
20		15.37	15.37	33.280	24.567	336.6	0.079	5.89	103.2					2.20	0.90	20	206
30		14.68	14.68	33.331	24.756	318.9	0.112	5.58	96.5					3.74	1.83	30	205
39		14.27	14.26	33.362	24.867	308.6	0.140	5.27	90.4					2.47	0.92	39	204
49		13.93	13.92	33.370	24.944	301.5	0.171	4.98	84.8					1.12	0.80	49	203
50	ISL	13.91	13.90	33.374	24.952	300.8	0.174	4.98	84.8					1.04	0.79	50	
60		13.71	13.70	33.412	25.022	294.4	0.203	5.00	84.8					0.66	0.69	60	202
66		13.59	13.58	33.422	25.055	291.4	0.221	4.89	82.7					0.67	0.69	66	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 25.0 N	117 54.2 W	12/08/98	2309 UTC	615 m	290	07 kn	270 02 12	1	1015.1 mb	23.1 C	22.5 C		5/8	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	22.09	22.09	33.308	22.909	494.2	0.000	5.37	106.9					0.19	0.04	0	
1		22.09	22.09	33.308	22.909	494.2	0.005	5.37	106.9					0.19	0.04	1	220
10	ISL	20.13	20.13	33.269	23.410	446.8	0.047	5.63	108.1					0.21	0.04	10	
15		18.59	18.59	33.268	23.802	409.4	0.069	5.82	108.6					0.22	0.04	15	219
20	ISL	17.73	17.73	33.282	24.024	388.4	0.089	5.89	108.1					0.19	0.04	20	
30		16.49	16.49	33.310	24.338	358.8	0.126	5.96	106.8					0.15	0.05	30	218
43		15.65	15.64	33.301	24.522	341.6	0.172	5.99	105.6					0.20	0.09	43	217
50	ISL	15.28	15.27	33.329	24.625	332.0	0.195	5.91	103.4					0.31	0.15	50	
53		15.14	15.13	33.344	24.667	328.0	0.205	5.86	102.3					0.38	0.20	53	216
64		14.64	14.63	33.391	24.812	314.6	0.240	5.63	97.3					0.85	0.57	64	215
74		14.04	14.03	33.455	24.988	298.1	0.271	5.27	90.0					0.50	0.51	74	214
75	ISL	13.99	13.98	33.460	25.002	296.7	0.274	5.24	89.4					0.48	0.52	75	
84		13.61	13.60	33.490	25.104	287.3	0.300	5.05	85.5					0.39	0.56	84	213
94		13.17	13.16	33.504	25.203	278.0	0.328	4.90	82.2					0.30	0.40	94	212
100	ISL	12.72	12.71	33.519	25.304	268.5	0.345	4.72	78.4					0.24	0.33	100	
110		11.94	11.93	33.556	25.482	251.7	0.371	4.38	71.6					0.15	0.25	110	211
124		11.23	11.21	33.620	25.663	234.7	0.405	4.01	64.6					0.07	0.14	125	210
125	ISL	11.19	11.17	33.621	25.671	234.0	0.407	4.01	64.5					0.07	0.14	126	
143		10.64	10.62	33.654	25.795	222.5	0.448	3.89	61.9					0.03	0.10	144	209
150	ISL	10.56	10.54	33.715	25.856	216.8	0.464	3.60	57.2					0.02	0.09	151	
168		10.42	10.40	33.871	26.002	203.3	0.502	2.86	45.3					0.01	0.07	169	208
199		9.77	9.75	33.886	26.125	192.1	0.563	2.95	46.1					0.01	0.05	200	207
200	ISL	9.75	9.73	33.887	26.129	191.7	0.565	2.95	46.1							201	
228		9.17	9.15	33.935	26.261	179.5	0.617	2.87	44.3							229	206
250	ISL	8.81	8.78	33.990	26.362	170.3	0.655	2.68	41.0							251	
266		8.57	8.54	34.030	26.430	164.0	0.682	2.51	38.2							267	205
300	ISL	8.03	8.00	34.081	26.552	152.7	0.736	2.15	32.3							302	
314		7.83	7.80	34.097	26.594	148.9	0.757	2.00	30.0							316	204
377		7.44	7.40	34.172	26.710	138.7	0.847	1.34	19.9							379	203
400	ISL	7.27	7.23	34.179	26.740	136.1	0.879	1.21	17.9							402	
439		6.99	6.95	34.188	26.786	132.1	0.931	1.02	15.0							442	202
500	ISL	6.63	6.58	34.253	26.887	123.3	1.009	0.63	9.2							503	
518		6.52	6.47	34.273	26.917	120.5	1.031	0.51	7.4							521	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 15.1 N	118 15.1 W	13/08/98	0736 UTC	335 m	270	10 kn			1017.9 mb	21.2 C	20.5 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	20.92	20.92	33.294	23.219	464.6	0.000	5.43	105.8					0.13	0.03	0	
1		20.92	20.92	33.294	23.219	464.6	0.005	5.43	105.8					0.13	0.03	1	218
10	ISL	20.11	20.11	33.275	23.419	445.8	0.046	5.70	109.4					0.16	0.04	10	
14		19.46	19.46	33.272	23.586	430.1	0.063	5.85	111.0					0.18	0.04	14	217
20	ISL	18.21	18.21	33.311	23.929	397.5	0.088	5.89	109.1					0.21	0.05	20	
29		16.42	16.42	33.394	24.419	351.1	0.122	5.96	106.7					0.26	0.07	29	216
30	ISL	16.32	16.32	33.394	24.442	348.9	0.125	5.96	106.5					0.26	0.07	30	
45		15.40	15.39	33.362	24.624	332.0	0.176	5.86	102.8					0.31	0.17	45	215
50	ISL	15.15	15.14	33.363	24.680	326.8	0.193	5.82	101.6					0.34	0.22	50	
55		14.90	14.89	33.374	24.743	320.9	0.209	5.79	100.6					0.41	0.32	55	214
64		14.38	14.37	33.440	24.905	305.7	0.237	5.46	93.9					0.78	0.75	64	213
74		13.86	13.85	33.468	25.035	293.5	0.267	5.24	89.1					0.51	0.50	74	212
75	ISL	13.77	13.76	33.473	25.057	291.4	0.270	5.19	88.1					0.48	0.48	75	
85		12.82	12.81	33.524	25.288	269.7	0.298	4.69	78.1					0.24	0.31	85	211
94		12.20	12.19	33.560	25.436	255.7	0.322	4.39	72.2					0.18	0.24	94	210
100	ISL	11.90	11.89	33.578	25.506	249.1	0.337	4.21	68.8					0.15	0.21	100	
110		11.52	11.51	33.609	25.601	240.3	0.361	4.78 U	77.5 U					0.12	0.19	110	209
124		11.18	11.16	33.669	25.710	230.2	0.394	3.62	58.3					0.09	0.16	125	208
125	ISL	11.17	11.15	33.673	25.715	229.8	0.397	3.60	57.9					0.09	0.16	126	
145		10.82	10.80	33.751	25.839	218.4	0.441	3.19	51.0					0.06	0.11	146	207
150	ISL	10.64	10.62	33.773	25.887	213.9	0.452	3.13	49.8					0.05	0.10	151	
169		9.86	9.84	33.853	26.083	195.4	0.491	2.98	46.7					0.01	0.06	170	206
198		8.85	8.83	33.926	26.304	174.7	0.545	2.91	44.6					0.01	0.06	199	205
200	ISL	8.82	8.80	33.931	26.313	173.9	0.548	2.90	44.4							201	
227		8.51	8.49	33.999	26.415	164.7	0.594	2.69	40.9							228	204
250	ISL	8.26	8.23	34.044	26.488	158.0	0.631	2.43	36.7							251	
267		8.07	8.04	34.073	26.540	153.4	0.657	2.21	33.3							268	203
300	ISL	7.61	7.58	34.133	26.654	142.8	0.706	1.64	24.4							302	
318		7.43	7.40	34.155	26.698	138.9	0.732	1.42	21.1							320	202
332		7.41	7.38	34.159	26.704	138.6	0.751	1.41	20.9							334	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 11.1 N	118 23.1 W	13/08/98	1035 UTC	1174 m	270 11 kn			1018.0 mb	21.0 C	20.2 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	20.98	20.98	33.331	23.231	463.5	0.000	5.44	106.2					0.13	0.05	0	
2		20.98	20.98	33.331	23.231	463.6	0.009	5.44	106.2					0.13	0.05	2	220
10	ISL	20.90	20.90	33.341	23.260	461.0	0.046	5.46	106.4					0.14	0.04	10	
15		20.85	20.85	33.347	23.279	459.5	0.069	5.47	106.5					0.15	0.03	15	219
20	ISL	19.76	19.76	33.341	23.561	432.6	0.092	5.66	108.0					0.23	0.05	20	
30		17.37	17.37	33.376	24.183	373.6	0.132	6.04	110.2					0.43	0.10	30	218
45		16.24	16.23	33.447	24.501	343.7	0.186	5.95	106.2					0.76	0.13	45	217
50	ISL	15.94	15.93	33.418	24.547	339.5	0.203	5.94	105.4					0.70	0.16	50	
55		15.67	15.66	33.391	24.587	335.8	0.220	5.94	104.8					0.64	0.18	55	216
65		15.15	15.14	33.438	24.738	321.7	0.253	5.83	101.8					0.04	0.08	65	215
75	ISL	14.52	14.51	33.499	24.921	304.5	0.284	5.44	93.8					0.02	0.06	75	
78		14.31	14.30	33.514	24.977	299.2	0.293	5.30	91.0					0.01	0.05	78	213
79		14.33	14.32	33.509	24.969	300.0	0.296	5.32	91.4					0.02	0.05	79	214
93		13.17	13.16	33.506	25.205	277.8	0.336	4.78	80.2					0.01	0.04	93	212
100	ISL	12.67	12.66	33.527	25.320	267.0	0.355	4.55	75.5					0.01	0.04	100	
110		12.04	12.03	33.570	25.474	252.5	0.381	4.25	69.6					0.00	0.03	110	211
124		11.35	11.33	33.631	25.650	236.0	0.416	3.86	62.3					0.00	0.03	125	210
125	ISL	11.31	11.29	33.639	25.663	234.7	0.418	3.82	61.7					0.00	0.03	126	
144		10.52	10.50	33.779	25.913	211.3	0.460	3.14	49.9					0.00	0.03	145	209
150	ISL	10.25	10.23	33.797	25.974	205.6	0.473	3.09	48.8					0.00	0.03	151	
169		9.52	9.50	33.848	26.136	190.3	0.510	3.00	46.6					0.01	0.02	170	208
199		9.04	9.02	34.058	26.378	167.9	0.564	2.32	35.7					0.01	0.03	200	207
200	ISL	9.02	9.00	34.059	26.382	167.5	0.566	2.32	35.7							201	
230		8.36	8.34	34.053	26.480	158.5	0.615	2.37	35.9							231	206
250	ISL	8.12	8.09	34.076	26.534	153.6	0.646	2.21	33.3							251	
267		7.98	7.95	34.099	26.573	150.1	0.672	2.03	30.5							268	205
300	ISL	7.66	7.63	34.120	26.637	144.5	0.720	1.79	26.7							302	
314		7.53	7.50	34.127	26.661	142.3	0.740	1.69	25.1							316	204
376		6.88	6.84	34.171	26.787	131.0	0.825	1.11	16.3							378	203
400	ISL	6.71	6.67	34.185	26.821	128.0	0.856	0.96	14.0							402	
438		6.50	6.46	34.207	26.867	124.1	0.904	0.76	11.0							441	202
500	ISL	6.22	6.18	34.260	26.946	117.2	0.979	0.52	7.5							503	
528		6.10	6.05	34.284	26.980	114.2	1.011	0.41	5.9							532	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 55.1 N	118 56.1 W	13/08/98	1647 UTC	1701 m	350 11 kn	350 02 05	1	1019.0 mb	20.0 C	19.1 C		5/8	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	20.07	20.07	33.464	23.573	430.7	0.000	5.41	103.9					0.20	0.04	0	
1		20.07	20.07	33.464	23.574	430.8	0.004	5.41	103.9					0.20	0.04	1	220
10		19.08	19.08	33.460	23.826	407.0	0.042	5.62	106.0					0.21	0.05	10	219
20	ISL	18.28	18.28	33.447	24.016	389.2	0.082	5.71	106.0					0.25	0.07	20	
21		18.16	18.16	33.446	24.045	386.5	0.086	5.72	106.0					0.25	0.07	21	218
30		16.02	16.02	33.477	24.574	336.3	0.118	6.12	108.8					0.80	0.27	30	217
40		13.75	13.74	33.545	25.116	284.8	0.149	5.20	88.3					1.47	0.70	40	216
49		12.49	12.48	33.573	25.389	259.0	0.174	4.29	71.0					0.73	0.58	49	215
50	ISL	12.41	12.40	33.576	25.407	257.4	0.176	4.24	70.0					0.68	0.56	50	
59		11.83	11.82	33.604	25.539	245.0	0.199	3.95	64.5					0.39	0.41	59	214
69		11.12	11.11	33.657	25.710	228.9	0.223	3.63	58.4					0.13	0.24	69	213
75	ISL	10.92	10.91	33.678	25.762	224.0	0.236	3.54	56.7					0.11	0.18	75	
89		10.63	10.62	33.713	25.841	216.8	0.267	3.43	54.6					0.07	0.12	89	212
100		10.24	10.23	33.745	25.934	208.2	0.290	3.32	52.4					0.04	0.10	100	211
119		9.66	9.65	33.850	26.113	191.5	0.328	2.96	46.1					0.01	0.08	120	210
125	ISL	9.60	9.59	33.882	26.148	188.3	0.340	2.83	44.1					0.01	0.08	126	
136		9.53	9.51	33.934	26.201	183.5	0.360	2.61	40.6					0.01	0.08	137	209
150	ISL	9.35	9.33	33.981	26.267	177.5	0.386	2.45	38.0					0.01	0.07	151	
164		9.14	9.12	34.015	26.328	171.9	0.410	2.34	36.1					0.01	0.05	165	208
198		8.71	8.69	34.073	26.442	161.7	0.467	2.13	32.5					0.00	0.05	199	207
200	ISL	8.70	8.68	34.076	26.445	161.3	0.470	2.12	32.4							201	
228		8.57	8.55	34.116	26.497	156.9	0.514	1.91	29.1							229	206
250	ISL	8.38	8.35	34.140	26.546	152.7	0.549	1.77	26.9							251	
268		8.19	8.16	34.156	26.587	149.0	0.576	1.65	24.9							270	205
300	ISL	7.79	7.76	34.175	26.661	142.3	0.622	1.41	21.1							302	
320		7.54	7.51	34.187	26.707	138.1	0.650	1.25	18.6							322	204
375		6.98	6.94	34.240	26.828	127.2	0.723	0.76	11.2							377	203
400	ISL	6.81	6.77	34.258	26.865	123.9	0.755	0.62	9.1							403	
427		6.64	6.60	34.274	26.901	120.8	0.788	0.52	7.6							430	202
500	ISL	6.12	6.08	34.318	27.004	111.6	0.873	0.37	5.3							503	
512		6.03	5.98	34.325	27.021	110.1	0.886	0.35	5.0							516	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 39.1 N	119 28.9 W	13/08/98	2233 UTC	1317 m	300 15 kn	300 03 08	2	1017.2 mb	19.7 C	18.6 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	18.23	18.23	33.049	23.723	416.4	0.000	5.57	103.1					0.09	0.02	0	
1		18.23	18.23	33.049	23.723	416.5	0.004	5.57	103.1					0.09	0.02	1	220
10	ISL	17.39	17.39	33.066	23.940	396.1	0.041	5.69	103.6					0.11	0.03	10	
15		16.71	16.71	33.087	24.116	379.5	0.060	5.79	104.1					0.12	0.03	15	219
20	ISL	16.27	16.27	33.101	24.228	369.0	0.079	5.86	104.4					0.12	0.03	20	
30		15.60	15.60	33.140	24.409	352.0	0.115	5.94	104.5					0.12	0.04	30	218
44		15.20	15.19	33.237	24.572	336.9	0.163	5.91	103.2					0.13	0.06	44	217
50	ISL	15.10	15.09	33.248	24.602	334.2	0.183	5.89	102.6					0.15	0.07	50	
54		15.02	15.01	33.257	24.627	332.0	0.197	5.88	102.3					0.16	0.08	54	216
65		14.60	14.59	33.352	24.790	316.7	0.232	5.69	98.2					0.66	0.47	65	215
75		13.69	13.68	33.375	24.998	297.1	0.263	5.33	90.3					0.44	0.40	75	214
86		13.29	13.28	33.417	25.112	286.5	0.295	5.11	85.9					0.29	0.27	86	213
96		12.10	12.09	33.463	25.380	261.1	0.322	4.67	76.6					0.16	0.17	96	212
100	ISL	11.77	11.76	33.496	25.467	252.8	0.333	4.55	74.1					0.13	0.15	100	
110		11.13	11.12	33.581	25.650	235.5	0.357	4.33	69.6					0.09	0.12	110	211
125		10.37	10.36	33.656	25.842	217.5	0.391	4.01	63.4					0.04	0.08	126	210
144		9.81	9.79	33.733	25.998	203.0	0.431	3.65	57.0					0.01	0.05	145	209
150	ISL	9.67	9.65	33.755	26.038	199.3	0.443	3.60	56.1					0.01	0.04	151	
170		9.29	9.27	33.833	26.161	187.9	0.482	3.41	52.7					0.00	0.03	171	208
200		8.88	8.86	33.984	26.345	170.9	0.536	2.57	39.4					0.00	0.05	201	207
230		8.09	8.07	33.988	26.469	159.3	0.585	2.92	44.0							231	206
250	ISL	8.04	8.01	34.068	26.540	153.0	0.616	2.40	36.1							251	
269		7.99	7.96	34.130	26.596	148.0	0.645	1.77	26.6							271	205
300	ISL	7.76	7.73	34.168	26.660	142.4	0.690	1.43	21.4							302	
318		7.60	7.57	34.171	26.686	140.1	0.715	1.36	20.3							320	204
377		7.06	7.02	34.152	26.748	134.9	0.797	1.28	18.8							379	203
400	ISL	6.95	6.91	34.167	26.775	132.6	0.827	1.15	16.9							402	
438		6.76	6.72	34.205	26.831	127.7	0.877	0.89	13.0							441	202
500	ISL	6.12	6.08	34.272	26.968	115.0	0.952	0.46	6.6							503	
515		5.96	5.91	34.289	27.002	111.8	0.969	0.36	5.2							518	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 25.1 N	119 57.5 W	14/08/98	0426 UTC	907 m	300 13 kn			1017.8 mb	18.2 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	17.90	17.90	33.037	23.795	409.6	0.000	5.59	102.8					0.09	0.02	0	
1		17.90	17.90	33.037	23.795	409.7	0.004	5.59	102.8					0.09	0.02	1	220
10	ISL	17.66	17.66	33.016	23.837	405.9	0.041	5.62	102.9					0.09	0.02	10	
15		17.39	17.39	33.001	23.890	401.0	0.061	5.63	102.5					0.09	0.02	15	219
20	ISL	17.01	17.01	32.995	23.975	393.1	0.081	5.71	103.2					0.10	0.02	20	
30		16.18	16.18	33.001	24.172	374.6	0.119	5.87	104.4					0.12	0.04	30	218
44		15.30	15.29	33.050 D	24.406	352.7	0.170	5.68 U	99.3 U					0.17	0.08	44	217
50	ISL	15.01	15.00	33.143	24.541	340.0	0.191	5.91	102.7					0.16	0.10	50	
54		14.84	14.83	33.199	24.621	332.5	0.204	5.92	102.6					0.16	0.11	54	216
65		14.36	14.35	33.194	24.719	323.4	0.240	5.86	100.6					0.32	0.31	65	215
74		14.35	14.34	33.326	24.823	313.7	0.269	5.62	96.5					0.40	0.33	74	214
75	ISL	14.33	14.32	33.339	24.838	312.4	0.272	5.60	96.1					0.40	0.33	75	
84		14.19	14.18	33.475	24.972	299.8	0.300	5.42	92.8					0.34	0.27	84	213
95		13.29	13.28	33.514	25.187	279.6	0.332	5.06	85.1					0.25	0.25	95	212
100	ISL	12.62	12.61	33.509	25.316	267.4	0.345	4.83	80.1					0.19	0.21	100	
108		11.57	11.56	33.518	25.521	247.8	0.366	4.50	73.0					0.11	0.14	108	211
124		10.64	10.63	33.675	25.810	220.5	0.403	4.32	68.7					0.06	0.12	125	210
125	ISL	10.59	10.58	33.681	25.824	219.3	0.406	4.30	68.3					0.06	0.12	126	
144		9.74	9.72	33.778	26.044	198.5	0.445	3.93	61.3					0.01	0.05	145	209
150	ISL	9.46	9.44	33.805	26.112	192.2	0.457	3.78	58.6					0.01	0.05	151	
171		8.71	8.69	33.899	26.305	174.1	0.495	3.19	48.7					0.00	0.03	172	208
198		8.64	8.62	34.023	26.413	164.3	0.541	2.44	37.2					0.00	0.06	199	207
200	ISL	8.61	8.59	34.027	26.421	163.6	0.544	2.42	36.9							201	
228		8.19	8.17	34.068	26.517	154.8	0.589	2.20	33.2							229	206
250	ISL	8.07	8.04	34.127	26.582	149.1	0.622	1.81	27.3							251	
268		7.98	7.95	34.170	26.629	144.9	0.649	1.49	22.4							269	205
300	ISL	7.55	7.52	34.173	26.694	139.0	0.694	1.33	19.8							302	
317		7.30	7.27	34.166	26.725	136.3	0.718	1.29	19.1							319	204
376		6.85	6.81	34.214	26.825	127.4	0.795	0.85	12.5							378	203
400	ISL	6.67	6.63	34.226	26.859	124.4	0.826	0.73	10.7							402	
438		6.40	6.36	34.245	26.910	119.9	0.872	0.58	8.4							441	202
500	ISL	6.07	6.03	34.292	26.990	112.9	0.944	0.40	5.8							503	
530		5.91	5.86	34.316	27.029	109.4	0.978	0.31	4.4							534	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 5.1 N	120 38.3 W	14/08/98	1151 UTC	3830 m	320 15 kn			1017.0 mb	17.2 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	17.53	17.53	33.111	23.940	395.7	0.000	5.63	102.9					0.20	0.05	0	
1	17.53	17.53	33.111	23.940	395.8	0.004	5.63	102.9					0.20	0.05	1	220
10 ISL	17.35	17.35	33.118	23.989	391.4	0.039	5.66	103.0					0.21	0.06	10	
16	17.05	17.05	33.109	24.053	385.5	0.063	5.70	103.2					0.22	0.07	16	219
20 ISL	16.71	16.71	33.070	24.103	380.9	0.078	5.74	103.2					0.22	0.07	20	
30 ISL	15.82	15.82	32.993	24.247	367.5	0.115	5.86	103.4					0.21	0.08	30	
31	15.73	15.73	32.987	24.262	366.0	0.119	5.87	103.4					0.21	0.08	31	218
46	14.97	14.96	33.080	24.501	343.7	0.172	5.98	103.8					0.36	0.19	46	217
50 ISL	14.85	14.84	33.111	24.551	339.0	0.186	5.97	103.4					0.41	0.25	50	
55	14.72	14.71	33.143	24.603	334.2	0.203	5.94	102.6					0.44	0.31	55	216
66	14.34	14.33	33.140	24.682	327.0	0.239	5.91	101.3					0.33	0.27	66	215
75 ISL	14.05	14.04	33.218	24.803	315.7	0.268	5.73	97.7					0.36	0.38	75	
76	14.02	14.01	33.228	24.817	314.4	0.271	5.71	97.3					0.37	0.39	76	214
86	13.78	13.77	33.298	24.921	304.8	0.302	5.53	93.8					0.34	0.45	86	213
96	12.64	12.63	33.420	25.243	274.2	0.331	5.00	82.9					0.22	0.34	96	212
100 ISL	12.21	12.20	33.450	25.349	264.2	0.342	4.81	79.0					0.19	0.28	100	
108	11.52	11.51	33.496	25.513	248.6	0.362	4.52	73.2					0.15	0.18	108	211
124	11.11	11.09	33.580	25.653	235.6	0.401	4.37	70.2					0.08	0.11	125	210
125 ISL	11.07	11.05	33.586	25.665	234.5	0.404	4.36	70.0					0.08	0.11	126	
144	10.30	10.28	33.698	25.888	213.6	0.446	4.19	66.2					0.03	0.07	145	209
150 ISL	10.07	10.05	33.728	25.950	207.7	0.459	4.12	64.8					0.02	0.06	151	
168	9.48	9.46	33.807	26.110	192.7	0.495	3.91	60.7					0.01	0.04	169	208
198	8.88	8.86	33.891	26.272	177.8	0.550	3.51	53.8					0.00	0.03	199	207
200 ISL	8.83	8.81	33.897	26.285	176.6	0.554	3.47	53.1							201	
227	8.23	8.21	33.974	26.438	162.4	0.600	2.99	45.2							228	206
250 ISL	7.84	7.82	34.007	26.521	154.6	0.636	2.73	40.9							251	
269	7.58	7.55	34.021	26.570	150.2	0.665	2.56	38.1							270	205
300 ISL	7.16	7.13	34.033	26.639	143.9	0.711	2.28	33.6							302	
320	6.96	6.93	34.046	26.677	140.5	0.739	2.06	30.2							322	204
378	6.85	6.81	34.187	26.804	129.4	0.817	0.97	14.2							380	203
400 ISL	6.60	6.56	34.189	26.839	126.2	0.845	0.89	13.0							402	
438	6.14	6.10	34.176	26.889	121.6	0.893	0.76	10.9							441	202
500 ISL	5.85	5.81	34.222	26.962	115.2	0.966	0.52	7.4							503	
519	5.76	5.72	34.236	26.985	113.3	0.988	0.45	6.4							522	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 45.1 N	121 18.9 W	14/08/98	1849 UTC	3670 m	220 11 kn	220 02 05	2	1017.9 mb	19.0 C	18.2 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	17.94	17.94	33.007	23.762	412.8	0.000	5.54	101.9					0.13	0.03	0	
2	17.94	17.94	33.007	23.762	412.8	0.008	5.54	101.9					0.13	0.03	2	220
10 ISL	17.82	17.82	33.025	23.805	409.0	0.041	5.56	102.1					0.12	0.03	10	
15	17.74	17.74	33.036	23.833	406.5	0.062	5.57	102.1					0.12	0.03	15	219
20 ISL	17.36	17.36	33.043	23.930	397.4	0.082	5.63	102.5					0.14	0.03	20	
30 ISL	16.41	16.41	33.051	24.158	376.0	0.120	5.77	103.1					0.18	0.05	30	
31	16.30	16.30	33.051	24.183	373.6	0.124	5.79	103.2					0.18	0.05	31	218
45	15.05	15.04	33.030	24.445	349.0	0.175	5.94	103.3					0.21	0.11	45	217
50 ISL	14.81	14.80	33.046	24.509	343.0	0.192	5.94	102.8					0.22	0.14	50	
59	14.58	14.57	33.100	24.600	334.6	0.222	5.93	102.2					0.24	0.18	59	216
74	14.57	14.56	33.255	24.722	323.4	0.272	5.83	100.5					0.23	0.22	74	215
75 ISL	14.58	14.57	33.265	24.728	322.9	0.275	5.82	100.4					0.23	0.23	75	
85	14.66	14.65	33.390	24.807	315.6	0.307	5.72	98.9					0.25	0.31	85	214
95	14.66	14.65	33.581	24.955	301.9	0.338	5.52	95.5					0.24	0.30	95	213
100 ISL	14.45	14.44	33.632	25.039	294.0	0.353	5.42	93.4					0.21	0.27	100	
104	14.18	14.16	33.651	25.111	287.3	0.364	5.34	91.5					0.19	0.24	104	212
115	13.06	13.04	33.607	25.306	268.8	0.395	5.04	84.4					0.15	0.19	115	211
125	12.15	12.13	33.600	25.477	252.6	0.421	4.82	79.2					0.11	0.16	126	210
139	10.74	10.72	33.654	25.777	224.1	0.454	4.37	69.7					0.06	0.12	140	209
150 ISL	10.19	10.17	33.691	25.901	212.4	0.478	4.16	65.5					0.04	0.09	151	
164	9.81	9.79	33.735	26.000	203.2	0.507	3.99	62.4					0.02	0.06	165	208
193	9.03	9.01	33.859	26.224	182.3	0.563	3.73	57.3					0.00	0.04	194	207
200 ISL	8.89	8.87	33.883	26.265	178.5	0.576	3.64	55.8							201	
229	8.40	8.38	33.959	26.400	166.0	0.626	3.22	48.8							230	206
250 ISL	8.02	7.99	33.991	26.482	158.4	0.660	2.95	44.3							251	
268	7.70	7.67	34.009	26.544	152.8	0.688	2.72	40.6							269	205
300 ISL	7.18	7.15	34.032	26.635	144.3	0.736	2.28	33.6							302	
318	6.92	6.89	34.042	26.679	140.3	0.761	2.05	30.1							320	204
378	6.36	6.33	34.073	26.779	131.3	0.843	1.44	20.8							380	203
400 ISL	6.22	6.18	34.091	26.811	128.5	0.871	1.24	17.9							402	
437	6.01	5.97	34.125	26.865	123.7	0.918	0.94	13.5							440	202
500 ISL	5.63	5.59	34.187	26.961	115.0	0.993	0.58	8.3							503	
515	5.54	5.50	34.202	26.984	113.0	1.010	0.49	7.0							518	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 25.0 N	121 59.5 W	15/08/98	0144 UTC	3869 m	320	13 kn	310 03 07	2	1015.9 mb	18.9 C	18.0 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	18.45	18.45	33.128	23.729	415.8	0.000	5.51	102.5					0.11	0.03	0	
1		18.45	18.45	33.128	23.729	415.9	0.004	5.51	102.5					0.11	0.03	1	220
10	ISL	18.35	18.35	33.138	23.762	413.1	0.041	5.50	102.1					0.12	0.04	10	
14		18.29	18.29	33.146	23.783	411.2	0.058	5.50	102.0					0.12	0.04	14	219
20	ISL	18.27	18.27	33.163	23.801	409.7	0.083	5.50	101.9					0.14	0.04	20	
30		18.23	18.22	33.192	23.834	406.9	0.123	5.51	102.1					0.18	0.05	30	218
45		17.49	17.48	33.445	24.208	371.8	0.182	5.68	103.9					0.19	0.06	45	217
50	ISL	17.18	17.17	33.493	24.318	361.4	0.200	5.75	104.6					0.20	0.07	50	
59		16.57	16.56	33.528	24.488	345.5	0.232	5.85	105.1					0.21	0.10	59	216
74		15.53	15.52	33.427	24.646	330.7	0.283	5.86	103.1					0.24	0.13	74	215
75	ISL	15.50	15.49	33.434	24.659	329.6	0.286	5.85	102.9					0.24	0.14	75	
84		15.34	15.33	33.534	24.771	319.2	0.315	5.76	101.0					0.27	0.22	84	214
94		15.13	15.12	33.653	24.909	306.3	0.346	5.57	97.3					0.28	0.27	94	213
100	ISL	14.57	14.56	33.664	25.039	294.1	0.364	5.41	93.5					0.24	0.24	100	
104		14.15	14.13	33.660	25.124	286.0	0.376	5.30	90.8					0.21	0.22	104	212
115		13.50	13.48	33.655	25.255	273.8	0.407	5.13	86.7					0.18	0.23	115	211
125		12.35	12.33	33.602	25.441	256.1	0.433	4.92	81.2					0.12	0.17	126	210
140		11.85	11.83	33.629	25.556	245.4	0.471	4.85	79.2					0.09	0.19	141	209
150	ISL	11.21	11.19	33.664	25.701	231.7	0.495	4.71	75.9					0.07	0.14	151	
164		10.27	10.25	33.727	25.916	211.4	0.526	4.42	69.8					0.04	0.06	165	208
193		9.19	9.17	33.840	26.183	186.2	0.583	3.67	56.6					0.01	0.03	194	207
200	ISL	9.04	9.02	33.863	26.225	182.3	0.596	3.59	55.2							201	
228		8.61	8.59	33.937	26.351	170.8	0.646	3.37	51.3							229	206
250	ISL	8.31	8.28	33.981	26.431	163.4	0.683	3.04	46.0							251	
267		8.09	8.06	34.006	26.484	158.6	0.710	2.78	41.9							268	205
300	ISL	7.56	7.53	34.030	26.581	149.7	0.761	2.49	37.0							302	
317		7.29	7.26	34.036	26.624	145.8	0.786	2.36	34.9							319	204
379		6.61	6.58	34.063	26.738	135.4	0.873	1.68	24.5							381	203
400	ISL	6.44	6.40	34.081	26.775	132.1	0.901	1.44	20.9							402	
435		6.18	6.14	34.116	26.836	126.5	0.946	1.07	15.4							438	202
500	ISL	5.72	5.68	34.190	26.953	115.9	1.025	0.63	9.0							503	
526		5.54	5.50	34.220	26.999	111.8	1.055	0.46	6.5							529	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9808 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 5.3 N	122 39.8 W	15/08/98	0833 UTC	4029 m	330	09 kn			1016.2 mb	19.0 C	17.9 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	19.46	19.46	33.607	23.841	405.2	0.000	5.34	101.5					0.09	0.02	0	
1		19.46	19.46	33.607	23.841	405.3	0.004	5.34	101.5					0.09	0.02	1	220
10	ISL	19.43	19.43	33.609	23.850	404.7	0.041	5.36	101.8					0.09	0.02	10	
15		19.41	19.41	33.604	23.852	404.7	0.061	5.37	102.0					0.09	0.02	15	219
20	ISL	19.35	19.35	33.602	23.866	403.6	0.081	5.37	101.9					0.10	0.02	20	
30	ISL	19.22	19.21	33.598	23.897	401.0	0.121	5.38	101.8					0.11	0.03	30	
31		19.21	19.20	33.598	23.899	400.8	0.125	5.38	101.8					0.11	0.03	31	218
47		17.97	17.96	33.636	24.238	369.0	0.187	5.67	104.8					0.13	0.04	47	217
50	ISL	17.83	17.82	33.657	24.288	364.3	0.198	5.70	105.1					0.13	0.04	50	
61		17.38	17.37	33.715	24.441	350.1	0.237	5.75	105.1					0.15	0.05	61	216
75	ISL	16.59	16.58	33.674	24.596	335.7	0.285	5.75	103.5					0.19	0.08	75	
76		16.53	16.52	33.668	24.606	334.8	0.288	5.75	103.3					0.20	0.08	76	215
86		15.95	15.94	33.607	24.692	326.9	0.322	5.79	102.8					0.29	0.16	86	214
95		15.92	15.91	33.709	24.777	319.0	0.351	5.64	100.2					0.26	0.25	95	213
100	ISL	15.90	15.88	33.768	24.827	314.5	0.366	5.58	99.1					0.29	0.34	100	
103		15.89	15.87	33.804	24.857	311.7	0.376	5.55	98.6					0.31	0.38	103	212
114		15.27	15.25	33.780	24.977	300.5	0.409	5.35	93.8					0.26	0.29	114	211
125		14.35	14.33	33.736	25.141	285.0	0.442	5.13	88.3					0.19	0.22	125	210
140		12.66	12.64	33.626	25.400	260.5	0.483	4.98	82.7					0.12	0.16	141	209
150	ISL	11.92	11.90	33.615	25.533	247.9	0.508	4.78	78.1					0.09	0.13	151	
165		11.12	11.10	33.641	25.700	232.1	0.544	4.43	71.2					0.06	0.10	166	208
194		9.86	9.84	33.738	25.994	204.4	0.607	3.89	60.9					0.01	0.04	195	207
200	ISL	9.62	9.60	33.773	26.061	198.1	0.619	3.76	58.5							201	
230		8.63	8.61	33.940	26.350	170.9	0.675	3.21	48.9							231	206
250	ISL	8.29	8.26	33.987	26.439	162.7	0.708	3.06	46.3							251	
269		8.05	8.02	34.005	26.489	158.1	0.739	2.95	44.4							270	205
300	ISL	7.55	7.52	34.023	26.577	150.1	0.786	2.62	39.0							302	
317		7.30	7.27	34.028	26.616	146.5	0.812	2.42	35.8							319	204
377		6.69	6.66	34.070	26.733	135.9	0.896	1.69	24.6							379	203
400	ISL	6.49	6.45	34.087	26.773	132.3	0.927	1.48	21.5							402	
443		6.16	6.12	34.122	26.844	125.9	0.983	1.14	16.4							446	202
500	ISL	5.83	5.79	34.186	26.936	117.6	1.052	0.69	9.9							503	
526		5.68	5.64	34.215	26.978	113.9	1.082	0.49	7.0							529	201

CalCOFI Cruise 9808

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)
83	40.6	34 13.7	119 24.9	08/17	1228	1231	75	20	67	67
83	42	34 11.5	119 31.7	08/17	1031	1041	206	97	44	44
83	51	33 51.7	120 09.6	08/17	0330	0352	445	214	22	22
83	55	33 45.3	120 26.0	08/16	2250	2313	579	193	116	116
83	60	33 36.1	120 46.8	08/16	1806	1828	534	204	51	51
83	80	32 55.9	122 08.9	08/16	0400	0421	469	211	30	30
83	90	32 34.5	122 48.8	08/15	2026	2047	448	210	25	25
83	100	32 15.1	123 29.3	08/15	1337	1358	446	214	13	13
90	28	33 28.5	117 46.9	08/12	1939	2000	416	214	46	46
90	30	33 24.9	117 54.4	08/12	1644	1705	420	218	5	5
90	35	33 14.8	118 15.5	08/13	0055	0116	461	186	93	93
90	37	33 11.2	118 23.3	08/13	0409	0431	490	195	171	171
90	53	32 39.2	119 29.2	08/13	1545	1606	429	214	28	28
90	60	32 25.4	119 57.8	08/13	2143	2204	443	209	45	45
90	70	32 05.6	120 39.5	08/14	0508	0530	436	211	62	62
90	80	31 45.7	121 19.3	08/14	1200	1222	456	203	22	22
90	90	31 25.2	122 00.0	08/14	1854	1915	438	209	30	30
90	100	31 06.4	122 40.5	08/15	0155	0217	465	200	22	22

FIGURES

Cruise 9809

1. CalCOFI Cruise 9809, 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 and geostrophic velocity (+ = northward); B) temperature; C) salinity; D) silicate; E) nitrate; F) phosphate; G) chlorophyll-*a*; H) oxygen saturation; I) oxygen; J) nitrite; and K) phaeopigments.

CALCOFI CRUISE 9809

13 SEPTEMBER - 1 OCTOBER 1998

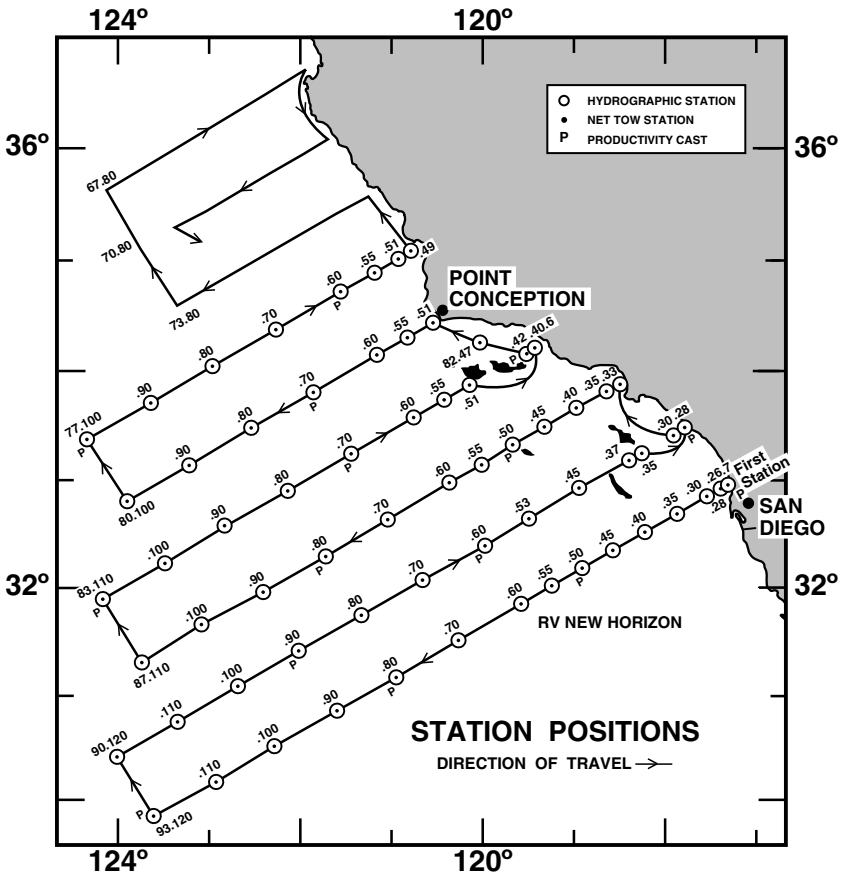

FIGURE 1

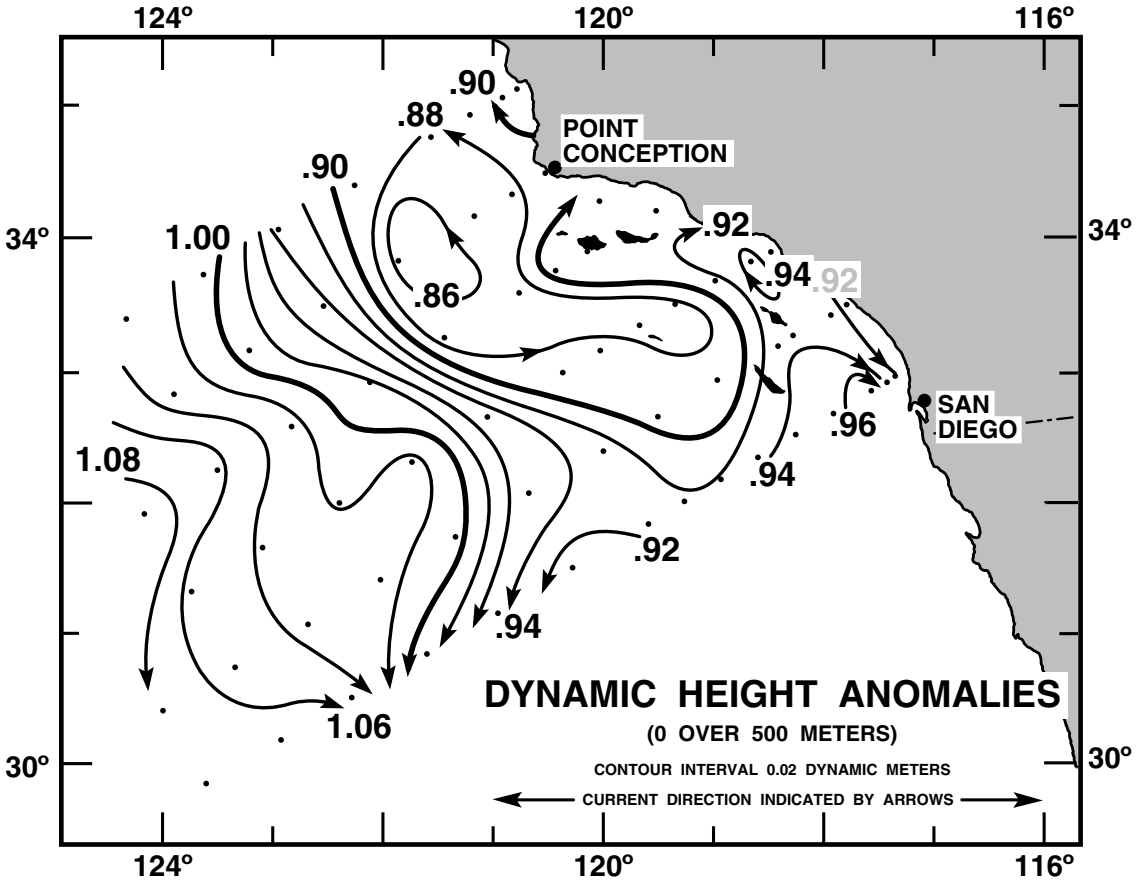

FIGURE 2

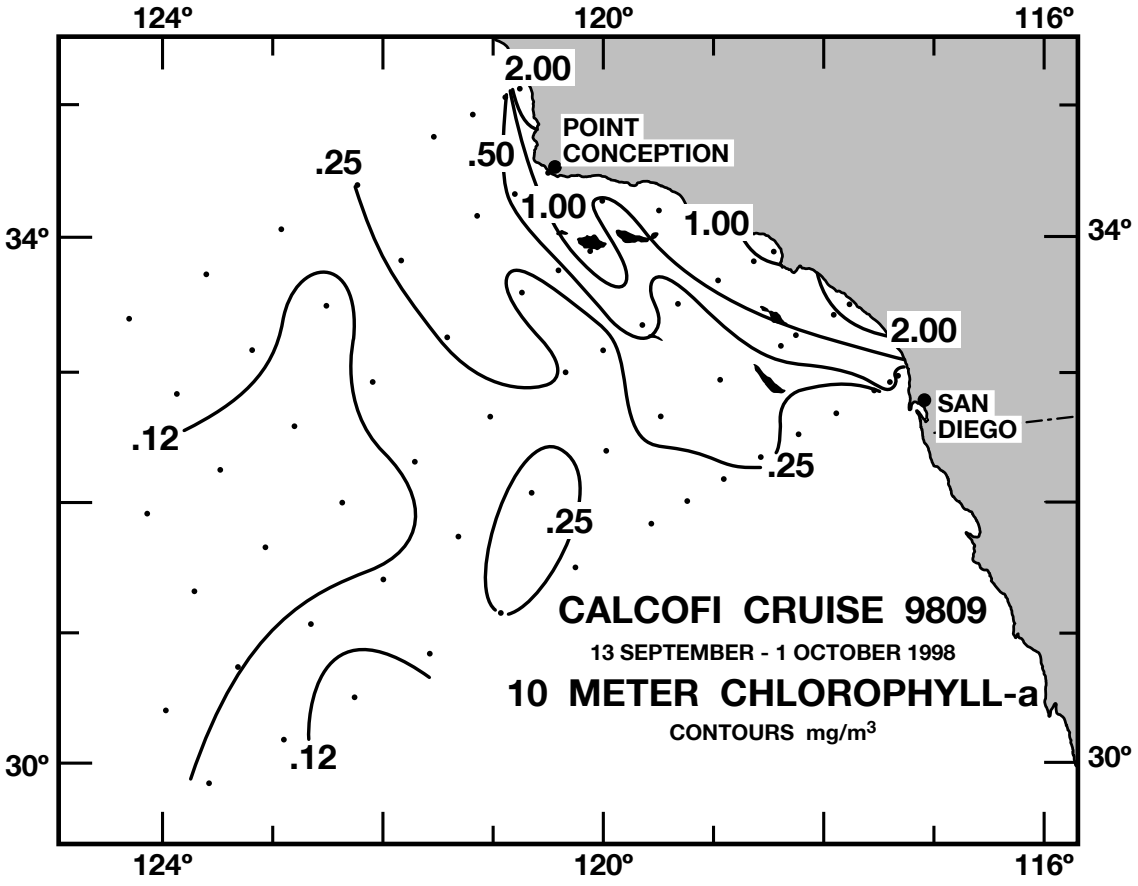

FIGURE 3A

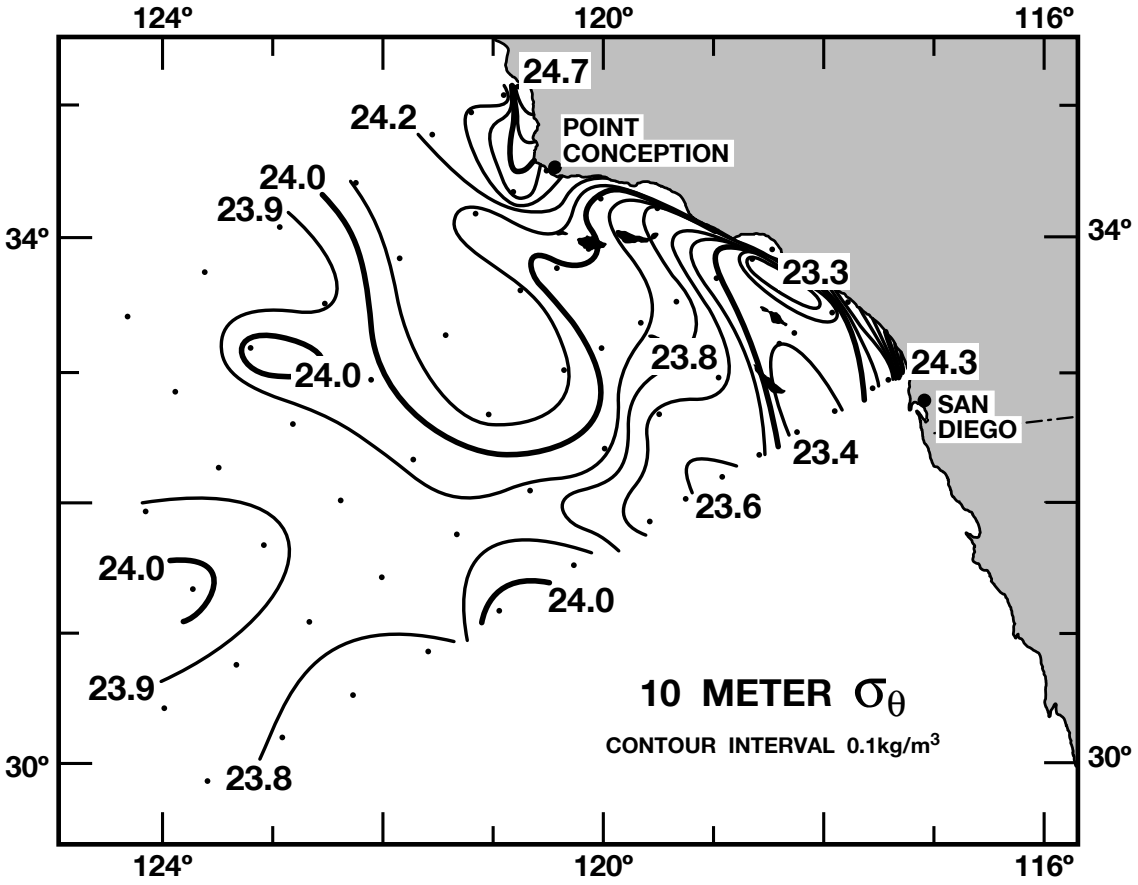

FIGURE 3B

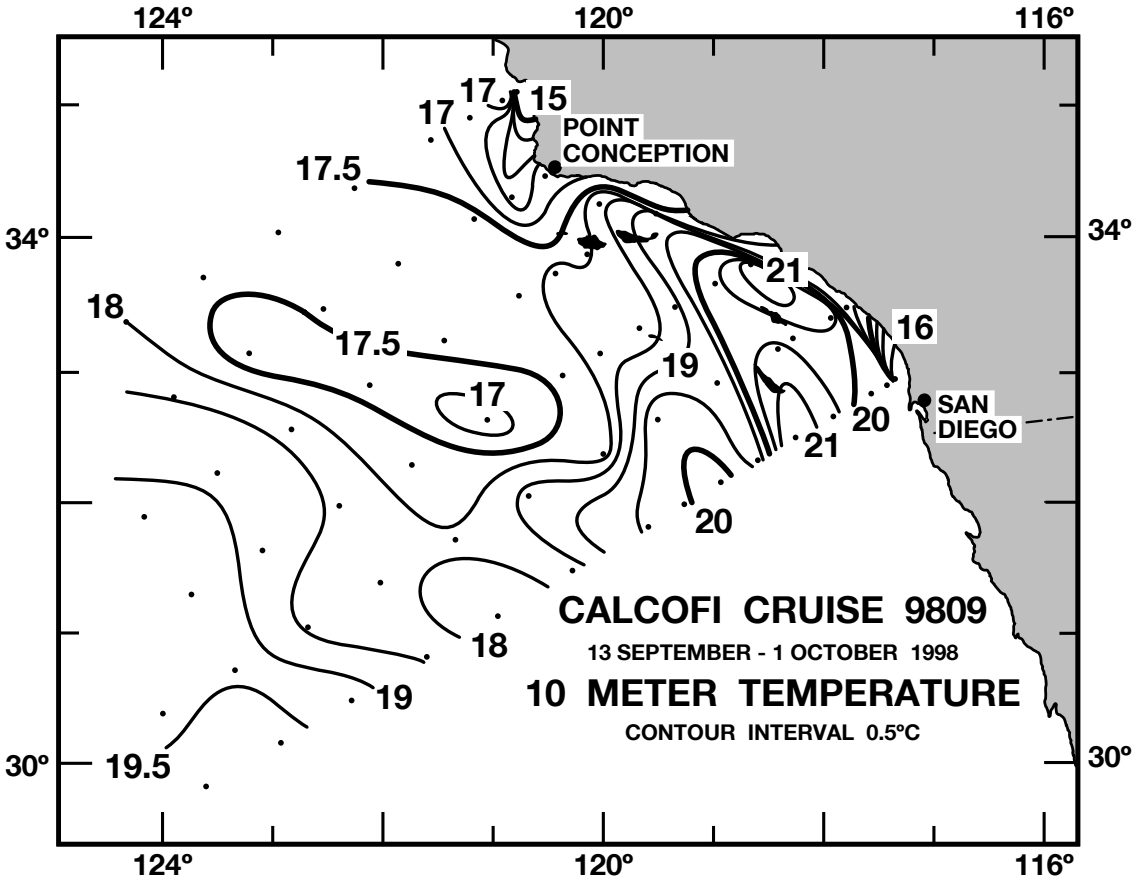

FIGURE 3C

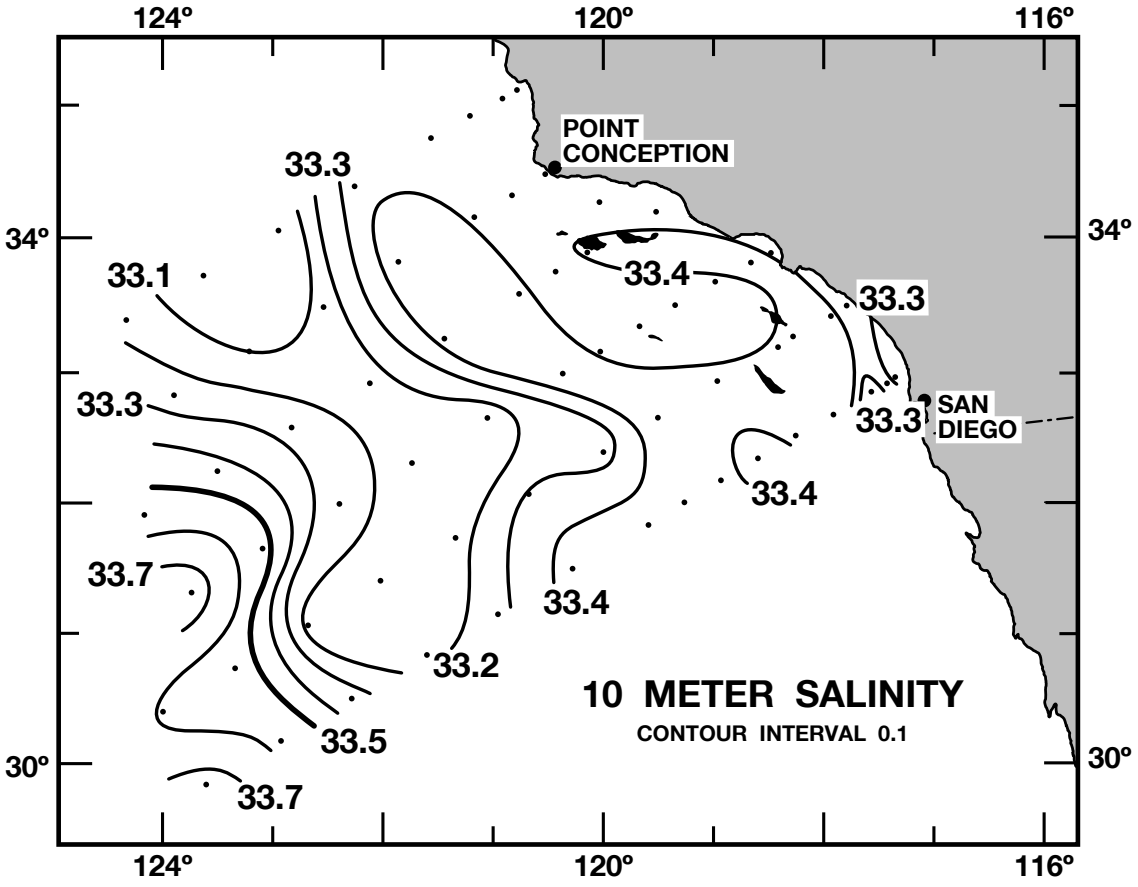

FIGURE 3D

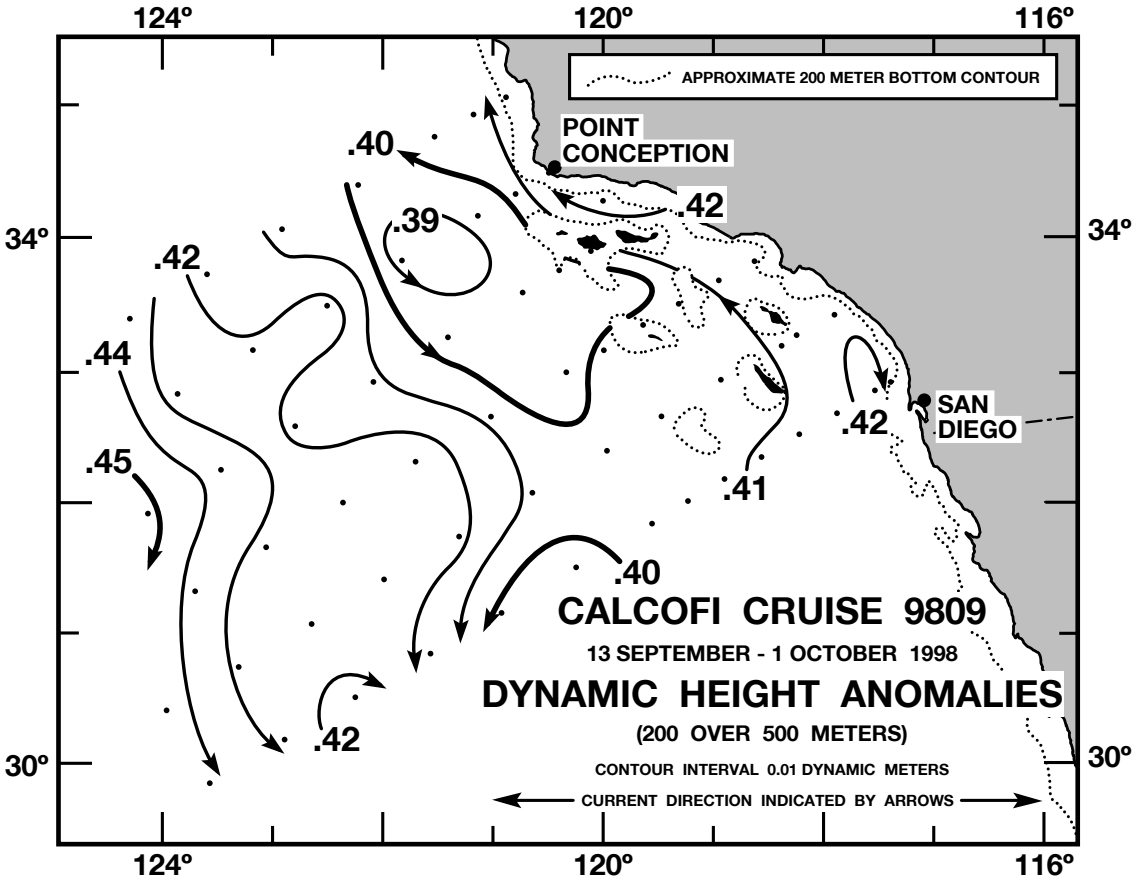

FIGURE 4A

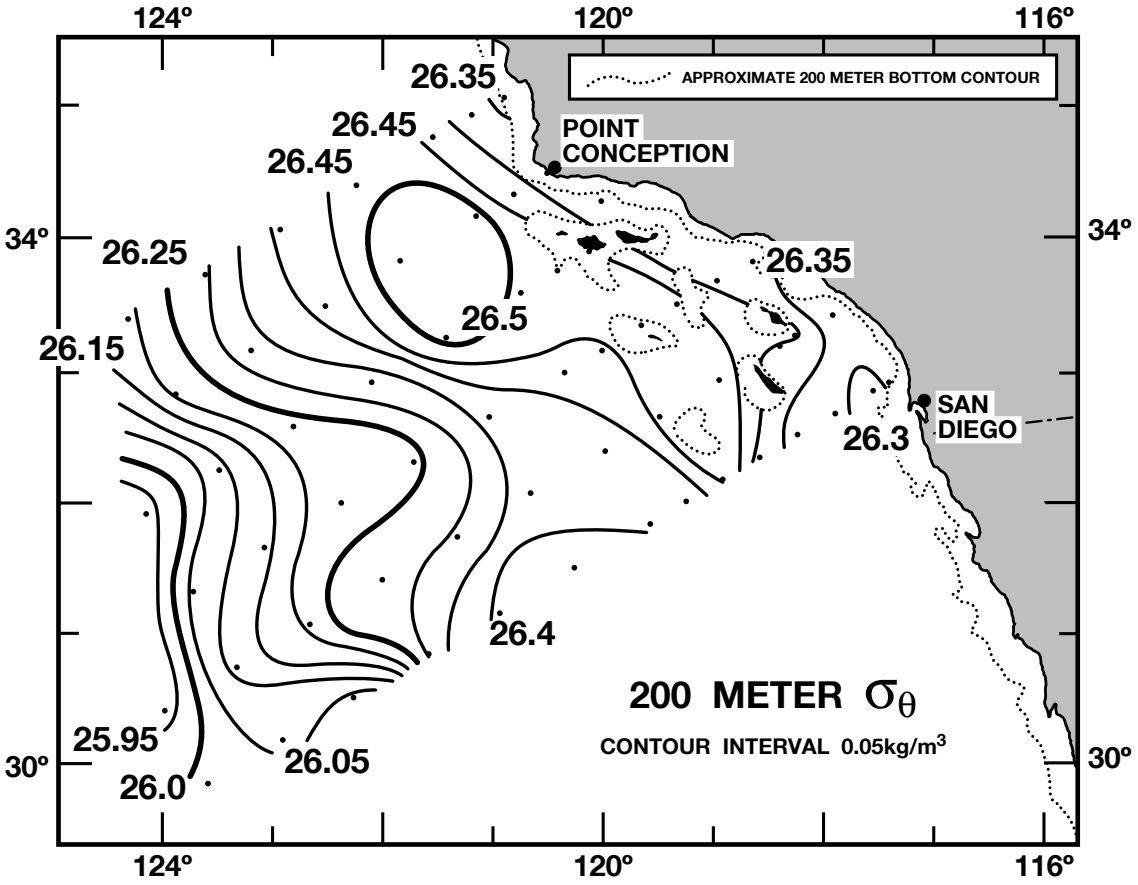

FIGURE 4B

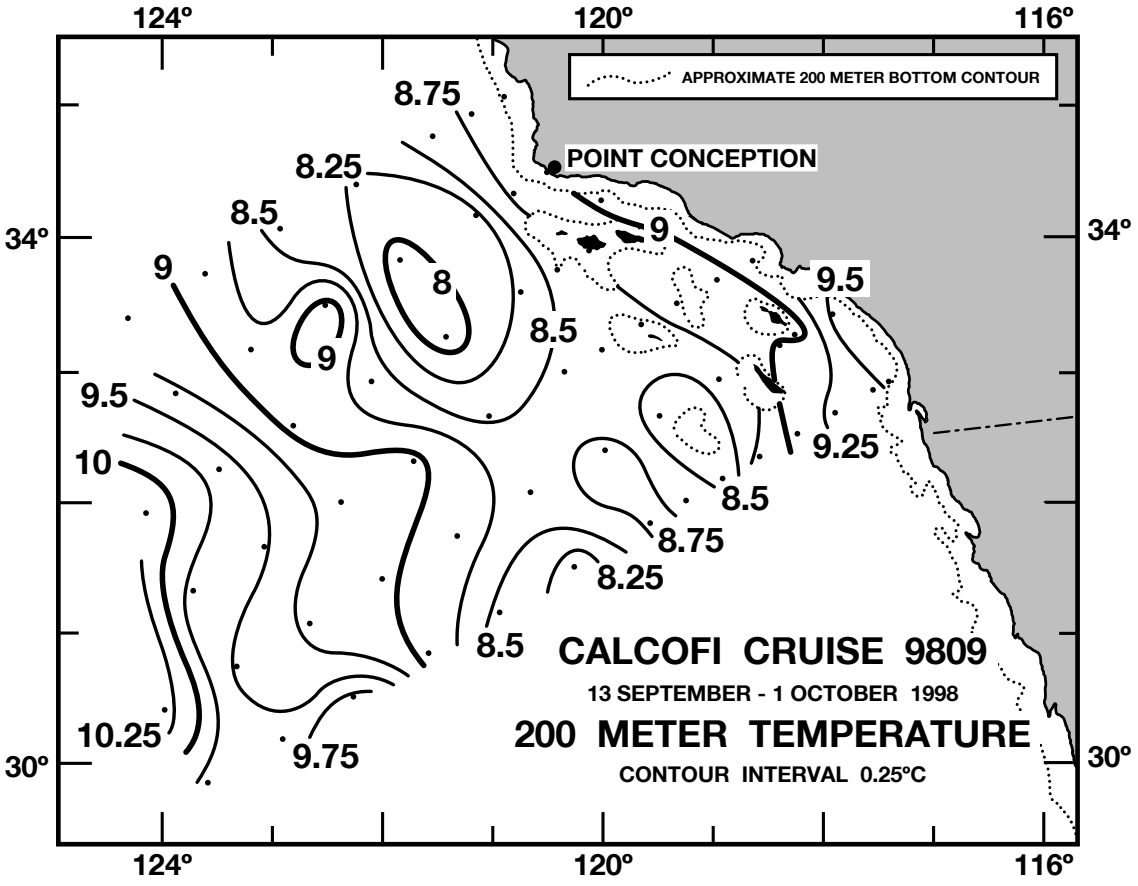

FIGURE 4C

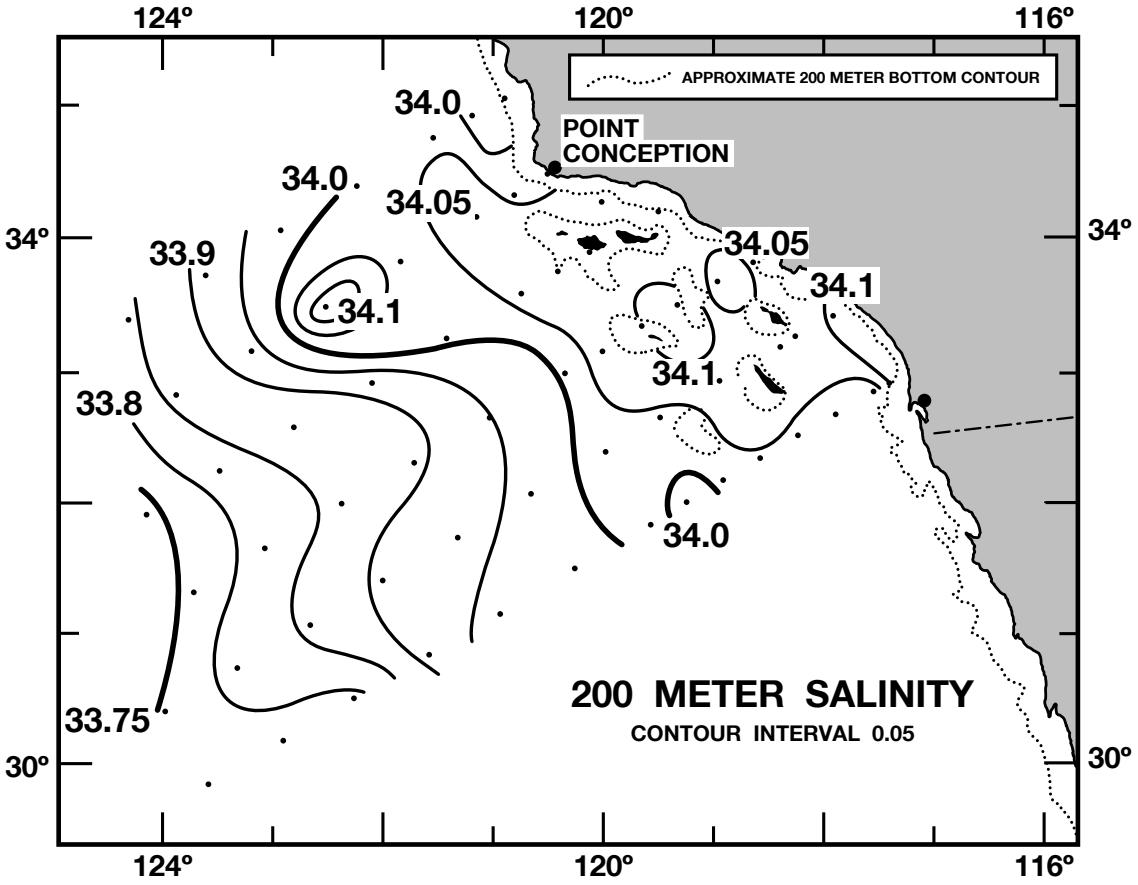

FIGURE 4D

CALCOFI CRUISE 9809

17- 19 SEPTEMBER 1998

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

GEOSTROPHIC VELOCITY RELATIVE TO 500m (cm/s)

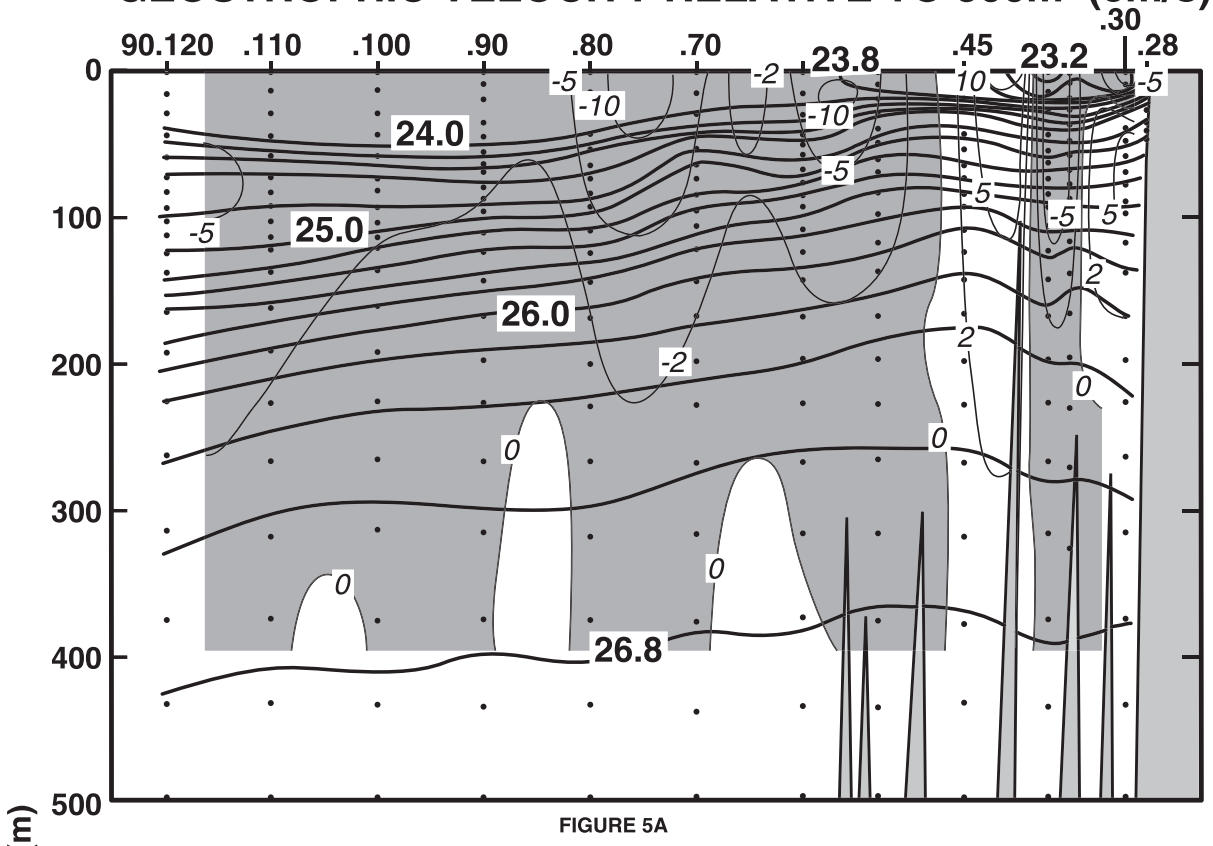

FIGURE 5A

TEMPERATURE (°C) ALONG CALCOFI LINE 90

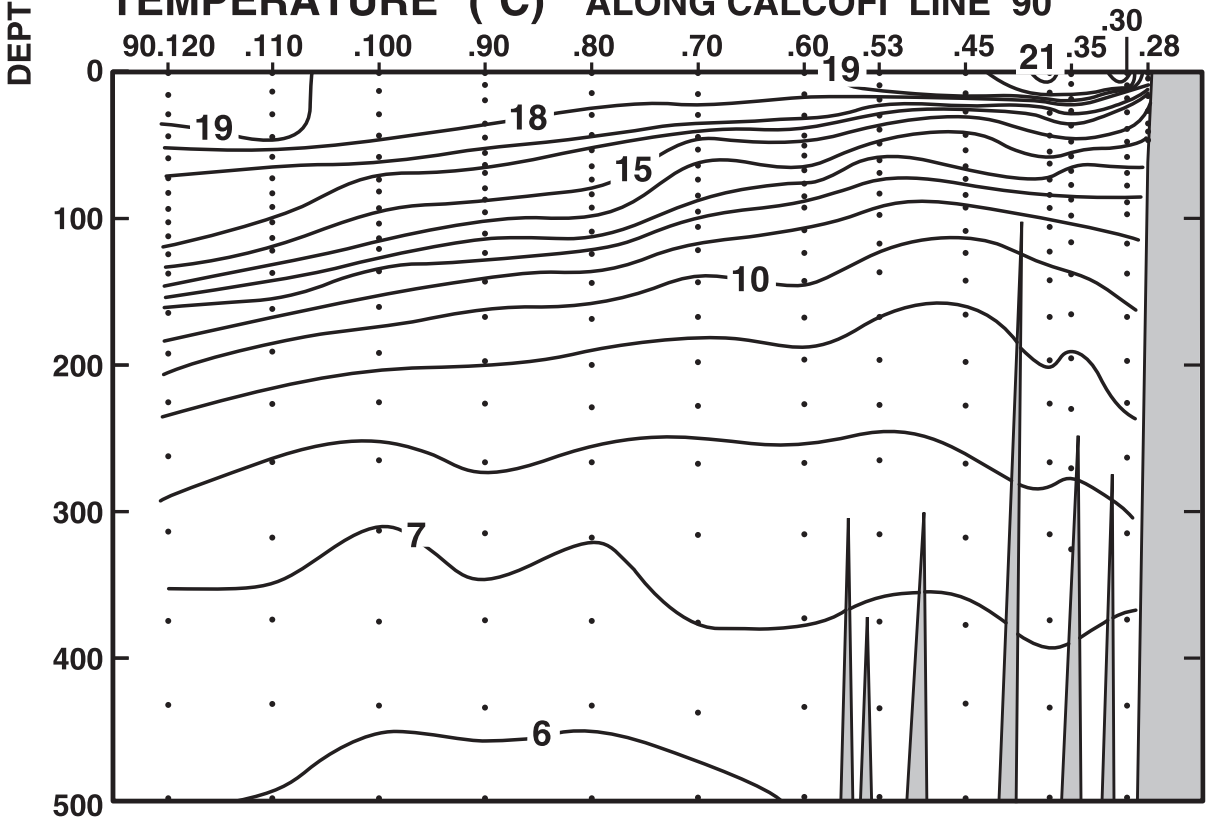

FIGURE 5B

CALCOFI CRUISE 9809

17 - 19 SEPTEMBER 1998

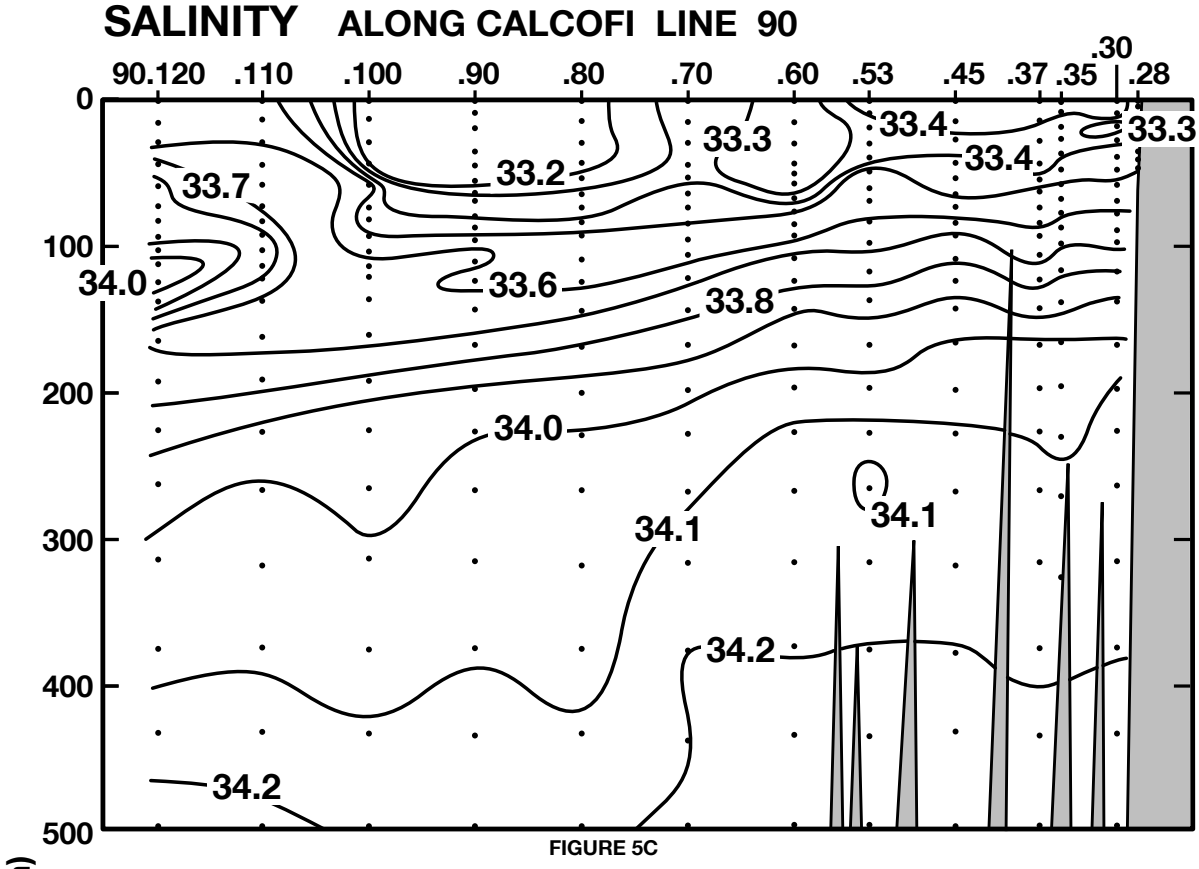

FIGURE 5C

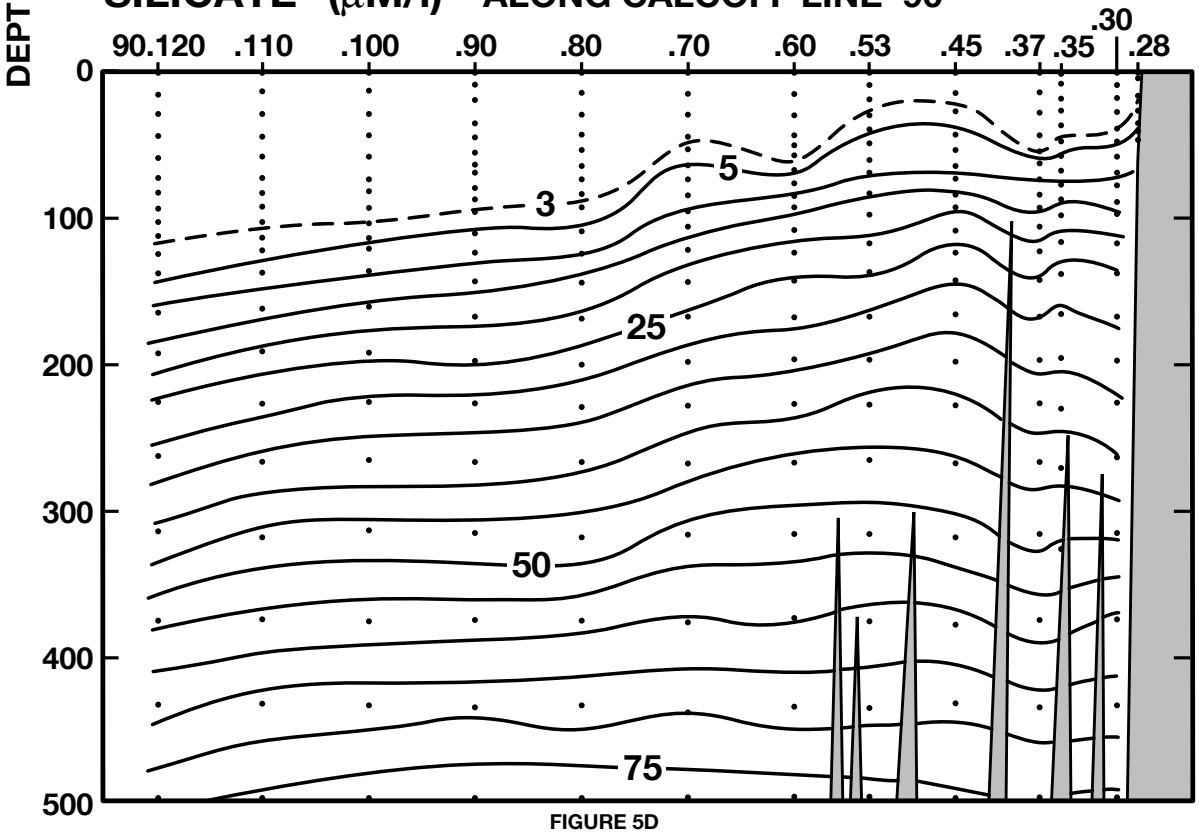

FIGURE 5D

CALCOFI CRUISE 9809

17 - 19 SEPTEMBER 1998

NITRATE (μM/l) ALONG CALCOFI LINE 90

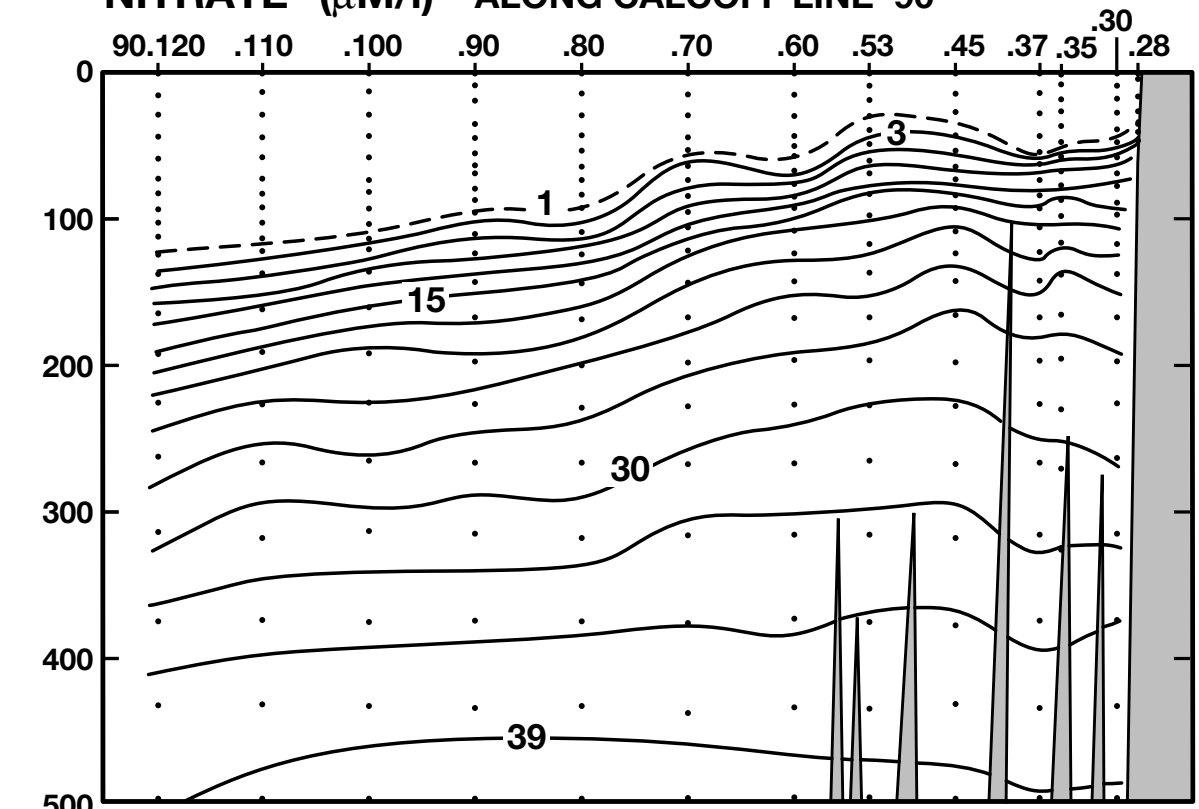

FIGURE 5E

PHOSPHATE (μM/l) ALONG CALCOFI LINE 90

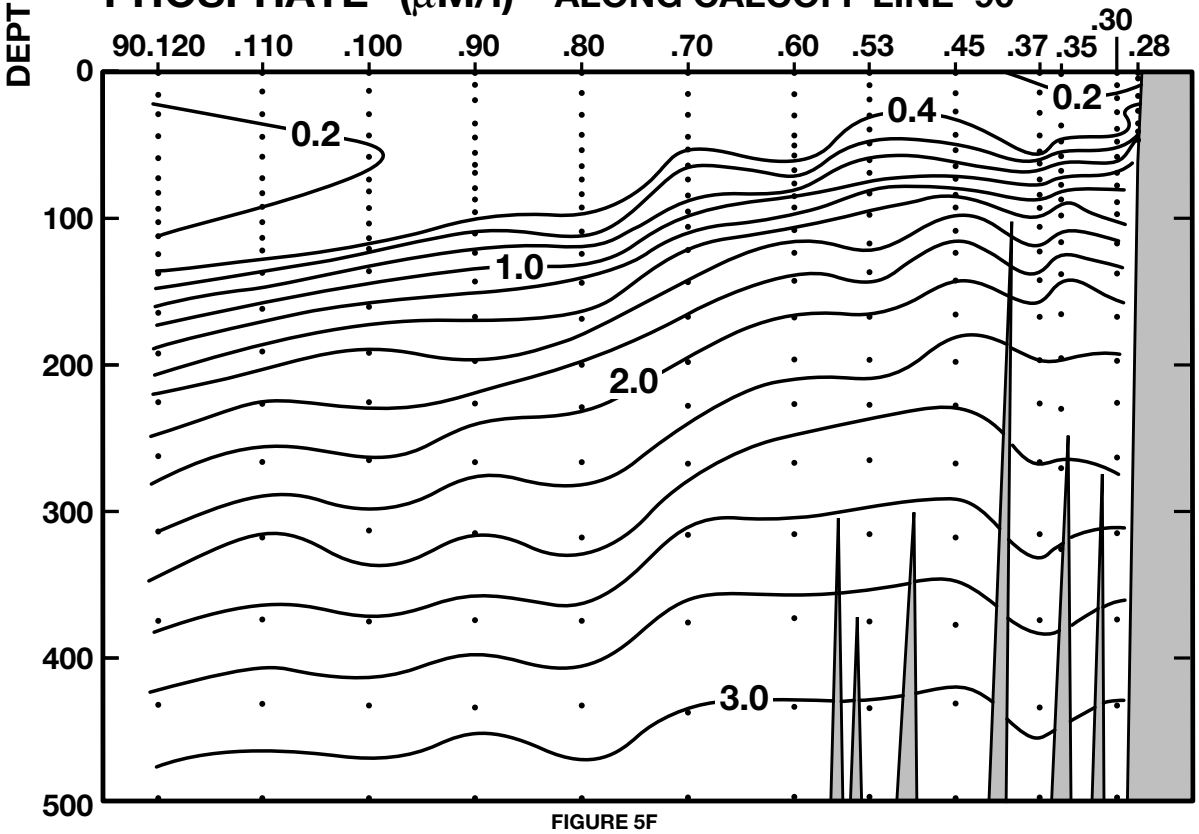

FIGURE 5F

CALCOFI CRUISE 9809

17 - 19 SEPTEMBER 1998

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

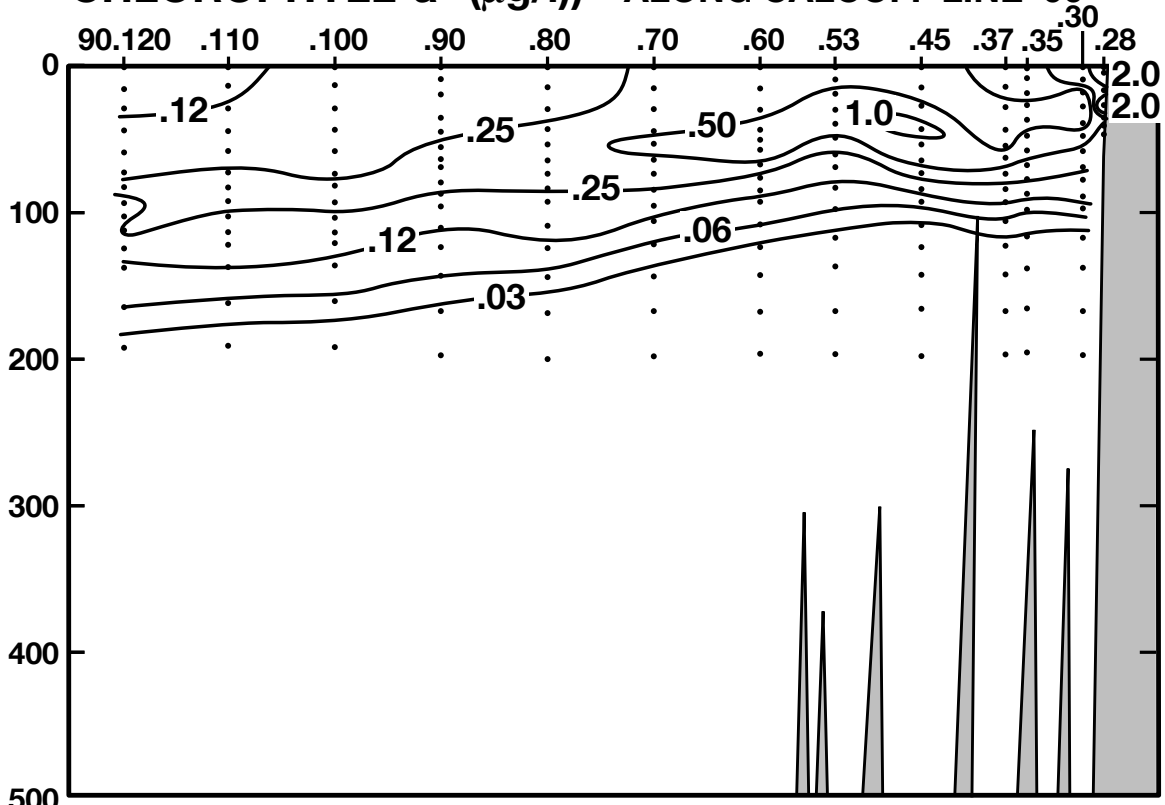

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

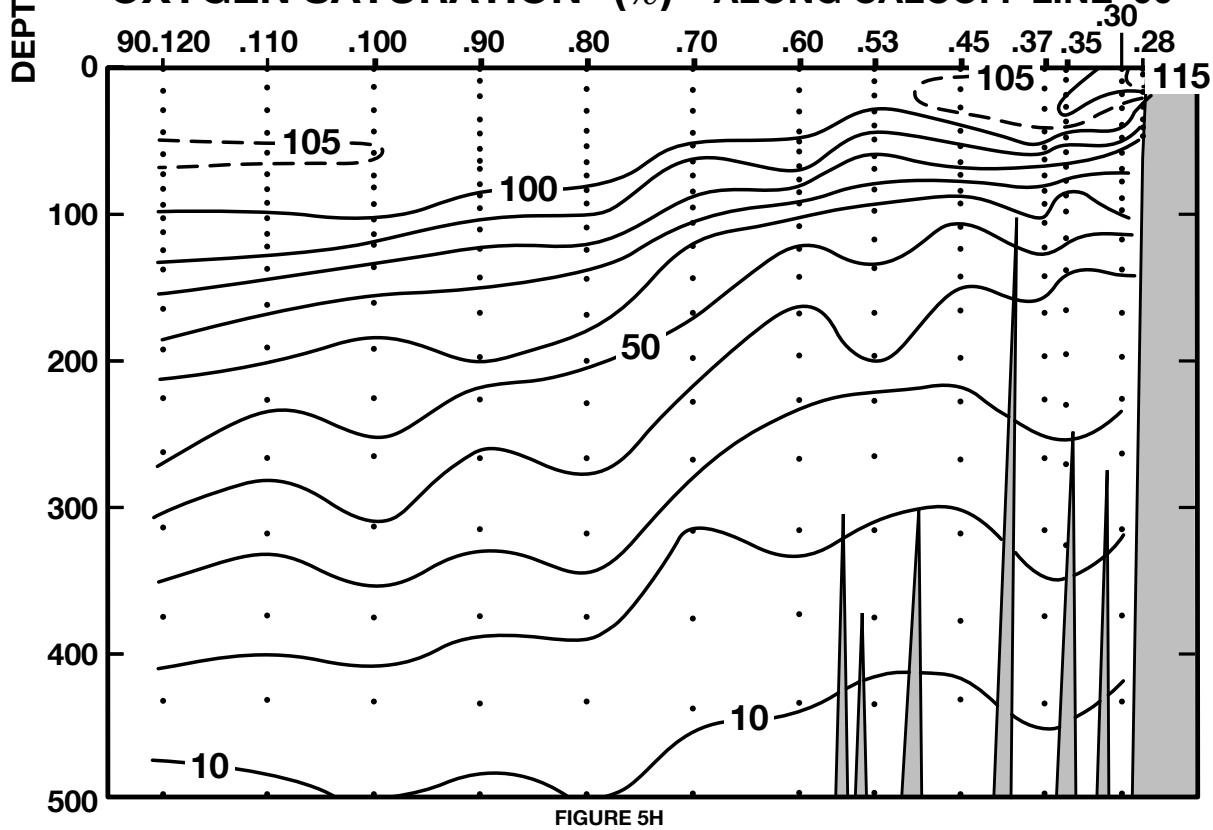

FIGURE 5H

CALCOFI CRUISE 9809

17 - 19 SEPTEMBER 1998

OXYGEN (ml/l) ALONG CALCOFI LINE 90

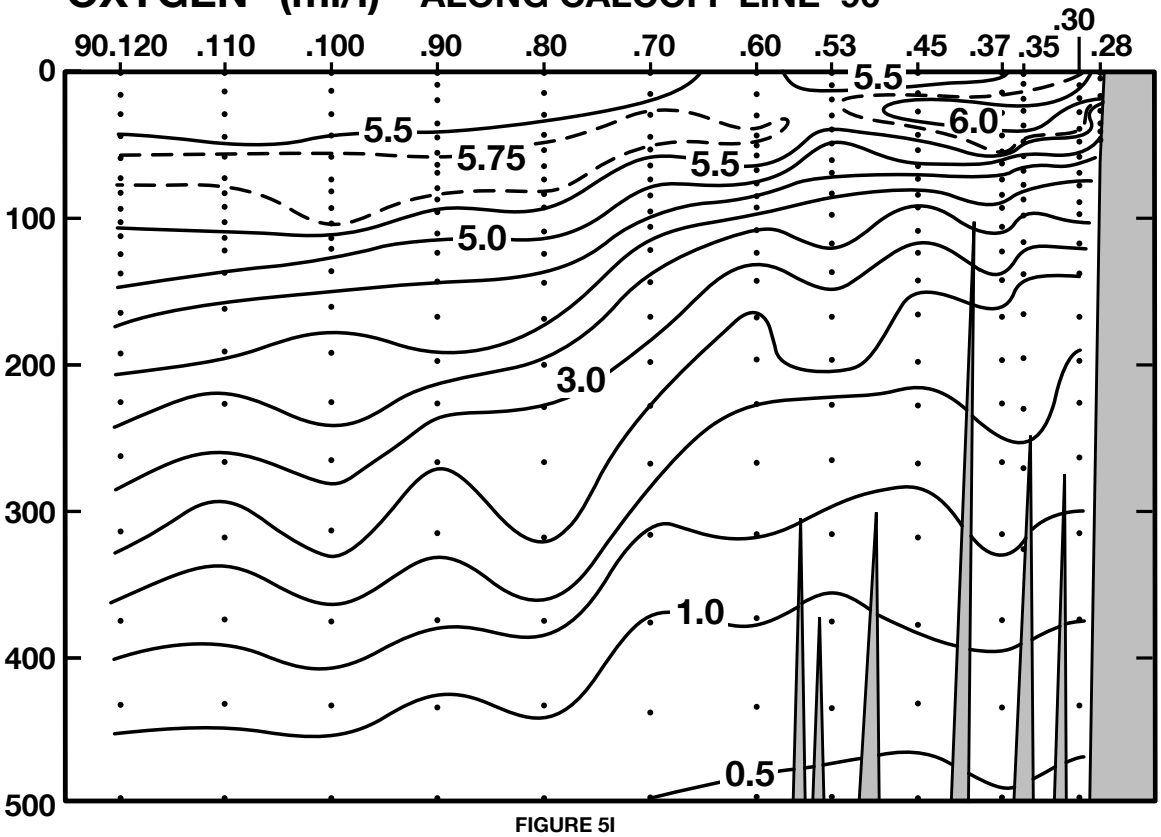

FIGURE 5I

DEPTH (m)

NITRITE (μM/l) ALONG CALCOFI LINE 90

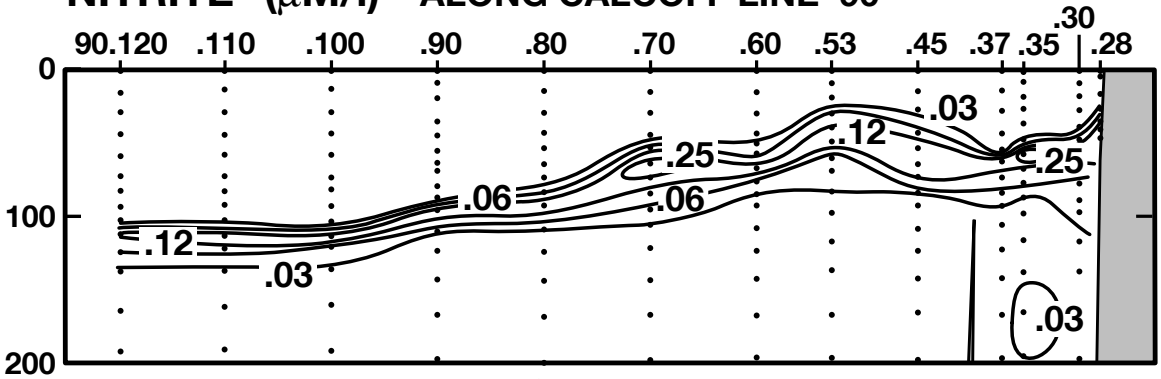

FIGURE 5J

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

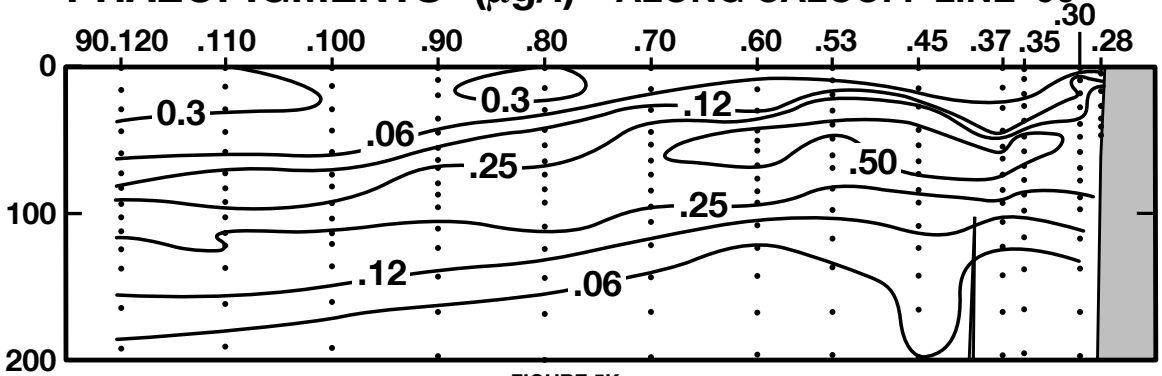

FIGURE 5K

PERSONNEL

CalCOFI Cruise 9809

SHIP'S CAPTAIN

David B. Murline, RV *New Horizon*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participation (Leg)
Wilkinson, James R. (Chief Scientist)	Programmer/Analyst, SIO	1,2
Acuña, Elaine M.	Biological Technician, NMFS	2
Chen, Xi	Graduate Student, SIO	2
Cummings, Sherry L.	Staff Research Associate, SIO	1,2
Flatau, Piotr J.	Associate Research Oceanographer, SIO	1
Frame, Elizabeth R.	Graduate Student, SIO	1,2
Griffith, David A.	Fishery Biologist, NMFS	1,2
Hays, Amy E.	Fishery Biologist, NMFS	1,2
Hyrenbach, K. David	Graduate Student, SIO	1,2
Ireson, Kirk J.	Staff Research Associate, SIO	1
Martynov, Oleg V.	Assistant Research Scientist, Marine Hydro-Physical Institute, Sebastopol, Ukraine	1
Masten, Douglas M.	Staff Research Associate, SIO	1,2
Mitchell, B. Greg	Associate Research Oceanographer, SIO	1
Nelson, Jessica K.	Graduate Student, SIO	2
Ramirez, Fernando	Staff Research Associate, SIO	1
Swenson, Daryl L.	Biological Technician, NMFS	1,2
Toledo, Gerardo V.	Graduate Student, SIO	1,2
Venrick, Elizabeth L.	Research Oceanographer, SIO	1,2
Worden, Alexandra Z.	Graduate Student, Univ. of Georgia	1

Leg 1: San Diego to Dana Point, Ca., 13 Sept. – 19 Sept., 1998
Leg 2: Dana Point to San Diego, Ca., 19 Sept. – 1 Oct., 1998

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
35 5.3 N	120 46.8 W	28/09/98	0452 UTC	69 m	310 05 kn			1016.0 mb	16.7 C	14.8 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	16.01	16.01	33.389	24.507	341.7	0.000	5.98	106.2	2.3	0.28	0.2	0.02	1.69	0.41	0	
1		16.01	16.01	33.389	24.507	341.7	0.003	5.98	106.2	2.3	0.28	0.2	0.02	1.69	0.41	1	208
4		15.57	15.57	33.388	24.605	332.5	0.014	5.92	104.2	2.8	0.31	0.5	0.04	1.88	0.51	4	207
9		14.98	14.98	33.393	24.739	319.9	0.030	5.65	98.3	4.3	0.43	1.5	0.12	2.41	0.77	9	206
10	ISL	14.83	14.83	33.397	24.774	316.6	0.033	5.56	96.5	4.8	0.47	2.0	0.15	2.31	0.76	10	
20		13.57	13.57	33.444	25.074	288.2	0.063	4.77	80.7	9.5	0.84	7.2	0.44	0.84	0.63	20	205
30		13.41	13.41	33.457	25.117	284.4	0.092	4.68	78.9	10.1	0.89	7.8	0.43	0.74	0.58	30	204
39		13.18	13.17	33.466	25.171	279.6	0.117	4.57	76.7	11.0	0.95	8.8	0.39	0.62	0.59	39	203
50		13.03	13.02	33.488	25.218	275.4	0.148	4.41	73.8	12.7	1.04	9.6	0.43	0.51	0.59	50	202
62		12.81	12.80	33.507	25.276	270.2	0.181	4.29	71.4	13.5	1.10	10.6	0.36	0.42	0.61	62	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
35 1.2 N	120 54.9 W	28/09/98	0229 UTC	232 m	300 06 kn	300 01 07	0	1015.4 mb	16.9 C	14.8 C		0/8	

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	17.36	17.36	33.365	24.176	373.3	0.000	5.67	103.4	1.8	0.28	0.1	0.00	0.30	0.05	0	
1		17.36	17.36	33.365	24.176	373.3	0.004	5.67	103.4	1.8	0.28	0.1	0.00	0.30	0.05	1	215
9		17.11	17.11	33.361	24.232	368.2	0.033	5.71	103.6	1.7	0.27	0.1	0.01	0.34	0.06	9	214
10	ISL	17.03	17.03	33.359	24.249	366.6	0.037	5.74	104.0	1.5	0.27	0.1	0.01	0.36	0.07	10	
19		16.20	16.20	33.351	24.436	349.1	0.069	5.91	105.3	0.6	0.28	0.1	0.00	0.55	0.19	19	213
20	ISL	16.12	16.12	33.353	24.455	347.3	0.073	5.90	105.0	0.8	0.28	0.2	0.01	0.88	0.34	20	
29		15.36	15.36	33.367	24.636	330.3	0.103	5.65	99.0	3.0	0.38	0.6	0.10	3.30	1.50	29	212
30	ISL	15.25	15.25	33.366	24.660	328.1	0.107	5.61	98.1	3.2	0.40	0.8	0.13	3.15	1.45	30	
39		14.13	14.12	33.373	24.905	305.0	0.135	5.19	88.7	5.7	0.62	3.9	0.31	1.05	0.63	39	211
49		12.81	12.80	33.448	25.230	274.2	0.164	4.62	76.9	9.4	0.92	9.0	0.12	0.34	0.42	49	210
50	ISL	12.75	12.74	33.454	25.246	272.7	0.167	4.59	76.3	9.6	0.93	9.3	0.11	0.33	0.41	50	
59		12.51	12.50	33.492	25.323	265.6	0.191	4.44	73.5	10.7	1.01	10.5	0.07	0.28	0.37	59	209
70		12.38	12.37	33.498	25.353	263.0	0.220	4.42	72.9	10.9	1.05	10.8	0.06	0.25	0.36	70	208
75	ISL	12.26	12.25	33.510	25.385	260.1	0.233	4.38	72.1	11.2	1.07	11.2	0.06	0.23	0.34	75	
84		12.00	11.99	33.541	25.459	253.3	0.256	4.26	69.7	12.3	1.12	12.4	0.06	0.18	0.29	84	207
100		11.44	11.43	33.617	25.622	238.1	0.296	3.92	63.4	15.8	1.34	15.7	0.02	0.07	0.18	100	206
118		11.00	10.99	33.670	25.743	226.9	0.337	3.56	57.1	18.3	1.49	17.8	0.01	0.04	0.13	119	205
125	ISL	10.78	10.76	33.698	25.804	221.2	0.353	3.43	54.7	19.7	1.56	18.8	0.01	0.04	0.12	126	
140		10.30	10.28	33.764	25.939	208.6	0.385	3.17	50.1	22.8	1.70	21.1	0.01	0.03	0.12	141	204
150	ISL	10.01	9.99	33.808	26.023	200.8	0.406	3.03	47.6	24.6	1.78	22.4	0.01	0.02	0.11	151	
169		9.52	9.50	33.889	26.168	187.3	0.443	2.79	43.4	28.1	1.93	24.5	0.02	0.01	0.08	170	203
199		8.97	8.95	33.995	26.340	171.4	0.496	2.32	35.6	34.5	2.17	27.4	0.02	0.01	0.09	200	202
200	ISL	8.96	8.94	33.997	26.343	171.2	0.498	2.31	35.5	34.6	2.17	27.5	0.02			201	
225		8.67	8.65	34.036	26.419	164.3	0.540	2.11	32.2	38.1	2.27	28.8	0.05			226	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 53.8 N	121 11.9 W	27/09/98	2256 UTC	565 m	270 04 kn	270 02 07	1	1016.2 mb	19.9 C	15.2 C	22m	1/8	CU

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	33.369	24.169	373.9	0.000	5.75	104.9	2.4	0.28	0.1	0.00	0.28	0.06	0	
1		17.40	17.40	33.369	24.169	374.0	0.004	5.75	104.9	2.4	0.28	0.1	0.00	0.28	0.06	1	220
10		16.74	16.74	33.364 D	24.321	359.8	0.037									10	219
20		16.35	16.35	33.364	24.411	351.5	0.072	5.87	104.9	2.0	0.28	0.1	0.00	0.40	0.17	20	218
30		15.78	15.78	33.383	24.555	338.0	0.107	5.94	105.0	1.6	0.29	0.1	0.00	0.96	0.46	30	217
30		15.74	15.74	33.388	24.568	336.8	0.107	5.94	104.9	1.7	0.30	0.1	0.00	1.17	0.53	30	221
40		14.60	14.59	33.427	24.847	310.5	0.139	5.48	94.6	4.1	0.48	1.7	0.09	2.57	1.09	40	216
50		13.79	13.78	33.446	25.032	293.2	0.169	5.04	85.6	6.7	0.68	4.9	0.23	1.65	0.86	50	215
59		13.33	13.32	33.478	25.150	282.1	0.195	4.76	80.1	8.5	0.81	7.1	0.22	1.11	0.68	59	214
70		12.70	12.69	33.523	25.310	267.1	0.225	4.39	72.9	10.9	1.00	10.3	0.15	0.55	0.59	70	213
75	ISL	12.30	12.29	33.556	25.413	257.4	0.239	4.18	68.9	12.6	1.11	12.1	0.11	0.38	0.47	75	
85		11.53	11.52	33.621	25.608	239.0	0.263	3.80	61.6	15.8	1.32	15.5	0.04	0.16	0.25	85	212
99		10.95	10.94	33.657	25.741	226.6	0.296	3.60	57.7	17.8	1.46	17.7	0.03	0.07	0.20	99	211
100	ISL	10.91	10.90	33.663	25.753	225.5	0.298	3.58	57.3	18.0	1.47	17.9	0.03	0.07	0.20	100	
119		10.23	10.22	33.772	25.957	206.5	0.339	3.22	50.8	22.5	1.69	21.2	0.01	0.03	0.12	120	210
125	ISL	10.10	10.09	33.788	25.992	203.3	0.352	3.18	50.0	23.2	1.72	21.7	0.01	0.03	0.11	126	
140		9.83	9.81	33.820	26.062	196.8	0.382	3.11	48.7	24.6	1.77	22.6	0.01	0.02	0.09	141	209
150	ISL	9.57	9.55	33.858	26.135	190.0	0.401	3.03	47.1	26.3	1.83	23.6	0.01	0.01	0.08	151	
170		9.09	9.07	33.934	26.272	177.3	0.438	2.86	44.0	29.7	1.95	25.6	0.01	0.00	0.06	171	208
200		8.80	8.78	33.986	26.359	169.5	0.490	2.71	41.5	32.6	2.04	26.7	0.01	0.01	0.06	201	207
225		8.46	8.44	34.022	26.440	162.2	0.531	2.65	40.3	35.4	2.10	27.7	0.01			226	206
250	ISL	8.09	8.06	34.048	26.517	155.2	0.571	2.43	36.6	39.4	2.22	29.2	0.00			251	
269		7.84	7.81	34.068	26.570	150.4	0.600	2.19	32.8	42.9	2.33	30.5	0.00			271	205
300	ISL	7.57	7.54	34.121	26.651	143.1	0.645	1.74	25.9	48.6	2.52	32.4	0.00			302	
318		7.44	7.41	34.151	26.693	139.3	0.671	1.48	22.0	52.0	2.62	33.4	0.00			320	204
379		6.87	6.83	34.192	26.805	129.3	0.753	0.95	13.9	63.0	2.87	36.3	0.00			381	203
400	ISL	6.68	6.64	34.201	26.838	126.4	0.780	0.84	12.3	66.5	2.93	37.0	0.00			403	
436		6.37	6.33	34.216	26.891	121.6	0.824	0.69	10.0	72.1	3.02	38.1	0.01			439	202
500	ISL	5.85	5.81	34.249	26.984	113.2	0.899	0.48	6.9	80.9	3.14	40.0	0.01			503	
519		5.70	5.66	34.260	27.011	110.7	0.921	0.42	6.0	83.5	3.18	40.6	0.01			523	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 43.6 N	121 33.1 W	27/09/98	1837 UTC	907 m	210 02 kn	310 01 09	1	1017.1 mb	21.2 C	15.7 C	25m	2/8	AS

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	17.82	17.82	33.403	24.094	381.1	0.000	5.62	103.4	1.7	0.26	0.0	0.00	0.22	0.05	0	
1 A	17.82	17.82	33.403	24.094	381.1	0.004	5.62	103.4	1.7	0.26	0.0	0.00	0.22	0.05	1	222
1	17.79	17.79	33.406	24.104	380.2	0.004									1	224
1	17.79	17.79	33.405	24.103	380.3	0.004									1	223
9	17.29	17.29	33.382	24.206	370.8	0.034	5.70	103.8	1.3	0.26	0.0	0.00	0.38	0.12	9	221
10 ISL	17.19	17.19	33.378	24.226	368.8	0.038	5.72	104.0	1.3	0.26	0.0	0.00	0.39	0.12	10	
18 A	16.53	16.53	33.361	24.368	355.6	0.067	5.84	104.8	1.4	0.28	0.0	0.00	0.46	0.14	18	220
20 ISL	16.50	16.50	33.364	24.377	354.8	0.074	5.85	104.9	1.5	0.28	0.0	0.00	0.46	0.14	20	
26	16.45	16.45	33.376	24.398	353.0	0.095	5.86	105.0	1.9	0.29	0.0	0.00	0.44	0.15	26	219
30 ISL	16.27	16.27	33.353	24.422	350.8	0.109	5.89	105.1	1.8	0.30	0.0	0.00	0.57	0.23	30	
34 A	16.09	16.08	33.383	24.486	344.8	0.123	5.91	105.1	1.8	0.30	0.0	0.00	0.90	0.30	34	218
43	13.61	13.60	33.234	24.905	305.1	0.152	5.65	95.5	3.6	0.54	2.7	0.11	2.78	1.07	43	217
50 ISL	12.55	12.54	33.299	25.165	280.4	0.173	5.17	85.5	7.6	0.84	7.6	0.09	1.29	0.85	50	
52 A	12.37	12.36	33.330	25.224	274.8	0.178	5.02	82.7	8.7	0.92	9.0	0.09	0.75	0.73	52	216
59	12.12	12.11	33.414	25.337	264.2	0.197	4.63	75.9	10.5	1.03	11.0	0.05	0.40	0.60	59	215
67 A	11.84	11.83	33.502	25.458	252.9	0.218	4.30	70.1	13.3	1.22	13.9	0.04	0.41	0.58	67	214
75 ISL	11.45	11.44	33.565	25.579	241.5	0.237	4.00	64.7	15.6	1.37	16.2	0.03	0.27	0.42	75	
81	11.15	11.14	33.599	25.660	233.9	0.252	3.83	61.6	17.0	1.45	17.5	0.02	0.15	0.28	81	213
95 A	10.67	10.66	33.649	25.784	222.4	0.284	3.68	58.6	18.5	1.52	18.7	0.02	0.09	0.16	95	212
100 ISL	10.49	10.48	33.674	25.835	217.6	0.295	3.58	56.8	19.6	1.57	19.5	0.02	0.07	0.13	100	
108	10.20	10.19	33.716	25.918	209.9	0.312	3.41	53.8	21.4	1.65	20.9	0.01	0.05	0.11	109	211
117	9.91	9.90	33.758	26.000	202.2	0.330	3.29	51.5	23.1	1.73	21.9	0.01	0.03	0.10	118	210
125 ISL	9.76	9.75	33.803	26.060	196.7	0.346	3.11	48.6	24.7	1.81	23.0	0.01	0.03	0.09	126	
138	9.59	9.57	33.876	26.146	188.8	0.371	2.80	43.6	27.4	1.94	24.8	0.01	0.02	0.08	139	209
150 ISL	9.33	9.31	33.929	26.230	181.0	0.394	2.65	41.0	29.7	2.02	25.9	0.01	0.01	0.07	151	
169	8.94	8.92	33.994	26.343	170.5	0.427	2.51	38.5	32.8	2.10	27.2	0.01	0.00	0.06	170	208
198	8.61	8.59	34.044	26.434	162.3	0.475	2.36	36.0	36.2	2.20	28.4	0.01			199	207
200 ISL	8.59	8.57	34.048	26.440	161.8	0.478	2.34	35.7	36.4	2.21	28.5	0.01			201	
229	8.34	8.32	34.095	26.516	155.0	0.524	2.04	30.9	40.4	2.34	29.9	0.01			230	206
250 ISL	8.01	7.98	34.110	26.577	149.4	0.556	1.90	28.6	44.1	2.43	31.0	0.01			251	
269	7.70	7.67	34.119	26.630	144.6	0.584	1.79	26.7	47.6	2.51	32.0	0.01			271	205
300 ISL	7.32	7.29	34.133	26.696	138.7	0.628	1.56	23.1	52.6	2.62	33.5	0.00			302	
319	7.14	7.11	34.143	26.729	135.8	0.654	1.41	20.8	55.4	2.69	34.4	0.00			321	204
375	6.76	6.73	34.190	26.818	127.9	0.728	1.01	14.8	63.3	2.88	36.5	0.00			377	203
400 ISL	6.43	6.39	34.172	26.848	125.2	0.760	0.93	13.5	67.2	2.94	37.7	0.00			403	
434	5.99	5.95	34.149	26.886	121.6	0.802	0.86	12.3	72.4	3.00	39.2	0.00			437	202
500 ISL	5.73	5.69	34.215	26.971	114.2	0.879	0.60	8.6	80.1	3.13	40.5	0.00			503	
514	5.68	5.64	34.229	26.989	112.7	0.895	0.55	7.8	81.7	3.16	40.8	0.00			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 23.0 N	122 14.8 W	27/09/98	1133 UTC	4003 m	310 04 kn			1014.3 mb	16.3 C	14.1 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	33.385	24.145	376.2	0.000	5.63	103.1	1.7	0.27	0.0	0.00	0.24	0.05	0	
1	17.55	17.55	33.385	24.146	376.2	0.004	5.63	103.1	1.7	0.27	0.0	0.00	0.24	0.05	1	220
10 ISL	17.55	17.55	33.389	24.149	376.2	0.038	5.64	103.2	1.6	0.27	0.0	0.00	0.25	0.05	10	
14	17.55	17.55	33.391	24.151	376.2	0.053	5.65	103.4	1.6	0.27	0.0	0.00	0.26	0.05	14	219
20 ISL	17.48	17.48	33.389	24.166	374.9	0.075	5.63	102.9	1.6	0.27	0.0	0.00	0.29	0.07	20	
29	17.37	17.37	33.387	24.191	372.8	0.109	5.61	102.3	1.5	0.27	0.0	0.00	0.34	0.10	29	218
30 ISL	17.20	17.20	33.379	24.225	369.6	0.113	5.63	102.4	1.5	0.28	0.1	0.01	0.43	0.14	30	
44	14.29	14.28	33.249	24.776	317.4	0.161	5.81	99.6	2.8	0.44	1.1	0.21	1.31	0.60	44	217
50 ISL	13.12	13.11	33.179	24.961	299.9	0.179	5.60	93.7	4.0	0.57	2.9	0.34	1.00	0.56	50	
54	12.48	12.47	33.156	25.068	289.7	0.191	5.40	89.1	5.1	0.67	4.6	0.37	0.71	0.54	54	216
64	11.81	11.80	33.282	25.292	268.5	0.219	4.82	78.5	9.4	0.99	10.2	0.03	0.24	0.29	64	215
74	11.79	11.78	33.441	25.420	256.7	0.245	4.47	72.8	12.9	1.19	13.2	0.02	0.17	0.18	74	214
75 ISL	11.75	11.74	33.442	25.428	255.9	0.248	4.46	72.6	13.0	1.20	13.3	0.02	0.17	0.18	75	
84	11.17	11.16	33.437	25.530	246.3	0.270	4.36	70.1	14.0	1.26	14.5	0.02	0.13	0.18	84	213
94	10.34	10.33	33.555	25.768	223.8	0.294	3.79	59.9	19.0	1.54	19.2	0.01	0.07	0.10	94	212
100 ISL	10.02	10.01	33.598	25.856	215.5	0.307	3.63	57.0	21.0	1.64	20.8	0.01	0.04	0.08	100	
109	9.72	9.71	33.653	25.949	206.8	0.326	3.47	54.1	23.1	1.74	22.2	0.01	0.02	0.07	110	211
124	9.47	9.46	33.781	26.091	193.6	0.356	3.09	47.9	26.0	1.87	24.1	0.01	0.01	0.05	125	210
125 ISL	9.46	9.45	33.791	26.100	192.8	0.358	3.05	47.3	26.3	1.88	24.3	0.01	0.01	0.05	126	
144	9.26	9.24	33.965	26.269	177.1	0.393	2.40	37.1	31.5	2.12	27.1	0.01	0.01	0.08	145	209
150 ISL	9.15	9.13	33.992	26.308	173.5	0.404	2.36	36.4	32.6	2.16	27.6	0.01	0.01	0.07	151	
166	8.82	8.80	34.026	26.387	166.2	0.431	2.27	34.8	34.8	2.20	28.3	0.01	0.01	0.05	167	208
197	8.24	8.22	34.013	26.466	159.1	0.481	2.52	38.1	37.3	2.20	29.0	0.01	0.00	0.04	198	207
200 ISL	8.21	8.19	34.017	26.474	158.4	0.486	2.50	37.8	37.6	2.21	29.1	0.01			201	
227	7.96	7.94	34.056	26.542	152.3	0.528	2.28	34.2	40.9	2.30	30.1	0.02			228	206
250 ISL	7.68	7.66	34.071	26.595	147.6	0.562	2.16	32.2	44.2	2.38	31.2	0.02			251	
267	7.46	7.43	34.074	26.629	144.5	0.587	2.09	31.0	46.8	2.44	32.0	0.01			269	205
300 ISL	7.00	6.97	34.057	26.680	140.0	0.634	1.98	29.1	51.2	2.52	33.4	0.01			302	
317	6.79	6.76	34.051	26.704	137.8	0.658	1.89	27.6	53.6	2.56	34.1	0.01			319	204
377	6.39	6.36	34.119	26.811	128.3	0.738	1.15	16.7	64.2	2.85	37.5	0.01			379	203
400 ISL	6.26	6.22	34.145	26.849	125.0	0.767	0.95	13.7	67.7	2.94	38.4	0.01			403	
438	6.04	6.00	34.183	26.907	119.8	0.813	0.69	9.9	73.3	3.05	39.6	0.01			441	202
500 ISL	5.56	5.52	34.220	26.996	111.7	0.885	0.48	6.8	82.8	3.17	41.2	0.01			503	
515	5.45	5.41	34.229	27.016	109.8	0.902	0.43	6.1	85.1	3.20	41.6	0.01			519	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 3.4 N	122 56.5 W	27/09/98	0551 UTC	4213 m	310 02 kn			1014.2 mb	16.9 C	14.9 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	17.66	17.66	33.069	23.877	401.8	0.000	5.56	101.8	1.9	0.28	0.1	0.00	0.12	0.03	0	220
10 ISL	17.60	17.60	33.066	23.889	400.9	0.040	5.59	102.2	1.8	0.28	0.1	0.00	0.14	0.03	10	
15	17.57	17.57	33.064	23.895	400.5	0.060	5.60	102.4	1.8	0.28	0.1	0.00	0.15	0.03	15	219
20 ISL	17.25	17.25	33.052	23.963	394.3	0.080	5.66	102.8	1.8	0.29	0.1	0.00	0.17	0.04	20	
30	16.28	16.28	33.031	24.172	374.6	0.118	5.81	103.5	1.8	0.30	0.0	0.00	0.24	0.08	30	218
45	14.25	14.24	33.061	24.639	330.4	0.171	5.99	102.5	1.9	0.31	0.0	0.00	0.36	0.23	45	217
50 ISL	13.91	13.90	33.065	24.713	323.5	0.188	5.95	101.1	2.1	0.33	0.1	0.02	0.56	0.46	50	
55	13.68	13.67	33.080	24.772	318.1	0.204	5.85	98.9	2.5	0.37	0.2	0.04	0.71	0.67	55	216
65	13.29	13.28	33.207	24.949	301.4	0.235	5.45	91.5	3.9	0.51	2.4	0.11	0.52	0.64	65	215
75	12.68	12.67	33.283	25.128	284.5	0.264	5.02	83.2	6.4	0.75	6.5	0.05	0.27	0.50	75	214
85	11.95	11.94	33.377	25.341	264.5	0.291	4.67	76.3	9.3	0.97	10.2	0.03	0.19	0.46	85	213
95	11.44	11.43	33.425	25.472	252.1	0.317	4.46	72.1	11.3	1.12	12.5	0.02	0.16	0.30	95	212
100 ISL	11.06	11.05	33.439	25.552	244.6	0.330	4.37	70.1	12.6	1.20	13.8	0.02	0.13	0.22	100	
110	10.33	10.32	33.489	25.719	228.9	0.353	4.17	65.8	15.7	1.36	16.6	0.01	0.06	0.10	110	211
125	9.73	9.72	33.679	25.968	205.4	0.386	3.68	57.4	20.8	1.61	20.8	0.01	0.02	0.07	126	210
145	9.40	9.38	33.799	26.116	191.6	0.426	3.23	50.0	25.5	1.82	23.6	0.00	0.00	0.04	146	209
150 ISL	9.41	9.39	33.837	26.145	189.1	0.435	3.00	46.5	26.7	1.89	24.4	0.00	0.00	0.04	151	
168	9.43	9.41	33.960	26.238	180.6	0.468	2.36	36.6	30.5	2.09	26.5	0.00	0.00	0.04	169	208
199	8.47	8.45	33.977	26.403	165.2	0.522	3.15	47.8	31.9	1.94	25.9	0.01	0.00	0.03	200	207
200 ISL	8.45	8.43	33.978	26.407	164.8	0.524	3.15	47.8	32.0	1.94	26.0	0.01			201	
228	7.97	7.95	33.997	26.494	156.9	0.569	2.85	42.8	36.7	2.11	28.2	0.01			229	206
250 ISL	7.65	7.63	34.013	26.554	151.5	0.603	2.63	39.2	40.5	2.22	29.6	0.00			251	
268	7.42	7.39	34.027	26.598	147.5	0.630	2.44	36.2	43.6	2.30	30.7	0.00			270	205
300 ISL	7.13	7.10	34.052	26.658	142.1	0.676	2.07	30.5	48.7	2.45	32.6	0.00			302	
317	6.99	6.96	34.063	26.686	139.6	0.700	1.88	27.6	51.4	2.53	33.6	0.00			319	204
378	6.28	6.25	34.078	26.793	129.9	0.782	1.40	20.2	62.4	2.77	36.7	0.00			380	203
400 ISL	6.08	6.05	34.090	26.828	126.7	0.810	1.24	17.8	66.2	2.84	37.7	0.00			403	
437	5.78	5.74	34.111	26.882	121.8	0.856	1.00	14.3	72.2	2.95	39.3	0.00			440	202
500 ISL	5.33	5.29	34.135	26.956	115.2	0.931	0.75	10.6	81.5	3.07	41.0	0.00			503	
520	5.19	5.15	34.143	26.979	113.1	0.954	0.67	9.4	84.5	3.11	41.6	0.00			524	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 43.4 N	123 38.0 W	27/09/98	0011 UTC	4134 m	320 08 kn	320 02 05	1	1014.0 mb	16.9 C	15.0 C	25m	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	17.75	17.75	33.068	23.854	403.9	0.000	5.56	102.0	1.8	0.29	0.0	0.00	0.14	0.03	0	
1	17.75	17.75	33.068	23.855	403.9	0.004	5.56	102.0	1.8	0.29	0.0	0.00	0.14	0.03	1	220
10 ISL	17.67	17.67	33.065	23.872	402.6	0.040	5.57	102.0	1.8	0.29	0.0	0.00	0.14	0.03	10	
15	17.61	17.61	33.063	23.885	401.5	0.060	5.58	102.1	1.8	0.29	0.0	0.00	0.14	0.03	15	219
20 ISL	17.60	17.60	33.062	23.887	401.5	0.081	5.58	102.0	1.8	0.29	0.0	0.00	0.15	0.04	20	
30	17.57	17.56	33.061	23.894	401.2	0.121	5.58	102.0	1.7	0.29	0.0	0.00	0.20	0.06	30	218
45	17.35	17.34	33.054	23.941	397.2	0.181	5.62	102.3	1.7	0.29	0.0	0.00	0.35	0.13	45	217
50 ISL	16.91	16.90	33.060	24.050	387.0	0.200	5.70	102.8	1.7	0.30	0.0	0.00	0.39	0.15	50	
55	16.37	16.36	33.069	24.182	374.5	0.219	5.78	103.2	1.7	0.31	0.0	0.00	0.42	0.19	55	216
65	15.24	15.23	33.081	24.444	349.7	0.255	5.88	102.6	1.7	0.33	0.0	0.00	0.46	0.45	65	215
74	14.26	14.25	33.006	24.595	335.4	0.286	5.93	101.4	1.9	0.36	0.1	0.01	0.61	0.24	74	214
75 ISL	14.17	14.16	33.002	24.611	333.9	0.290	5.92	101.1	1.9	0.36	0.1	0.04	0.59	0.26	75	
85	13.43	13.42	33.005	24.765	319.5	0.322	5.75	96.7	2.5	0.42	0.8	0.27	0.32	0.47	85	213
95	13.06	13.05	33.092	24.906	306.2	0.354	5.52	92.1	3.6	0.52	2.4	0.13	0.20	0.43	95	212
100 ISL	12.80	12.79	33.160	25.010	296.4	0.369	5.31	88.2	4.8	0.62	4.3	0.08	0.16	0.40	100	
109	12.27	12.26	33.286	25.210	277.5	0.394	4.91	80.7	7.5	0.84	8.1	0.03	0.12	0.34	109	211
125	11.20	11.18	33.435	25.524	247.9	0.436	4.39	70.6	12.0	1.15	13.2	0.02	0.07	0.24	126	210
145	10.43	10.41	33.591	25.782	223.7	0.484	4.17	66.0	15.7	1.34	16.5	0.01	0.04	0.13	146	209
150 ISL	10.24	10.22	33.631	25.846	217.7	0.495	4.04	63.7	17.1	1.41	17.7	0.01	0.03	0.11	151	
169	9.57	9.55	33.772	26.068	196.8	0.534	3.50	54.4	22.8	1.68	21.9	0.01	0.01	0.04	170	208
199	8.93	8.91	33.926	26.292	175.9	0.590	3.11	47.7	28.7	1.89	25.1	0.01	0.00	0.03	200	207
200 ISL	8.91	8.89	33.928	26.297	175.5	0.592	3.11	47.7	28.9	1.89	25.2	0.01			201	
228	8.32	8.30	33.958	26.411	164.9	0.639	3.00	45.4	33.6	2.01	27.0	0.01			229	206
250 ISL	7.99	7.96	33.994	26.489	157.8	0.675	2.78	41.8	37.5	2.12	28.5	0.01			251	
268	7.78	7.75	34.022	26.542	153.0	0.703	2.56	38.3	40.6	2.22	29.7	0.01			269	205
300 ISL	7.43	7.40	34.051	26.616	146.4	0.751	2.18	32.3	45.9	2.38	31.7	0.01			302	
318	7.26	7.23	34.064	26.650	143.3	0.777	1.96	29.0	48.9	2.47	32.7	0.01			320	204
377	6.70	6.67	34.119	26.770	132.4	0.858	1.28	18.7	59.6	2.76	36.0	0.01			379	203
400 ISL	6.47	6.43	34.130	26.810	128.9	0.888	1.10	16.0	63.7	2.84	37.2	0.01			402	
438	6.12	6.08	34.149	26.870	123.4	0.936	0.86	12.4	70.1	2.96	38.8	0.01			441	202
500 ISL	5.81	5.77	34.208	26.956	115.8	1.010	0.57	8.1	78.4	3.10	40.3	0.01			503	
517	5.73	5.69	34.224	26.979	113.8	1.030	0.49	7.0	80.7	3.14	40.7	0.01			520	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 23.3 N	124 19.7 W	26/09/98	1754 UTC	4463 m	320	11 kn	320 02 07	1	1015.4 mb	19.5 c	16.9 c	32m	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	18.03	18.03	33.131	23.835	405.8	0.000	5.59	103.1	1.7	0.27	0.1	0.00	0.14	0.03	0	
0	18.04	18.04	33.134	23.835	405.8	0.000									0	223
1	18.06	18.06	33.136	23.831	406.1	0.004									1	224
1 A	18.03	18.03	33.131	23.835	405.8	0.004	5.59	103.1	1.7	0.27	0.1	0.00	0.14	0.03	1	222
10 ISL	18.00	18.00	33.129	23.841	405.5	0.041	5.55	102.3	1.7	0.27	0.1	0.00	0.13	0.04	10	
12	17.99	17.99	33.128	23.843	405.5	0.049	5.54	102.1	1.7	0.27	0.1	0.00	0.13	0.04	12	221
20 ISL	17.97	17.97	33.123	23.844	405.6	0.081	5.53	101.9	1.6	0.27	0.1	0.00	0.14	0.03	20	
25 A	17.95	17.95	33.124	23.850	405.2	0.101	5.53	101.8	1.6	0.27	0.1	0.00	0.15	0.03	25	220
30 ISL	17.87	17.86	33.115	23.863	404.2	0.122	5.57	102.4	1.6	0.27	0.1	0.00	0.16	0.03	30	
34	17.81	17.80	33.108	23.872	403.4	0.138	5.62	103.2	1.6	0.27	0.1	0.00	0.17	0.04	34	219
44 A	16.71	16.70	33.098	24.125	379.6	0.177	5.76	103.5	1.7	0.31	0.1	0.00			44	218
50 ISL	16.73	16.72	33.285	24.264	366.5	0.199	5.83	105.0	1.7	0.26	0.1	0.00	0.29	0.13	50	
56	16.74	16.73	33.468	24.403	353.5	0.221	5.88	106.0	1.8	0.21	0.1	0.00	0.34	0.15	56	217
67 A	15.45	15.44	33.437	24.672	328.1	0.258	5.90	103.6	2.0	0.23	0.0	0.00	0.38	0.07	67	216
75 ISL	15.07	15.06	33.457	24.771	318.9	0.284	5.91	103.0	2.1	0.22	0.0	0.00	0.33	0.16	75	
78	14.98	14.97	33.473	24.802	315.9	0.294	5.92	103.0	2.2	0.22	0.0	0.00	0.31	0.21	78	215
86 A	14.66	14.65	33.538	24.922	304.8	0.319	5.96	103.1	2.3	0.22	0.0	0.00	0.26	0.30	86	214
97	14.28	14.27	33.545	25.008	296.9	0.352	5.86	100.6	2.5	0.25	0.1	0.01	0.24	0.39	97	213
100 ISL	14.20	14.19	33.553	25.031	294.7	0.361	5.81	99.6	2.6	0.26	0.3	0.05	0.23	0.38	100	
109	13.76	13.74	33.555	25.124	286.1	0.387	5.58	94.8	3.6	0.35	1.1	0.13	0.20	0.35	109	212
119 A	12.61	12.59	33.485	25.299	269.4	0.415	5.13	85.0	6.3	0.68	6.0	0.03	0.17	0.23	120	211
125 ISL	12.39	12.37	33.518	25.368	263.0	0.430	5.01	82.7	7.2	0.75	7.2	0.02	0.15	0.24	126	
128	12.30	12.28	33.538	25.401	260.0	0.438	4.96	81.7	7.7	0.78	7.7	0.02	0.14	0.24	129	210
139	11.38	11.36	33.515	25.554	245.4	0.466	4.64	74.9	10.9	1.05	11.7	0.02	0.08	0.17	140	209
150 ISL	10.78	10.76	33.557	25.695	232.2	0.492	4.41	70.3	13.4	1.21	14.4	0.02	0.07	0.13	151	
164	10.25	10.23	33.645	25.855	217.1	0.524	4.18	65.9	16.3	1.36	16.9	0.01	0.05	0.09	165	208
193	9.26	9.24	33.803	26.143	190.0	0.583	3.71	57.3	23.5	1.68	22.2	0.00	0.01	0.03	194	207
200 ISL	9.13	9.11	33.844	26.196	185.1	0.596	3.69	56.8	24.6	1.70	22.7	0.00			201	
228	8.76	8.74	33.973	26.356	170.4	0.646	3.63	55.5	28.1	1.75	23.7	0.00			229	206
250 ISL	8.43	8.40	34.002	26.430	163.7	0.683	3.49	53.0	31.3	1.84	25.1	0.00			251	
268	8.16	8.13	34.003	26.471	159.9	0.712	3.35	50.5	34.0	1.92	26.3	0.00			269	205
300 ISL	7.74	7.71	34.009	26.538	153.9	0.762	3.12	46.6	38.1	2.04	28.0	0.00			302	
316	7.54	7.51	34.010	26.568	151.2	0.786	2.98	44.3	40.4	2.11	28.9	0.00			318	204
377	6.66	6.63	34.037	26.711	137.9	0.874	2.18	31.8	52.7	2.49	33.7	0.00			379	203
400 ISL	6.41	6.37	34.051	26.755	133.9	0.906	1.81	26.2	57.8	2.63	35.5	0.00			402	
437	6.07	6.03	34.076	26.819	128.1	0.954	1.28	18.4	65.7	2.82	38.0	0.00			440	202
500 ISL	5.71	5.67	34.123	26.901	120.8	1.033	0.91	13.0	75.0	3.00	40.2	0.00			503	
521	5.59	5.55	34.139	26.928	118.3	1.058	0.79	11.2	78.1	3.06	40.9	0.00			524	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 27.0 N	120 31.6 W	25/09/98	0217 UTC	74 m	290	14 kn	290 01 04	1	1014.0 mb	17.0 c	15.1 c		3/8	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	17.05	17.05	33.380	24.260	365.2	0.000	5.87	106.4	0.6	0.24	0.1	0.00	0.78	0.21	0	
1	17.05	17.05	33.380	24.260	365.3	0.004									1	211
1	17.05	17.05	33.380	24.260	365.3	0.004	5.87	106.4	0.6	0.24	0.1	0.00	0.78	0.21	1	210
4	17.06	17.06	33.383	24.260	365.3	0.015	5.85	106.1	0.6	0.24	0.1	0.00	0.87	0.14	4	209
9	16.96	16.96	33.378	24.280	363.6	0.033	5.88	106.4	0.8	0.25	0.1	0.00	0.89	0.22	9	208
10 ISL	16.83	16.83	33.379	24.312	360.7	0.036	5.86	105.8	1.0	0.26	0.2	0.00	1.04	0.24	10	
19	15.45	15.45	33.399	24.641	329.6	0.068	5.63	98.9	3.1	0.40	0.6	0.05	2.41	0.49	19	207
20 ISL	15.38	15.38	33.397	24.655	328.3	0.071	5.63	98.8	3.1	0.40	0.6	0.05	2.38	0.54	20	
30	14.91	14.91	33.383	24.747	319.8	0.103	5.62	97.6	3.4	0.41	0.3	0.05	2.08	0.90	30	206
40	14.11	14.10	33.426	24.950	300.7	0.134	5.08	86.9	6.0	0.62	2.6	0.33	0.95	0.53	40	205
50	13.80	13.79	33.460	25.041	292.3	0.164	4.93	83.8	7.0	0.71	4.7	0.21	0.90	0.54	50	203
50	13.85	13.84	33.446	25.020	294.3	0.164									50	204
60	13.36	13.35	33.488	25.152	282.0	0.193	4.67	78.6	8.7	0.86	7.2	0.19	0.71	0.46	60	202
67	13.08	13.07	33.511	25.226	275.1	0.212	4.50	75.4	9.7	0.93	8.5	0.17	0.55	0.47	67	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 19.0 N	120 48.8 W	25/09/98	0501 UTC	827 m	320	14 kn			1014.9 mb	16.3 c	14.5 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	16.18	16.18	33.371	24.455	346.7	0.000	5.95	106.0	2.5	0.31	0.0	0.00	0.53	0.22	0	
1	16.18	16.18	33.371	24.455	346.7	0.003	5.95	106.0	2.5	0.31	0.0	0.00	0.53	0.22	1	220
10	16.19	16.19	33.377	24.458	346.8	0.035	5.96	106.2	2.5	0.31	0.0	0.00	0.59	0.28	10	219
20	16.14	16.14	33.386	24.476	345.3	0.069	5.94	105.8	2.4	0.32	0.0	0.00	0.70	0.40	20	218
30	14.87	14.87	33.377	24.751	319.4	0.103	5.51	95.6	4.2	0.46	1.8	0.19	1.94	0.76	30	217
40	13.17	13.16	33.477	25.181	278.6	0.132	4.60	77.2	9.4	0.90	8.3	0.34	0.52	0.34	40	216
50	12.45	12.44	33.534	25.367	261.2	0.159	4.27	70.6	11.8	1.07	11.3	0.07	0.24	0.28	50	215
60	12.04	12.03	33.572	25.475	251.2	0.185	4.07	66.7	13.6	1.19	13.1	0.04	0.15	0.20	60	214
71	11.69	11.68	33.606	25.567	242.6	0.212	3.91	63.6	15.2	1.28	14.6	0.03	0.10	0.19	71	213
75 ISL	11.49	11.48	33.611	25.607	238.8	0.222	3.93	63.7	15.4	1.29	15.0	0.03	0.09	0.19	75	
86	10.96	10.95	33.629	25.717	228.6	0.248	3.98	63.8	16.2	1.34	16.0	0.02	0.07	0.17	86	212
97	10.66	10.65	33.672	25.804	220.5	0.272	3.77	60.0	18.2	1.45	17.7	0.02	0.05	0.13	97	211
100 ISL	10.59	10.58	33.682	25.824	218.7	0.279	3.73	59.3	18.7	1.47	18.1	0.02	0.05	0.12	100	
120	10.17	10.16	33.739	25.941	207.9	0.321	3.49	55.0	21.4	1.61	20.1	0.01	0.03	0.08	121	210
125 ISL	10.10	10.09	33.752	25.963	205.9	0.332	3.43	54.0	21.9	1.64	20.5	0.01	0.03	0.08	126	
139	9.90	9.88	33.795	26.031	199.8	0.360	3.26	51.1	23.6	1.72	21.7	0.01	0.02	0.08	140	209
150 ISL	9.61	9.59	33.853	26.125	191.0	0.382	3.05	47.5	26.3	1.83	23.2	0.01	0.02	0.08	151	
169	9.11	9.09	33.957	26.287	175.9	0.417	2.67	41.1	31.2	2.03	25.9	0.01	0.01	0.08	170	208
198	8.79	8.77	34.041	26.404	165.3	0.466	2.25	34.4	35.8	2.21	28.1	0.01	0.01	0.06	199	207
200 ISL	8.76	8.74	34.045	26.412	164.5	0.469	2.23	34.1	36.1	2.22	28.2	0.01			201	
229	8.41	8.39	34.096	26.506	156.0	0.516	1.99	30.2	40.3	2.34	29.7	0.01			230	206
250 ISL	8.23	8.20	34.121	26.553	151.9	0.548	1.83	27.7	42.9	2.41	30.5	0.01			251	
269	8.06	8.03	34.137	26.591	148.5	0.577	1.69	25.5	45.5	2.48	31.3	0.01			271	205
300 ISL	7.55	7.52	34.147	26.674	140.9	0.622	1.49	22.2	51.3	2.61	33.0	0.00			302	
318	7.24	7.21	34.151	26.721	136.5	0.646	1.37	20.2	54.9	2.68	34.1	0.00			320	204
375	6.72	6.69	34.183	26.818	127.9	0.722	0.97	14.2	63.9	2.88	36.7	0.00			377	203
400 ISL	6.53	6.49	34.194	26.852	124.9	0.753	0.84	12.2	67.3	2.95	37.6	0.00			403	
437	6.26	6.22	34.213	26.903	120.4	0.799	0.68	9.8	72.3	3.03	38.7	0.00			440	202
500 ISL	5.72	5.68	34.260	27.008	110.7	0.872	0.44	6.3	82.4	3.17	40.7	0.00			503	
511	5.63	5.59	34.269	27.026	109.1	0.884	0.40	5.7	84.2	3.20	41.1	0.00			515	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 8.9 N	121 8.8 W	25/09/98	0855 UTC	2148 m	330 13 kn			1015.2 mb	16.5 C	14.3 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		17.86	17.86	33.360 D	24.052	385.1	0.000	5.62	103.5	1.9	0.25	0.1	0.00	0.30	0.06	0	220
9		17.86	17.86	33.360 D	24.052	385.4	0.035	5.63	103.7	1.9	0.25	0.0	0.00	0.27	0.07	9	219
10	ISL	17.86	17.86	33.360	24.052	385.4	0.039	5.63	103.7	1.9	0.25	0.0	0.00	0.27	0.07	10	
19		17.82	17.82	33.356	24.059	385.1	0.073	5.62	103.4	1.7	0.25	0.1	0.00	0.28	0.08	19	218
20	ISL	17.81	17.81	33.355	24.061	385.0	0.077	5.63	103.6	1.7	0.25	0.1	0.00	0.29	0.08	20	
29		17.46	17.46	33.341	24.134	378.2	0.111	5.71	104.3	1.6	0.25	0.0	0.00	0.34	0.10	29	217
30	ISL	17.42	17.42	33.348	24.149	376.8	0.115	5.71	104.2	1.7	0.26	0.0	0.00	0.50	0.15	30	
40		16.09	16.08	33.346	24.458	347.7	0.151	5.71	101.5	2.5	0.34	0.5	0.03	1.85	0.64	40	216
49		12.77	12.76	33.183	25.032	293.0	0.180	5.44	90.3	6.3	0.75	6.0	0.10	1.01	0.71	49	215
50	ISL	12.71	12.70	33.205	25.061	290.3	0.183	5.40	89.6	6.6	0.78	6.4	0.10	0.95	0.69	50	
60		12.16	12.15	33.278	25.224	275.0	0.211	4.92	80.7	9.0	0.97	9.5	0.06	0.55	0.42	60	214
70		11.65	11.64	33.452	25.454	253.3	0.238	4.45	72.3	12.6	1.20	13.4	0.03	0.19	0.27	70	213
75	ISL	11.43	11.42	33.520	25.548	244.5	0.250	4.28	69.2	13.7	1.26	14.4	0.02	0.15	0.21	75	
84		11.02	11.01	33.617	25.697	230.4	0.272	4.03	64.6	15.5	1.34	15.9	0.02	0.09	0.14	84	212
99		10.22	10.21	33.720	25.917	209.7	0.305	3.60	56.8	20.0	1.57	19.6	0.01	0.03	0.07	99	211
100	ISL	10.18	10.17	33.728	25.931	208.5	0.307	3.57	56.3	20.3	1.59	19.8	0.01	0.03	0.07	100	
118		9.64	9.63	33.857	26.122	190.6	0.343	3.07	47.8	26.0	1.84	23.4	0.00	0.01	0.05	119	210
125	ISL	9.52	9.51	33.891	26.169	186.3	0.356	2.93	45.5	27.5	1.91	24.2	0.00	0.01	0.05	126	
139		9.29	9.27	33.940	26.245	179.3	0.381	2.76	42.7	29.8	2.00	25.3	0.01	0.01	0.05	140	209
150	ISL	9.00	8.98	33.962	26.308	173.4	0.401	2.87	44.1	30.8	2.00	25.6	0.01	0.01	0.05	151	
168		8.55	8.53	33.991	26.401	164.8	0.431	3.02	46.0	32.7	1.99	26.2	0.01	0.01	0.05	169	208
198		8.20	8.18	34.068	26.515	154.4	0.479	2.27	34.3	39.8	2.28	29.5	0.00	0.00	0.03	199	207
200	ISL	8.20	8.18	34.073	26.519	154.1	0.482	2.23	33.7	40.1	2.29	29.6	0.00			201	
228		8.15	8.13	34.129	26.571	149.7	0.525	1.76	26.6	44.0	2.46	31.0	0.00			229	206
250	ISL	7.89	7.86	34.144	26.622	145.2	0.557	1.60	24.0	47.3	2.54	32.0	0.00			251	
267		7.64	7.61	34.147	26.661	141.7	0.582	1.53	22.8	49.9	2.59	32.8	0.00			269	205
300	ISL	7.25	7.22	34.153	26.721	136.3	0.627	1.37	20.3	54.6	2.69	34.3	0.00			302	
318		7.06	7.03	34.156	26.750	133.7	0.652	1.28	18.8	57.1	2.74	35.1	0.00			320	204
377		6.61	6.58	34.191	26.839	125.9	0.728	0.90	13.1	65.5	2.93	37.4	0.00			379	203
400	ISL	6.42	6.38	34.198	26.870	123.1	0.757	0.82	11.9	68.6	2.99	38.2	0.00			403	
437		6.13	6.09	34.208	26.915	119.1	0.802	0.71	10.2	73.3	3.06	39.2	0.00			440	202
500	ISL	5.80	5.76	34.242	26.984	113.1	0.875	0.51	7.3	80.1	3.15	40.4	0.00			503	
520		5.70	5.66	34.253	27.005	111.3	0.897	0.45	6.4	82.3	3.18	40.8	0.00			524	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 49.1 N	121 51.3 W	25/09/98	1824 UTC	3624 m	320 14 kn	320 03 07	2	1016.6 mb	18.1 C	15.4 C	18m	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	17.82	17.82	33.433	24.117	378.9	0.000	5.56	102.3	1.7	0.26	0.1	0.00	0.27	0.07	0	
1		17.82	17.82	33.434	24.118	378.8	0.004									1	223
1	A	17.82	17.82	33.433	24.117	378.9	0.004	5.56	102.3	1.7	0.26	0.1	0.00	0.27	0.07	1	222
1		17.82	17.82	33.433	24.117	378.9	0.004									1	224
10	ISL	17.82	17.82	33.433	24.117	379.2	0.038	5.58	102.7	1.7	0.26	0.1	0.00	0.28	0.05	10	
13	A	17.82	17.82	33.433	24.118	379.3	0.049	5.59	102.9	1.7	0.26	0.1	0.00	0.29	0.05	13	221
20	ISL	17.81	17.81	33.433	24.120	379.3	0.076	5.57	102.5	1.7	0.26	0.1	0.00	0.30	0.07	20	
24	A	17.80	17.80	33.433	24.123	379.2	0.091	5.56	102.3	1.7	0.26	0.1	0.00	0.31	0.08	24	220
30	ISL	17.72	17.71	33.430	24.140	377.7	0.114	5.56	102.1	1.7	0.26	0.1	0.00	0.43	0.14	30	
37	A	17.62	17.61	33.426	24.161	375.9	0.140	5.56	101.9	1.8	0.27	0.1	0.00	0.56	0.22	37	219
48	A	14.48	14.47	33.459	24.898	305.9	0.178	5.34	92.0	5.5	0.65	4.6	0.19	1.65	0.86	48	218
50	ISL	13.95	13.94	33.482	25.027	293.7	0.184	5.12	87.3	7.0	0.77	6.4	0.17	1.52	0.84	50	
58		12.08	12.07	33.561	25.458	252.6	0.205	4.23	69.4	13.4	1.23	13.9	0.07	0.71	0.75	58	217
67		10.60	10.59	33.523	25.698	229.9	0.227									67	216
67	A	10.59	10.58	33.529	25.704	229.3	0.227	3.92	62.3	17.9	1.50	18.3	0.02	0.13	0.20	67	215
75		10.42	10.41	33.586	25.778	222.4	0.245	3.69	58.4	19.3	1.57	19.5	0.02	0.10	0.13	75	214
84		10.23	10.22	33.656	25.866	214.3	0.265	3.52	55.5	20.6	1.64	20.5	0.02	0.05	0.12	84	213
94		9.94	9.93	33.774	26.007	201.1	0.286	3.22	50.5	23.4	1.76	22.3	0.01	0.03	0.07	94	212
100	ISL	9.77	9.76	33.816	26.068	195.3	0.298	3.10	48.4	24.7	1.82	23.2	0.01	0.02	0.07	100	
109		9.52	9.51	33.859	26.143	188.4	0.315	2.99	46.5	26.4	1.88	24.2	0.01	0.01	0.06	110	211
124		9.06	9.05	33.926	26.270	176.5	0.342	2.95	45.4	29.3	1.95	25.4	0.01	0.01	0.06	125	210
125	ISL	9.04	9.03	33.929	26.276	176.0	0.344	2.97	45.7	29.4	1.95	25.4	0.01	0.01	0.06	126	
144		8.65	8.63	33.965	26.365	167.8	0.377	3.22	49.1	30.6	1.91	25.4	0.01	0.00	0.05	145	209
150	ISL	8.55	8.53	33.980	26.392	165.3	0.387	3.13	47.6	31.8	1.95	25.9	0.01	0.00	0.05	151	
171		8.26	8.24	34.026	26.473	158.0	0.421	2.70	40.8	36.5	2.13	28.1	0.01	0.00	0.05	172	208
200	ISL	7.95	7.93	34.039	26.530	153.0	0.466	2.60	39.0	39.2	2.20	29.1	0.02	0.00	0.04	201	
201		7.94	7.92	34.039	26.531	152.9	0.467	2.60	39.0	39.3	2.20	29.1	0.02	0.00	0.04	202	207
228		7.64	7.62	34.061	26.593	147.4	0.508	2.25	33.6	43.8	2.36	30.9	0.02			229	206
250	ISL	7.47	7.45	34.095	26.644	142.8	0.540	1.89	28.1	47.9	2.50	32.4	0.01			251	
266		7.36	7.33	34.120	26.679	139.7	0.562	1.64	24.3	51.0	2.59	33.4	0.01			268	205
300	ISL	7.03	7.00	34.153	26.751	133.2	0.609	1.27	18.7	57.5	2.75	35.3	0.01			302	
317		6.85	6.82	34.160	26.782	130.5	0.631	1.15	16.8	60.5	2.82	36.2	0.01			319	204
378		6.09	6.06	34.126	26.855	123.9	0.709	1.00	14.4	69.0	2.94	38.6	0.01			380	203
400	ISL	6.00	5.97	34.145	26.882	121.6	0.736	0.87	12.5	71.7	2.99	39.2	0.01			403	
436		5.89	5.85	34.184	26.927	117.7	0.779	0.66	9.5	76.1	3.08	40.1	0.01			439	202
500	ISL	5.33	5.29	34.201	27.008	110.3	0.852	0.48	6.8	85.9	3.19	41.9	0.01			503	
515		5.20	5.16	34.206	27.028	108.5	0.868	0.44	6.2	88.2	3.22	42.3	0.01			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 28.8 N	122 31.6 W	25/09/98	2354 UTC	3966 m	300 12 kn	300 02 05	1	1015.5 mb	17.6 C	15.5 C	30m	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	17.78	17.78	33.108	23.878	401.7	0.000	5.58	102.4	2.0	0.30	0.1	0.00	0.11	0.02	0	
1	17.78	17.78	33.108	23.878	401.7	0.004	5.58	102.4	2.0	0.30	0.1	0.00	0.11	0.02	1	220
1	17.78	17.78	33.106	23.876	401.9	0.004									1	221
1	17.77	17.77	33.109	23.881	401.4	0.004									1	222
10 ISL	17.68	17.68	33.105	23.900	399.9	0.040	5.59	102.4	2.0	0.30	0.1	0.00	0.10	0.02	10	
15	17.58	17.58	33.103	23.923	397.9	0.060	5.59	102.2	2.0	0.30	0.1	0.00	0.10	0.02	15	219
20 ISL	17.53	17.53	33.108	23.939	396.6	0.080	5.60	102.3	2.0	0.30	0.1	0.00	0.12	0.03	20	
30	17.16	17.16	33.112	24.030	388.2	0.119	5.63	102.1	2.1	0.31	0.1	0.00	0.18	0.05	30	218
45	15.41	15.40	33.092	24.414	352.0	0.175	5.90	103.4	2.1	0.32	0.1	0.00	0.30	0.18	45	217
50 ISL	14.71	14.70	33.073	24.551	339.0	0.192	5.92	102.2	2.2	0.33	0.1	0.00	0.38	0.31	50	
55	14.04	14.03	33.055	24.678	326.9	0.209	5.94	101.2	2.2	0.34	0.1	0.01	0.46	0.43	55	216
65	13.13	13.12	33.022	24.838	312.0	0.240	5.68	94.9	3.4	0.49	1.9	0.27	0.63	0.54	65	215
74	12.48	12.47	33.078	25.008	295.9	0.268	5.36	88.4	5.1	0.67	5.1	0.06	0.12	0.13	74	214
75 ISL	12.46	12.45	33.084	25.016	295.1	0.271	5.34	88.0	5.2	0.68	5.3	0.06	0.12	0.13	75	
84	12.25	12.24	33.167	25.121	285.4	0.297	5.10	83.7	6.6	0.80	7.3	0.04	0.09	0.11	84	213
95	11.42	11.41	33.387	25.447	254.6	0.327	4.43	71.6	12.0	1.15	13.1	0.02	0.04	0.08	95	212
100 ISL	11.10	11.09	33.497	25.590	241.0	0.339	4.05	65.0	14.9	1.32	15.7	0.01	0.05	0.09	100	
109	10.59	10.58	33.677	25.820	219.2	0.360	3.39	53.9	19.9	1.60	19.9	0.01	0.07	0.10	109	211
124	9.91	9.90	33.855	26.076	195.2	0.391	2.71	42.5	26.1	1.91	24.2	0.01	0.01	0.05	125	210
125 ISL	9.89	9.88	33.863	26.085	194.3	0.393	2.68	42.0	26.4	1.92	24.4	0.01	0.01	0.05	126	
144	9.65	9.63	33.977	26.215	182.4	0.429	2.24	34.9	30.3	2.10	26.4	0.01	0.01	0.04	145	209
150 ISL	9.58	9.56	34.001	26.245	179.6	0.439	2.14	33.3	31.3	2.14	26.9	0.01	0.01	0.04	151	
169	9.39	9.37	34.054	26.318	173.0	0.473	1.91	29.6	34.0	2.25	28.0	0.01	0.00	0.04	170	208
199	9.09	9.07	34.105	26.407	165.2	0.524	1.81	27.9	36.6	2.32	29.1	0.01	0.00	0.04	200	207
200 ISL	9.08	9.06	34.106	26.409	164.9	0.525	1.80	27.7	36.7	2.32	29.1	0.01			201	
229	8.86	8.84	34.144	26.474	159.3	0.572	1.65	25.3	39.2	2.41	29.8	0.01			230	206
250 ISL	8.72	8.69	34.165	26.513	156.0	0.605	1.57	24.0	40.9	2.45	30.3	0.01			251	
270	8.58	8.55	34.180	26.547	153.1	0.636	1.50	22.9	42.6	2.49	30.8	0.01			272	205
300 ISL	8.34	8.31	34.195	26.595	148.9	0.682	1.39	21.1	45.3	2.56	31.6	0.01			302	
319	8.17	8.14	34.201	26.626	146.2	0.710	1.32	19.9	47.3	2.61	32.2	0.01			321	204
378	7.49	7.45	34.219	26.740	136.0	0.793	1.04	15.5	55.7	2.78	34.5	0.01			380	203
400 ISL	7.17	7.13	34.207	26.776	132.7	0.822	0.98	14.5	59.2	2.83	35.5	0.01			403	
437	6.67	6.63	34.189	26.830	127.7	0.871	0.89	13.0	65.0	2.91	37.0	0.00			440	202
500 ISL	6.30	6.25	34.223	26.906	121.0	0.949	0.66	9.5	72.0	3.04	38.6	0.01			503	
522	6.17	6.12	34.236	26.933	118.6	0.975	0.58	8.4	74.4	3.08	39.2	0.01			526	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 8.9 N	123 13.4 W	26/09/98	0536 UTC	4213 m	330 12 kn			1015.4 mb	17.3 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	17.19	17.19	33.098	24.011	389.0	0.000	5.64	102.4	2.0	0.31	0.0	0.00	0.13	0.04	0	
1	17.19	17.19	33.098	24.011	389.0	0.004	5.64	102.4	2.0	0.31	0.0	0.00	0.13	0.04	1	220
10 ISL	17.14	17.14	33.100	24.025	388.0	0.039	5.65	102.4	1.9	0.31	0.0	0.00	0.14	0.04	10	
15	17.11	17.11	33.101	24.033	387.4	0.058	5.65	102.4	1.9	0.31	0.0	0.00	0.14	0.04	15	219
20 ISL	17.02	17.02	33.114	24.064	384.6	0.078	5.66	102.4	1.9	0.31	0.0	0.00	0.17	0.05	20	
30	16.77	16.77	33.145	24.147	377.0	0.116	5.69	102.4	1.9	0.30	0.0	0.00	0.24	0.09	30	218
45	16.19	16.18	33.180	24.307	362.2	0.171	5.81	103.4	1.9	0.32	0.0	0.00	0.33	0.16	45	217
50 ISL	16.10	16.09	33.214	24.354	357.9	0.189	5.80	103.1	1.9	0.32	0.0	0.00	0.37	0.20	50	
54	15.95	15.94	33.229	24.400	353.6	0.203	5.80	102.8	1.9	0.32	0.0	0.00	0.39	0.24	54	216
65	14.66	14.65	33.116	24.596	335.2	0.241	5.94	102.5	2.1	0.31	0.0	0.00	0.40	0.35	65	215
75	13.82	13.81	33.097	24.757	320.0	0.274	5.80	98.4	2.5	0.38	0.5	0.19	0.29	0.32	75	214
84	13.37	13.36	33.208	24.934	303.3	0.302	5.54	93.1	3.6	0.48	2.2	0.07	0.18	0.28	84	213
95	13.25	13.24	33.379	25.091	288.7	0.335	5.39	90.5	4.6	0.52	3.1	0.10	0.15	0.24	95	212
100 ISL	12.66	12.65	33.356	25.189	279.4	0.349	5.14	85.2	6.5	0.69	5.8	0.07	0.12	0.21	100	
109	11.47	11.46	33.311	25.379	261.4	0.373	4.64	75.0	10.5	1.05	11.3	0.01	0.07	0.16	109	211
125	10.78	10.76	33.520	25.665	234.4	0.413	4.18	66.6	14.4	1.31	15.7	0.00	0.05	0.10	126	210
145	10.02	10.00	33.661	25.906	211.8	0.457	3.79	59.5	19.4	1.55	19.5	0.00	0.02	0.06	146	209
150 ISL	9.83	9.81	33.696	25.965	206.2	0.468	3.68	57.5	20.8	1.61	20.5	0.00	0.01	0.05	151	
171	9.18	9.16	33.829	26.176	186.5	0.509	3.26	50.3	26.1	1.82	23.9	0.00	0.00	0.03	172	208
199	8.80	8.78	33.935	26.319	173.3	0.559	2.98	45.6	30.5	1.97	25.9	0.00	0.00	0.03	200	207
200 ISL	8.79	8.77	33.938	26.323	172.9	0.561	2.97	45.4	30.7	1.98	26.0	0.00			201	
228	8.47	8.45	34.011	26.430	163.2	0.608	2.60	39.5	35.1	2.13	28.0	0.00			229	206
250 ISL	8.27	8.24	34.054	26.495	157.4	0.643	2.32	35.1	38.2	2.24	29.2	0.00			251	
269	8.07	8.04	34.073	26.540	153.4	0.673	2.18	32.8	40.6	2.31	30.0	0.00			270	205
300 ISL	7.45	7.42	34.038	26.602	147.6	0.720	2.43	36.1	44.0	2.30	30.6	0.00			302	
319	7.06	7.03	34.014	26.638	144.2	0.747	2.57	37.8	46.4	2.30	31.1	0.00			321	204
378	6.54	6.51	34.068	26.751	134.1	0.829	1.66	24.1	57.9	2.67	35.4	0.00			380	203
400 ISL	6.26	6.22	34.071	26.790	130.5	0.859	1.47	21.2	62.3	2.76	36.7	0.00			402	
438	5.79	5.75	34.076	26.854	124.5	0.907	1.22	17.4	69.6	2.89	38.7	0.00			441	202
500 ISL	5.45	5.41	34.138	26.944	116.4	0.982	0.79	11.2	79.8	3.07	40.8	0.00			503	
521	5.33	5.29	34.160	26.976	113.5	1.006	0.64	9.0	83.3	3.13	41.5	0.00			524	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 49.0 N	123 54.1 W	26/09/98	1106 UTC	4371 m	280 11 kn			1014.7 mb	17.5 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	18.48	18.48	33.253	23.818	407.4	0.000	5.49	102.2	1.8	0.24	0.0	0.00	0.12	0.03	0	
1	18.48	18.48	33.253	23.818	407.5	0.004	5.49	102.2	1.8	0.24	0.0	0.00	0.12	0.03	1	220
10 ISL	18.48	18.48	33.252	23.817	407.8	0.041	5.47	101.9	1.7	0.24	0.0	0.00	0.13	0.03	10	
15	18.48	18.48	33.252	23.818	408.0	0.061	5.46	101.7	1.7	0.24	0.0	0.00	0.13	0.03	15	219
20 ISL	18.48	18.48	33.252	23.818	408.1	0.082	5.47	101.8	1.7	0.24	0.0	0.00	0.13	0.03	20	
30	18.48	18.47	33.252	23.818	408.5	0.122	5.48	102.0	1.8	0.24	0.0	0.00	0.13	0.02	30	218
43	17.54	17.53	33.080	23.916	399.5	0.175	5.63	102.8	1.8	0.30	0.0	0.00	0.21	0.06	43	217
50 ISL	17.00	16.99	33.093	24.054	386.6	0.202	5.75	103.9	1.8	0.28	0.0	0.00	0.24	0.07	50	
60	16.17	16.16	33.167	24.303	363.1	0.240	5.90	105.0	1.8	0.25	0.0	0.00	0.28	0.10	60	216
74	14.90	14.89	33.257	24.653	330.0	0.288	5.96	103.4	2.1	0.26	0.1	0.00	0.33	0.25	74	215
75 ISL	14.85	14.84	33.265	24.670	328.4	0.292	5.96	103.3	2.1	0.26	0.1	0.00	0.33	0.26	75	
85	14.42	14.41	33.357	24.833	313.2	0.324	5.88	101.1	2.4	0.26	0.1	0.00	0.30	0.37	85	214
93	14.12	14.11	33.444	24.963	300.9	0.348	5.80	99.2	2.8	0.28	0.1	0.03	0.23	0.38	93	213
100 ISL	13.98	13.97	33.495	25.032	294.6	0.369	5.69	97.0	3.1	0.30	0.5	0.18	0.20	0.33	100	
105	13.84	13.83	33.523	25.083	289.9	0.384	5.58	94.9	3.5	0.34	0.8	0.25	0.18	0.29	105	212
115	13.20	13.18	33.577	25.255	273.7	0.412	5.26	88.3	5.4	0.54	4.3	0.06	0.13	0.22	115	211
124	12.50	12.48	33.586	25.399	260.1	0.436	4.99	82.6	7.5	0.73	7.3	0.02	0.12	0.17	125	210
125 ISL	12.39	12.37	33.589	25.423	257.8	0.439	4.95	81.7	7.9	0.76	7.7	0.02	0.12	0.17	126	
139	10.93	10.91	33.651	25.741	227.6	0.473	4.49	71.9	13.0	1.13	13.6	0.01	0.07	0.13	140	209
150 ISL	10.36	10.34	33.687	25.869	215.5	0.497	4.29	67.8	15.6	1.28	16.0	0.00	0.05	0.09	151	
163	10.00	9.98	33.725	25.960	207.0	0.524	4.16	65.3	17.7	1.38	17.6	0.00	0.03	0.05	164	208
193	9.41	9.39	33.859	26.163	188.3	0.584	4.03	62.5	21.7	1.52	20.1	0.00	0.01	0.02	194	207
200 ISL	9.25	9.23	33.890	26.213	183.6	0.597	3.97	61.3	23.1	1.56	20.8	0.00			201	
228	8.64	8.62	33.987	26.385	167.5	0.646	3.68	56.1	29.0	1.74	23.7	0.00			229	206
250 ISL	8.28	8.25	34.011	26.459	160.7	0.682	3.35	50.7	33.0	1.88	25.7	0.00			251	
270	7.99	7.96	34.014	26.505	156.6	0.714	3.07	46.1	36.5	2.00	27.3	0.00			271	205
300 ISL	7.50	7.47	34.015	26.577	150.0	0.760	2.86	42.5	41.4	2.14	29.2	0.00			302	
318	7.22	7.19	34.015	26.617	146.4	0.786	2.74	40.4	44.5	2.23	30.3	0.00			320	204
373	6.59	6.56	34.041	26.723	136.7	0.864	1.89	27.5	55.6	2.56	34.4	0.00			375	203
400 ISL	6.34	6.30	34.060	26.771	132.3	0.901	1.55	22.4	60.7	2.70	36.2	0.00			402	
431	6.10	6.06	34.086	26.823	127.7	0.941	1.22	17.5	66.3	2.83	37.9	0.00			434	202
500 ISL	5.67	5.63	34.152	26.929	118.1	1.026	0.73	10.4	77.4	3.03	40.2	0.00			503	
519	5.55	5.51	34.171	26.959	115.4	1.048	0.60	8.5	80.5	3.09	40.8	0.00			522	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 16.4 N	120 1.1 W	24/09/98	2108 UTC	572 m	270 10 kn	270 01 04	1	1015.2 mb	18.8 C	16.2 C	16m	2/8 CB

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	18.90	18.90	33.392	23.819	407.3	0.000	5.73	107.6	1.3	0.22	0.1	0.00	0.96	0.05	0	
1 A	18.90	18.90	33.392	23.819	407.3	0.004	5.73	107.6	1.3	0.22	0.1	0.00	0.96	0.05	1	224
9	18.44	18.44	33.383	23.927	397.3	0.036	5.79	107.8	1.2	0.22	0.1	0.00	1.02	0.05	9	223
10 ISL	18.29	18.29	33.379	23.961	394.1	0.040	5.81	107.9	1.3	0.22	0.1	0.00	0.98	0.06	10	
20	16.61	16.61	33.358	24.347	357.6	0.078	6.00	107.8	2.7	0.27	0.1	0.00	0.63	0.11	20	222
29	15.39	15.39	33.400	24.655	328.5	0.109	5.85	102.6	3.4	0.34	0.1	0.00	0.84	0.31	29	221
30 ISL	15.30	15.30	33.402	24.677	326.5	0.112	5.83	102.1	3.4	0.35	0.3	0.01	0.85	0.33	30	
40	14.33	14.32	33.432	24.908	304.7	0.144	5.41	92.9	4.9	0.52	2.0	0.14	0.94	0.46	40	220
50	12.89	12.88	33.518	25.269	270.6	0.172	4.52	75.4	9.6	0.94	9.2	0.09	0.27	0.30	50	219
59	11.83	11.82	33.612	25.545	244.4	0.195	3.86	63.0	14.2	1.30	14.5	0.03	0.08	0.21	59	218
70	11.51	11.50	33.646	25.631	236.5	0.222	3.72	60.3	15.8	1.38	15.7	0.03	0.06	0.16	70	217
75 ISL	11.45	11.44	33.653	25.647	235.0	0.234	3.69	59.7	16.0	1.39	16.0	0.03	0.06	0.14	75	
85	11.34	11.33	33.669	25.680	232.2	0.257	3.61	58.3	16.4	1.43	16.6	0.02	0.05	0.10	85	216
99	10.99	10.98	33.733	25.793	221.7	0.289	3.26	52.3	19.4	1.60	19.0	0.01	0.02	0.07	99	215
100 ISL	10.96	10.95	33.739	25.803	220.8	0.291	3.24	51.9	19.6	1.61	19.2	0.01	0.02	0.07	100	
120	10.31	10.30	33.856	26.009	201.6	0.333	2.85	45.1	24.0	1.84	22.3	0.01	0.01	0.05	121	214
125 ISL	10.16	10.15	33.874	26.048	197.9	0.343	2.77	43.7	25.0	1.88	23.0	0.01	0.01	0.05	126	
139	9.79	9.77	33.915	26.143	189.1	0.370	2.59	40.5	27.6	1.98	24.5	0.01	0.01	0.06	140	213
150 ISL	9.62	9.60	33.947	26.196	184.2	0.391	2.46	38.3	29.1	2.04	25.3	0.01	0.01	0.06	151	
169	9.44	9.42	34.000	26.268	177.8	0.425	2.25	34.9	31.4	2.14	26.5	0.01	0.01	0.05	170	212
198	9.18	9.16	34.077	26.370	168.6	0.475	1.86	28.7	35.5	2.30	28.4	0.01	0.01	0.05	199	211
200 ISL	9.16	9.14	34.082	26.378	168.0	0.479	1.84	28.4	35.8	2.31	28.5	0.01			201	
228	8.93	8.91	34.136	26.457	160.9	0.525	1.53	23.5	39.8	2.45	29.8	0.01			229	210
250 ISL	8.69	8.66	34.159	26.513	155.9	0.560	1.35	20.6	43.4	2.54	30.8	0.01			251	
268	8.48	8.45	34.170	26.554	152.3	0.587	1.23	18.7	46.4	2.61	31.5	0.01			270	209
300 ISL	8.13	8.10	34.180	26.615	146.9	0.635	1.10	16.6	50.9	2.70	32.5	0.01			302	
318	7.94	7.91	34.182	26.645	144.2	0.662	1.05	15.8	53.2	2.75	33.0	0.01			320	208
377	7.39	7.35	34.189	26.731	136.7	0.744	0.85	12.6	60.9	2.89	34.3	0.01			379	207
400 ISL	7.16	7.12	34.194	26.767	133.5	0.776	0.73	10.8	65.3	2.97	34.5	0.01			403	
437	6.80	6.76	34.205	26.826	128.2	0.824	0.52	7.6	73.0	3.10	34.8	0.01			440	206
500 ISL	6.34	6.29	34.223	26.901	121.6	0.903	0.20	2.9	86.2	3.32	33.8	0.01			503	
513	6.28	6.23	34.225	26.911	120.8	0.918	0.15	2.2	88.2	3.36	33.6	0.01			517	205
533	6.24	6.19	34.224	26.915	120.6	0.943	0.10	1.4	89.6	3.39	33.5	0.01			537	204
560	6.20	6.15	34.231	26.926	119.9	0.975	0.02	0.3	97.6	3.72	30.3	0.13			564	203
565	6.20	6.15	34.225	26.921	120.4	0.981	0.02	0.3	97.7	3.72	30.3	0.13			569	202
570	6.20	6.15	34.231	26.926	120.0	0.987	0.02	0.3	98.0	3.74	30.1	0.14			574	201

A) SANTA BARBARA BASIN STATION.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 13.5 N	119 24.9 W	24/09/98	1421 UTC	35 m	080 09 kn	250 02 07	1	1014.2 mb	16.2 C	14.9 C		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	19.28	19.28	33.400	23.729	415.9	0.000	5.79	109.6	0.6	0.14	0.1	0.00	0.68	0.16	0	
1		19.28	19.28	33.399	23.728	416.0	0.004									1	206
1		19.28	19.28	33.400	23.729	416.0	0.004	5.79	109.6	0.6	0.14	0.1	0.00	0.68	0.16	1	205
5		19.29	19.29	33.397	23.724	416.5	0.021	5.83	110.3	0.6	0.13	0.1	0.00	0.68	0.15	5	204
10		17.45	17.45	33.356	24.147	376.3	0.041	6.02	110.0	1.6	0.22	0.1	0.00	1.57	0.26	10	203
20		15.65	15.65	33.361	24.567	336.6	0.076	5.78	101.9	3.2	0.34	0.2	0.02	0.88	0.26	20	202
30		14.79	14.79	33.388	24.776	316.9	0.109	5.49	95.2	4.6	0.50	0.8	0.08	0.56	0.34	30	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 10.7 N	119 30.6 W	24/09/98	1755 UTC	105 m	120 02 kn	270 02 06	1	1015.4 mb	19.1 C	15.9 C	18m	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	19.17	19.17	33.396	23.754	413.5	0.000	5.77	108.9	1.2	0.17	0.1	0.00	1.38	0.12	0	
1		19.18	19.18	33.402	23.756	413.4	0.004									1	215
1	A	19.17	19.17	33.396	23.754	413.6	0.004	5.77	108.9	1.2	0.17	0.1	0.00	1.38	0.12	1	213
1		19.17	19.17	33.397	23.755	413.5	0.004									1	214
8		19.12	19.12	33.394	23.765	412.7	0.033	5.75	108.5	1.3	0.18	0.1	0.00	1.31	0.17	8	212
10	ISL	19.03	19.03	33.391	23.786	410.8	0.041	5.78	108.8	1.3	0.18	0.1	0.00	1.24	0.18	10	
14	A	18.76	18.76	33.384	23.849	405.0	0.058	5.83	109.2	1.3	0.19	0.1	0.00	1.12	0.22	14	211
20	ISL	18.19	18.19	33.378	23.986	392.1	0.082	5.79	107.3	1.7	0.23	0.3	0.01	1.41	0.35	20	
25	A	17.32	17.32	33.375	24.194	372.4	0.101	5.75	104.8	2.3	0.28	0.4	0.02	1.51	0.41	25	210
30	ISL	15.73	15.73	33.384	24.567	336.9	0.118	5.79	102.3	3.1	0.33	0.4	0.03	0.84	0.32	30	
32		15.08	15.08	33.400	24.723	322.1	0.125	5.80	101.1	3.5	0.37	0.4	0.03	0.57	0.28	32	209
37	A	14.04	14.03	33.459	24.990	296.8	0.140	5.18	88.5	5.1	0.56	2.4	0.22	0.39	0.33	37	208
48	A	13.41	13.40	33.482	25.137	283.1	0.172	4.92	82.9	6.9	0.74	6.0	0.11	0.28	0.41	48	206
48		13.41	13.40	33.479	25.135	283.3	0.172									48	207
50	ISL	13.32	13.31	33.487	25.159	281.0	0.178	4.86	81.8	7.2	0.77	6.5	0.10	0.27	0.41	50	
57		12.99	12.98	33.507	25.240	273.4	0.197	4.66	77.9	8.5	0.87	8.3	0.06	0.22	0.39	57	205
67	A	12.39	12.38	33.547	25.389	259.5	0.224	4.38	72.3	10.6	1.03	10.9	0.03	0.16	0.26	67	204
75		11.61	11.60	33.625	25.596	239.9	0.244	3.91	63.5	14.5	1.28	14.6	0.02	0.08	0.16	75	203
84		11.37	11.36	33.659	25.667	233.4	0.265	3.69	59.6	16.3	1.40	16.3	0.02	0.05	0.12	84	202
100		11.10	11.09	33.685	25.736	227.1	0.302	3.63	58.3	17.3	1.46	17.4	0.01	0.04	0.10	100	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 52.6 N	120 8.1 W	24/09/98	0747 UTC	102 m	300 16 kn			1014.6 mb	17.0 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	18.17	18.17	33.413	24.016	388.5	0.000	5.79	107.3	0.7	0.22	0.1	0.01	1.96	0.29	0	210
10	17.98	17.98	33.417	24.066	384.1	0.039	5.75	106.2	1.1	0.23	0.2	0.02	1.91	0.28	10	209
20	17.24	17.24	33.406	24.236	368.2	0.076	5.71	103.9	2.0	0.30	0.6	0.03	2.27	0.53	20	208
30	16.48	16.48	33.389	24.401	352.8	0.112	5.73	102.7	2.2	0.34	0.6	0.03	2.46	0.49	30	207
39	15.50	15.49	33.420	24.646	329.6	0.143	5.44	95.7	4.1	0.48	2.4	0.08	1.63	0.57	39	206
50	15.14	15.13	33.440	24.741	320.9	0.179	5.22	91.1	5.4	0.57	3.6	0.11	1.31	0.55	50	205
60	14.41	14.40	33.461	24.915	304.7	0.210	5.03	86.5	6.7	0.68	5.1	0.13	1.03	0.45	60	204
69	13.67	13.66	33.464	25.071	290.0	0.237	4.92	83.4	7.3	0.74	5.8	0.17	0.59	0.42	69	203
75 ISL	12.88	12.87	33.521	25.274	270.8	0.254	4.56	76.0	10.1	0.93	9.0	0.14	0.36	0.35	75	
80	12.24	12.23	33.580	25.443	254.7	0.267	4.23	69.6	12.7	1.11	12.0	0.11	0.23	0.28	80	202
92	11.53	11.52	33.649	25.630	237.1	0.296	3.80	61.6	16.3	1.36	15.5	0.09	0.17	0.22	92	201

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 44.8 N	120 24.8 W	24/09/98	0416 UTC	1006 m	310 11 kn			1015.1 mb	17.8 C	14.1 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	18.21	18.21	33.366	23.971	392.8	0.000	5.61	104.0	2.0	0.24	0.1	0.00	0.31	0.02	0	
1		18.21	18.21	33.366	23.971	392.9	0.004	5.61	104.0	2.0	0.24	0.1	0.00	0.31	0.02	1	220
10		18.20	18.20	33.361	23.970	393.3	0.039	5.62	104.2	2.0	0.24	0.1	0.00	0.35	0.02	10	219
19		18.00	18.00	33.358	24.017	389.1	0.075	5.63	103.9	1.9	0.24	0.1	0.00	0.47	0.02	19	218
20	ISL	17.99	17.99	33.358	24.019	388.9	0.078	5.63	103.9	1.9	0.24	0.1	0.00	0.49	0.02	20	
30		17.91	17.90	33.353	24.035	387.7	0.117	5.65	104.1	1.9	0.24	0.1	0.00	0.59	0.01	30	217
40		15.69	15.68	33.296	24.509	342.8	0.154	5.87	103.5	2.6	0.31	0.1	0.00	0.54	0.25	40	216
50		14.39	14.38	33.320	24.810	314.4	0.187	5.80	99.7	3.3	0.41	0.7	0.04	0.81	0.50	50	215
60		13.37	13.36	33.379	25.066	290.2	0.217	5.15	86.7	6.1	0.69	5.2	0.10	0.51	0.49	60	214
69		12.80	12.79	33.464	25.245	273.3	0.242	4.76	79.2	8.5	0.88	8.5	0.06	0.25	0.34	69	213
75	ISL	12.29	12.28	33.513	25.382	260.4	0.258	4.49	73.9	10.6	1.03	10.9	0.04	0.17	0.26	75	
85		11.46	11.45	33.587	25.594	240.3	0.283	4.13	66.9	14.1	1.25	14.5	0.02	0.11	0.17	85	212
100		10.72	10.71	33.679	25.799	221.1	0.318	3.97	63.3	17.6	1.45	17.7	0.01	0.05	0.08	100	211
119		9.97	9.96	33.768	25.998	202.5	0.358	3.62	56.8	21.9	1.65	20.8	0.01	0.01	0.05	120	210
125	ISL	9.84	9.83	33.783	26.031	199.4	0.370	3.68	57.6	22.6	1.68	21.3	0.01	0.01	0.05	126	
139		9.61	9.59	33.819	26.098	193.4	0.398	3.80	59.2	24.3	1.76	22.4	0.01	0.01	0.04	140	209
150	ISL	9.44	9.42	33.883	26.176	186.1	0.419	3.50	54.3	26.8	1.88	23.9	0.01	0.01	0.04	151	
170		9.11	9.09	33.999	26.320	172.8	0.454	2.86	44.1	31.8	2.09	26.5	0.00	0.00	0.04	171	208
198		8.53	8.51	34.056 D	26.456	160.2	0.501	2.78	42.3	36.5	2.22	28.5	0.01	0.01	0.04	199	207
200	ISL	8.50	8.48	34.057	26.461	159.7	0.504	2.76	42.0	36.7	2.22	28.5	0.01			201	
228		8.16	8.14	34.060	26.516	155.0	0.548	2.43	36.7	38.8	2.23	29.0	0.00			229	206
250	ISL	7.84	7.82	34.066	26.568	150.3	0.582	2.24	33.6	42.2	2.31	30.2	0.00			251	
269		7.57	7.54	34.075	26.614	146.0	0.610	2.09	31.1	45.7	2.41	31.5	0.00			271	205
300	ISL	7.21	7.18	34.099	26.684	139.7	0.654	1.74	25.7	51.3	2.57	33.4	0.00			302	
318		7.04	7.01	34.117	26.722	136.3	0.679	1.53	22.5	54.6	2.66	34.4	0.00			320	204
379		6.62	6.59	34.196	26.842	125.6	0.759	0.94	13.7	64.7	2.91	37.2	0.00			381	203
400	ISL	6.54	6.50	34.220	26.871	123.1	0.785	0.81	11.8	67.4	2.97	37.7	0.00			403	
436		6.41	6.37	34.252	26.914	119.5	0.829	0.59	8.6	71.4	3.06	38.5	0.00			439	202
500	ISL	5.94	5.90	34.251	26.974	114.2	0.904			78.3	3.14	40.0	0.00			503	
519		5.80	5.76	34.251	26.992	112.7	0.925	0.61 U	8.7U	80.3	3.16	40.5	0.00			523	201

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 34.9 N	120 45.2 W	24/09/98	0029 UTC	1314 m	250 05 kn	250 02 06	0	1016.0 mb	18.0 C	15.6 C	21m	0/8

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	18.49	18.49	33.418	23.941	395.6	0.000	5.56	103.7	1.7	0.27	0.0	0.01			0	
1		18.49	18.49	33.418	23.941	395.7	0.004	5.56	103.7	1.7	0.27	0.0	0.01			1	222
1		18.50	18.50	33.417	23.938	396.0	0.004			1.9	0.27	0.0	0.01			1	223
10		17.82	17.82	33.413	24.102	380.6	0.039	5.57	102.5	1.8	0.28	0.0	0.01	0.22	0.06	10	221
20		17.77	17.77	33.414	24.115	379.7	0.077									20	220
20		17.77	17.77	33.415	24.116	379.7	0.077	5.57	102.4	1.8	0.26	0.0	0.01	0.27	0.07	20	219
30		16.88	16.88	33.331	24.264	365.9	0.114	5.69	102.8	2.2	0.31	0.1	0.01	0.80	0.36	30	218
40		12.36	12.35	33.091	25.040	292.0	0.147	5.40	88.8	5.8	0.74	5.5	0.23	0.76	0.66	40	217
50		11.99	11.98	33.154	25.159	280.9	0.176	5.12	83.6	7.6	0.89	8.3	0.08	0.52	0.50	50	216
60		11.89	11.88	33.279	25.275	270.1	0.203									60	215
60		11.89	11.88	33.285	25.280	269.6	0.203	4.81	78.4	9.8	1.06	11.1	0.04	0.32	0.40	60	214
71		11.22	11.21	33.570	25.625	237.1	0.231	3.86	62.2	16.2	1.42	16.8	0.04	0.13	0.19	71	213
75	ISL	11.09	11.08	33.609	25.678	232.0	0.241	3.73	59.9	17.1	1.47	17.6	0.03	0.11	0.17	75	
84		10.83	10.82	33.644	25.752	225.2	0.261	3.60	57.5	18.4	1.54	18.7	0.02	0.08	0.14	84	212
99		10.11	10.10	33.714	25.932	208.4	0.294	3.31	52.1	22.1	1.71	21.4	0.01	0.04	0.08	99	211
100	ISL	10.06	10.05	33.718	25.943	207.3	0.296	3.32	52.2	22.2	1.71	21.5	0.01	0.04	0.08	100	
119		9.35	9.34	33.803	26.127	190.1	0.333	3.49	54.0	24.2	1.72	22.4	0.02	0.00	0.05	120	210
125	ISL	9.34	9.33	33.848	26.164	186.7	0.345	3.26	50.5	25.8	1.80	23.3	0.02	0.00	0.05	126	
139		9.33	9.31	33.933	26.233	180.5	0.370	2.64	40.9	29.7	2.01	25.6	0.01	0.00	0.05	140	209
150	ISL	9.16	9.14	33.975	26.293	175.0	0.390	2.57	39.6	31.7	2.08	26.5	0.01	0.00	0.05	151	
170		8.76	8.74	34.020	26.392	165.9	0.424	2.45	37.5	34.5	2.15	27.6	0.01	0.00	0.05	171	208
200		8.35	8.33	34.055	26.483	157.7	0.473	2.29	34.7	38.3	2.25	29.0	0.01	0.00	0.05	201	207
229		7.90	7.88	34.060	26.554	151.2	0.517	2.28	34.2	41.9	2.30	30.0	0.01			230	206
250	ISL	7.68	7.66	34.082	26.604	146.8	0.549	2.04	30.4	45.5	2.41	31.3	0.00			251	
267		7.51	7.48	34.099	26.641	143.4	0.573	1.82	27.1	48.6	2.51	32.5	0.00			269	205
300	ISL	7.01	6.98	34.084	26.700	138.1	0.620	1.77	26.0	53.4	2.59	33.9	0.00			302	
317		6.76	6.73	34.076	26.728	135.5	0.643	1.75	25.6	55.9	2.63	34.6	0.00			319	204
377		6.34	6.31	34.148	26.840	125.5	0.721	1.01	14.6	66.8	2.91	37.7	0.00			379	203
400	ISL	6.24	6.20	34.183	26.881	121.9	0.750	0.80	11.6	70.2	2.99	38.5	0.00			403	
439		6.07	6.03	34.238	26.947	116.1	0.796	0.53	7.6	75.6	3.11	39.6	0.00			442	202
500	ISL	5.63	5.59	34.283	27.037	107.9	0.865	0.37	5.3	84.5	3.22	41.1	0.00			503	
517		5.51	5.47	34.296	27.062	105.6	0.883	0.32	4.5	87.0	3.25	41.5	0.00			521	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 14.7 N	121 26.4 W	23/09/98	1803 UTC	3782 m	270 05 kn	310 01 09	1	1018.1 mb	19.0 C	16.7 C	20m	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	17.70	17.70	33.439	24.151	375.7	0.000			1.9	0.27	0.0	0.00	0.29	0.09	0	
1	17.71	17.71	33.441	24.150	375.8	0.004									1	222
1	17.72	17.72	33.438	24.145	376.2	0.004									1	223
1 A	17.70	17.70	33.439	24.151	375.7	0.004	5.68 U	104.3 U	1.9	0.27	0.0	0.00	0.29	0.09	1	221
10 ISL	17.64	17.64	33.440	24.166	374.5	0.038			1.9	0.26	0.0	0.00	0.31	0.08	10	
15 A	17.60	17.60	33.439	24.175	373.8	0.056	5.56	101.9	1.9	0.26	0.0	0.00	0.34	0.07	15	220
20 ISL	17.58	17.58	33.435	24.177	373.8	0.075	5.58	102.2	1.9	0.26	0.0	0.00	0.37	0.08	20	
28 A	17.56	17.56	33.429	24.178	374.0	0.105	5.61	102.7	1.8	0.27	0.0	0.00	0.42	0.09	28	219
30 ISL	17.06	17.06	33.364	24.247	367.5	0.112	5.68	103.0	1.8	0.28	0.0	0.00	0.47	0.12	30	
42 A	14.03	14.02	33.101	24.716	323.1	0.154	5.97	101.7	2.4	0.36	0.0	0.00	0.90	0.45	42	218
48	13.59	13.58	33.158	24.850	310.4	0.173	5.87	99.1	2.8	0.45	1.0	0.25	1.16	0.74	48	217
50 ISL	13.46	13.45	33.158	24.876	307.9	0.179	5.81	97.8	2.9	0.48	1.3	0.33	1.08	0.71	50	
54 A	13.19	13.18	33.145	24.921	303.8	0.191	5.66	94.8	3.2	0.53	1.9	0.43	0.84	0.59	54	216
65	12.19	12.18	33.121	25.096	287.2	0.224	5.26	86.2	6.0	0.72	5.6	0.08	0.29	0.41	65	215
75 A	11.36	11.35	33.318	25.403	258.2	0.251	4.56	73.5	11.0	1.09	11.9	0.02	0.13	0.24	75	214
84	10.61	10.60	33.482	25.664	233.5	0.273	4.20	66.7	16.1	1.39	16.7	0.01	0.05	0.11	84	213
95	9.90	9.89	33.546	25.836	217.3	0.298	3.78	59.1	20.3	1.60	19.9	0.01	0.02	0.05	95	212
100 ISL	9.70	9.69	33.590	25.903	211.0	0.309	3.66	57.0	21.8	1.67	21.0	0.01	0.01	0.05	100	
108	9.46	9.45	33.667	26.003	201.6	0.325	3.51	54.4	23.9	1.76	22.4	0.01	0.01	0.06	109	211
124	9.09	9.08	33.808	26.173	185.8	0.356	3.18	48.9	27.2	1.88	24.5	0.01	0.00	0.04	125	210
125 ISL	9.07	9.06	33.814	26.181	185.0	0.358	3.17	48.8	27.4	1.89	24.6	0.01	0.00	0.04	126	
145	8.68	8.66	33.898	26.308	173.3	0.394	3.05	46.5	30.6	1.98	26.1	0.01	0.00	0.04	146	209
150 ISL	8.60	8.58	33.916	26.335	170.8	0.402	3.02	46.0	31.4	2.00	26.4	0.01	0.00	0.04	151	
168	8.36	8.34	33.971	26.415	163.5	0.432	2.89	43.8	34.1	2.06	27.3	0.01	0.00	0.03	169	208
198	7.99	7.97	34.021	26.510	154.9	0.480	2.58	38.8	38.9	2.21	29.3	0.01	0.00	0.04	199	207
200 ISL	7.97	7.95	34.024	26.515	154.4	0.483	2.56	38.5	39.1	2.22	29.4	0.01			201	
228	7.77	7.75	34.056	26.570	149.6	0.526	2.32	34.7	42.2	2.32	30.5	0.01			229	206
250 ISL	7.58	7.56	34.079	26.616	145.6	0.558	2.07	30.8	45.6	2.43	31.6	0.00			251	
268	7.42	7.39	34.095	26.651	142.4	0.584	1.86	27.6	48.5	2.52	32.6	0.00			270	205
300 ISL	7.15	7.12	34.115	26.705	137.7	0.629	1.58	23.3	53.2	2.63	34.0	0.01			302	
318	6.99	6.96	34.123	26.734	135.2	0.654	1.45	21.3	55.9	2.69	34.8	0.01			320	204
375	6.33	6.30	34.134	26.831	126.4	0.728	1.04	15.0	65.8	2.90	37.9	0.00			377	203
400 ISL	6.11	6.07	34.142	26.865	123.2	0.759	0.91	13.1	69.7	2.97	38.8	0.00			403	
437	5.85	5.81	34.159	26.912	119.1	0.804	0.74	10.6	75.0	3.06	39.9	0.00			440	202
500 ISL	5.53	5.49	34.220	27.000	111.3	0.877	0.50	7.1	83.2	3.18	41.3	0.00			503	
520	5.43	5.39	34.239	27.027	108.9	0.899	0.42	5.9	85.8	3.22	41.7	0.00			524	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.5 N	122 7.3 W	23/09/98	1126 UTC	4159 m	200 04 kn			1016.4 mb	18.1 C	16.0 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	17.37	17.37	33.119	23.985	391.5	0.000	5.64	102.7	2.2	0.34	0.0	0.00	0.13	0.03	0	
1	17.37	17.37	33.119	23.985	391.5	0.004									1	223
1	17.37	17.37	33.119	23.985	391.5	0.004	5.64	102.7	2.2	0.34	0.0	0.00	0.13	0.03	1	222
10 ISL	17.31	17.31	33.115	23.996	390.8	0.039	5.62	102.2	2.1	0.33	0.0	0.00	0.14	0.03	10	
14	17.26	17.26	33.105	24.000	390.5	0.055	5.62	102.1	2.1	0.33	0.0	0.00	0.14	0.04	14	221
20 ISL	17.13	17.13	33.107	24.033	387.6	0.078	5.65	102.4	2.1	0.33	0.0	0.00	0.17	0.05	20	
30	16.90	16.90	33.115	24.093	382.1	0.117	5.71	103.0	2.2	0.33	0.0	0.00	0.22	0.08	30	220
44	16.67	16.66	33.126	24.156	376.6	0.170	5.69	102.2	2.0	0.33	0.0	0.00	0.26	0.12	44	219
50 ISL	16.42	16.41	33.113	24.204	372.2	0.192	5.74	102.6	2.1	0.33	0.0	0.00	0.29	0.13	50	
53	16.20	16.19	33.103	24.246	368.2	0.203	5.77	102.7	2.1	0.33	0.0	0.00	0.31	0.13	53	218
63	14.61	14.60	33.062	24.565	338.1	0.239	5.93	102.2	2.2	0.34	0.0	0.01	0.37	0.36	63	216
64	14.60	14.59	33.062	24.567	337.9	0.242									64	217
74	14.19	14.18	33.214	24.771	318.7	0.275	5.83	99.7	2.7	0.35	0.4	0.10	0.35	0.35	74	215
75 ISL	14.10	14.09	33.208	24.785	317.4	0.278	5.81	99.2	2.8	0.36	0.6	0.10	0.34	0.37	75	
84	13.27	13.26	33.120	24.886	307.9	0.306	5.59	93.7	3.7	0.51	2.3	0.08	0.28	0.47	84	213
85	13.22	13.21	33.113	24.891	307.5	0.309									85	214
94	12.67	12.66	33.087	24.979	299.2	0.336	5.41	89.6	4.9	0.66	4.5	0.05	0.28	0.32	94	212
100 ISL	12.35	12.34	33.143	25.084	289.3	0.354	5.19	85.4	6.3	0.79	6.6	0.04	0.23	0.29	100	
107	11.99	11.98	33.240	25.227	275.8	0.374	4.89	79.9	8.4	0.95	9.3	0.03	0.15	0.27	107	211
122	11.10	11.09	33.426	25.535	246.7	0.413	4.31	69.2	13.2	1.25	14.3	0.01	0.07	0.14	123	210
125 ISL	10.96	10.94	33.460	25.587	241.9	0.420	4.20	67.2	14.2	1.31	15.2	0.01	0.06	0.13	126	
144	10.20	10.18	33.647	25.865	215.7	0.464	3.69	58.1	19.7	1.58	19.7	0.01	0.02	0.07	145	209
150 ISL	9.98	9.96	33.691	25.937	209.0	0.477	3.70	58.0	20.5	1.59	20.2	0.01	0.02	0.05	151	
169	9.37	9.35	33.799	26.122	191.6	0.515	3.79	58.7	22.7	1.63	21.1	0.01	0.01	0.02	170	208
198	8.70	8.68	33.899	26.307	174.4	0.568	3.33	50.8	29.1	1.87	24.8	0.00	0.00	0.02	199	207
200 ISL	8.65	8.63	33.906	26.320	173.2	0.571	3.30	50.3	29.6	1.88	25.0	0.00			201	
227	8.07	8.05	33.985	26.470	159.2	0.616	3.01	45.3	35.6	2.06	27.5	0.00			228	206
250 ISL	7.74	7.72	34.009	26.537	153.0	0.652	2.81	42.0	39.3	2.17	28.9	0.00			251	
265	7.56	7.53	34.015	26.568	150.3	0.675	2.68	39.9	41.6	2.23	29.7	0.00			266	205
300 ISL	7.06	7.03	34.033	26.653	142.6	0.726	2.26	33.2	48.6	2.42	32.2	0.00			302	
318	6.83	6.80	34.044	26.693	138.9	0.751	2.02	29.6	52.3	2.52	33.5	0.00			320	204
376	6.48	6.45	34.107	26.790	130.3	0.829	1.29	18.7	61.9	2.79	36.6	0.00			378	203
400 ISL	6.26	6.22	34.111	26.822	127.5	0.860	1.14	16.5	65.5	2.86	37.6	0.00			402	
436	5.93	5.89	34.114	26.866	123.5	0.906	0.99	14.2	70.7	2.95	39.0	0.00			439	202
500 ISL	5.48	5.44	34.164	26.961	114.8	0.982	0.73	10.3	80.8	3.11	41.0	0.00			503	
514	5.38	5.34	34.175	26.982	113.0	0.998	0.67	9.5	83.0	3.15	41.4	0.00			517	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 34.7 N	122 48.7 W	23/09/98	0526 UTC	4255 m	240 05 kn			1016.6 mb	18.3 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	18.50	18.50	33.244	23.806	408.6	0.000	5.45	101.5	2.1	0.25	0.0	0.00	0.09	0.02	0	
1	18.50	18.50	33.244	23.806	408.6	0.004	5.45	101.5	2.1	0.25	0.0	0.00	0.09	0.02	1	220
10 ISL	18.38	18.38	33.245	23.837	406.0	0.041	5.46	101.5	2.1	0.25	0.0	0.00	0.09	0.02	10	
14	18.32	18.32	33.246	23.852	404.6	0.057	5.46	101.4	2.1	0.25	0.0	0.00	0.09	0.02	14	219
20 ISL	18.32	18.32	33.246	23.853	404.8	0.081	5.46	101.3	2.0	0.25	0.0	0.00	0.10	0.02	20	
30	18.31	18.30	33.247	23.856	404.8	0.122	5.46	101.3	1.9	0.25	0.0	0.00	0.11	0.02	30	218
45	18.30	18.29	33.245	23.858	405.2	0.182	5.46	101.3					0.12	0.03	45	217
50 ISL	18.30	18.29	33.246	23.859	405.3	0.203	5.46	101.3	1.9	0.25	0.0	0.00	0.12	0.03	50	
60	18.29	18.28	33.249	23.864	405.1	0.243	5.46	101.3	1.9	0.25	0.0	0.00	0.14	0.04	60	216
75	15.67	15.66	33.374	24.575	337.6	0.299	5.94	104.8	2.2	0.24	0.0	0.00	0.21	0.06	75	215
86	15.25	15.24	33.435	24.715	324.6	0.335	5.85	102.4	2.3	0.25	0.0	0.00	0.20	0.16	86	214
96	14.84	14.83	33.470	24.831	313.8	0.367	5.76	100.0	2.5	0.26	0.0	0.00	0.20	0.30	96	213
100 ISL	14.68	14.67	33.489	24.880	309.2	0.380	5.73	99.1	2.6	0.27	0.1	0.02	0.26	0.30	100	
104	14.50	14.48	33.511	24.935	304.0	0.392	5.67	97.7	2.8	0.29	0.1	0.05	0.31	0.30	104	212
114	13.90	13.88	33.582	25.116	287.0	0.422	5.35	91.1	4.1	0.45	2.1	0.15	0.22	0.30	114	211
124	13.22	13.20	33.590	25.261	273.4	0.450	5.07	85.2	6.1	0.63	5.3	0.02	0.18	0.26	124	210
125 ISL	13.13	13.11	33.589	25.278	271.7	0.452	5.05	84.7	6.3	0.65	5.6	0.02	0.18	0.26	126	
138	11.94	11.92	33.580	25.501	250.5	0.486	4.80	78.5	9.2	0.88	9.4	0.00	0.12	0.19	139	209
150 ISL	11.09	11.07	33.621	25.689	232.8	0.515	4.56	73.2	12.3	1.09	12.8	0.00	0.08	0.13	151	
164	10.30	10.28	33.694	25.885	214.3	0.547	4.26	67.3	16.2	1.31	16.4	0.00	0.04	0.07	165	208
194	9.07	9.05	33.847	26.208	183.9	0.606	3.60	55.4	25.1	1.72	22.7	0.00	0.00	0.02	195	207
200 ISL	8.93	8.91	33.871	26.249	180.0	0.617	3.52	54.0	26.3	1.76	23.4	0.00			201	
229	8.44	8.42	33.956	26.392	166.8	0.667	3.25	49.3	31.4	1.92	25.6	0.00			230	206
250 ISL	8.00	7.97	33.985	26.481	158.6	0.702	3.07	46.1	35.8	2.04	27.3	0.00			251	
266	7.67	7.64	33.998	26.539	153.1	0.727	2.92	43.5	39.2	2.13	28.6	0.00			267	205
300 ISL	7.16	7.13	34.017	26.626	145.1	0.777	2.51	37.0	45.9	2.32	31.1	0.00			302	
317	6.95	6.92	34.024	26.661	142.0	0.802	2.28	33.4	49.2	2.42	32.3	0.00			319	204
376	6.32	6.29	34.075	26.785	130.6	0.882	1.43	20.7	61.9	2.76	36.7	0.00			378	203
400 ISL	6.15	6.11	34.097	26.825	127.1	0.913	1.22	17.6	66.1	2.86	37.9	0.00			402	
437	5.91	5.87	34.128	26.880	122.2	0.959	0.97	13.9	72.1	2.99	39.4	0.00			440	202
500 ISL	5.46	5.42	34.167	26.966	114.4	1.034	0.65	9.2	81.4	3.13	41.1	0.00			503	
520	5.32	5.28	34.180	26.993	111.9	1.056	0.55	7.8	84.4	3.17	41.6	0.00			523	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 14.5 N	123 29.5 W	22/09/98	2336 UTC	4141 m	200 03 kn	210 03 06	1	1016.0 mb	19.9 C	16.0 C	40m	5/8	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	19.09	19.09	33.441	23.808	408.3	0.000	5.40	101.8	2.3	0.22	0.0	0.00	0.08	0.01	0	
1	19.23	19.23	33.446	23.777	411.4	0.004									1	223
1	19.39	19.39	33.447	23.737	415.2	0.004									1	224
1	19.09	19.09	33.441	23.808	408.4	0.004	5.40	101.8	2.3	0.22	0.0	0.00	0.08	0.01	1	222
10 ISL	18.94	18.94	33.438	23.844	405.2	0.041	5.40	101.5	2.3	0.22	0.0	0.00	0.08	0.02	10	
15	18.83	18.83	33.436	23.871	402.9	0.061	5.40	101.3	2.3	0.22	0.0	0.00	0.08	0.02	15	221
20 ISL	18.83	18.83	33.438	23.873	402.9	0.081	5.40	101.3	2.3	0.22	0.0	0.00	0.08	0.02	20	
30	18.83	18.82	33.443	23.877	402.9	0.121	5.41	101.5	2.4	0.22	0.0	0.00	0.09	0.02	30	220
45	18.82	18.81	33.444	23.881	403.0	0.182	5.39	101.1	2.3	0.22	0.0	0.00	0.11	0.02	45	219
50 ISL	18.67	18.66	33.453	23.925	399.0	0.202	5.44	101.8	2.4	0.22	0.0	0.00	0.13	0.03	50	
59	18.15	18.14	33.485	24.079	384.6	0.237	5.58	103.4	2.5	0.21	0.0	0.00	0.16	0.04	59	218
74	16.42	16.41	33.602	24.580	337.2	0.291									74	217
74	16.42	16.41	33.603	24.581	337.1	0.291	5.84	104.7	2.6	0.20	0.0	0.00	0.18	0.06	74	216
75 ISL	16.31	16.30	33.599	24.603	335.0	0.295	5.84	104.5	2.6	0.20	0.0	0.00	0.18	0.06	75	
85	15.47	15.46	33.572	24.772	319.2	0.327	5.86	103.1	2.8	0.21	0.1	0.00	0.20	0.13	85	215
94	15.29	15.28	33.673	24.890	308.2	0.356	5.77	101.2	3.0	0.21	0.1	0.00	0.23	0.29	94	214
100 ISL	15.36	15.34	33.756	24.938	303.8	0.374	5.70	100.1	3.1	0.20	0.0	0.01	0.25	0.42	100	
103	15.39	15.37	33.795	24.962	301.6	0.383									103	213
103	15.39	15.37	33.794	24.961	301.7	0.383	5.67	99.7	3.1	0.20	0.0	0.01	0.26	0.47	103	212
114	15.15	15.13	33.846	25.054	293.2	0.416	5.56	97.3	3.3	0.23	0.1	0.13	0.25	0.39	114	211
125	14.66	14.64	33.821	25.141	285.1	0.448	5.44	94.3	3.7	0.30	0.9	0.19	0.19	0.27	126	210
139	13.59	13.57	33.735	25.299	270.3	0.486	5.19	87.9	5.5	0.50	4.0	0.03	0.12	0.21	140	209
150 ISL	12.60	12.58	33.719	25.484	252.8	0.515	4.97	82.5	7.8	0.70	7.2	0.02	0.08	0.15	151	
163	11.49	11.47	33.738	25.708	231.4	0.547	4.72	76.5	10.9	0.93	10.9	0.01	0.05	0.09	164	208
194	9.97	9.95	33.813	26.034	200.7	0.614	4.32	67.8	17.8	1.32	17.1	0.01	0.01	0.03	195	207
200 ISL	9.74	9.72	33.836	26.091	195.3	0.625	4.26	66.5	19.2	1.38	18.1	0.01			201	
228	8.90	8.88	33.939	26.307	175.0	0.677	3.94	60.4	25.8	1.62	21.8	0.01			229	206
250 ISL	8.56	8.53	33.986	26.397	166.8	0.715	3.60	54.8	30.0	1.78	24.1	0.01			251	
269	8.32	8.29	34.008	26.451	161.9	0.746	3.29	49.8	33.5	1.91	25.8	0.01			270	205
300 ISL	7.65	7.62	34.022	26.561	151.6	0.795	2.82	42.0	40.8	2.15	28.9	0.01			302	
320	7.24	7.21	34.026	26.623	145.9	0.824	2.54	37.5	45.3	2.29	30.7	0.01			322	204
377	6.74	6.71	34.055	26.714	137.7	0.905	1.95	28.5	54.0	2.55	33.9	0.01			379	203
400 ISL	6.41	6.37	34.053	26.757	133.8	0.937	1.74	25.2	59.1	2.66	35.4	0.01			402	
437	5.90	5.86	34.058	26.826	127.3	0.985	1.41	20.2	67.5	2.82	37.8	0.01			440	202
500 ISL	5.57	5.53	34.134	26.927	118.2	1.062	0.83	11.8	78.1	3.05	40.4	0.01			503	
513	5.50	5.46	34.150	26.948	116.3	1.077	0.71	10.1	80.3	3.10	40.9	0.01			516	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 55.0 N	124 9.6 W	22/09/98	1802	UTC	4204 m	270	04 kn	300 03 10	1	1016.9 mb	19.1 C	16.0 C	42m	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	19.15	19.15	33.572	23.893	400.2	0.000	5.39	101.8	1.9	0.23	0.0	0.00	0.08	0.01	0	
1	A	19.15	19.15	33.572	23.893	400.3	0.004	5.39	101.8	1.9	0.23	0.0	0.00	0.08	0.01	1	223
1		19.16	19.16	33.573	23.891	400.4	0.004									1	224
10	ISL	19.12	19.12	33.571	23.900	399.9	0.040	5.39	101.8	1.9	0.23	0.0	0.00	0.08	0.02	10	
17		19.09	19.09	33.573	23.910	399.3	0.068	5.39	101.7	1.9	0.22	0.0	0.00	0.08	0.02	17	222
20	ISL	19.09	19.09	33.578	23.914	399.0	0.080	5.39	101.7	1.9	0.22	0.0	0.00	0.08	0.02	20	
30	ISL	19.09	19.08	33.597	23.929	397.9	0.120	5.40	101.9	1.8	0.21	0.0	0.00	0.10	0.01	30	
32	A	19.09	19.08	33.600	23.931	397.8	0.128	5.40	101.9	1.8	0.21	0.0	0.00	0.10	0.01	32	221
45		19.36	19.35	33.830	24.039	388.0	0.179	5.40	102.6	1.8	0.19	0.0	0.00	0.16	0.03	45	220
50	ISL	18.83	18.82	33.847	24.186	374.1	0.198	5.55	104.4	1.8	0.18	0.0	0.00	0.16	0.03	50	
58	A	17.82	17.81	33.839	24.430	351.1	0.227	5.79	106.8	1.9	0.17	0.0	0.00	0.15	0.04	58	219
69		17.11	17.10	33.810	24.579	337.2	0.265	5.86	106.6	2.0	0.18	0.0	0.00	0.17	0.06	69	218
75	ISL	16.93	16.92	33.831	24.637	331.8	0.285	5.81	105.3	2.0	0.18	0.0	0.00	0.18	0.08	75	
78		16.87	16.86	33.848	24.665	329.3	0.295	5.77	104.5	2.0	0.18	0.0	0.00	0.19	0.09	78	217
88	A	16.71	16.70	33.928	24.764	320.2	0.327	5.63	101.7	2.0	0.18	0.0	0.00	0.24	0.18	88	216
97		16.59	16.57	33.991	24.840	313.2	0.356	5.57	100.4	2.2	0.18	0.0	0.00	0.22	0.35	97	215
100	ISL	16.58	16.56	34.005	24.854	312.0	0.365	5.55	100.0	2.2	0.18	0.0	0.00	0.22	0.41	100	
105		16.55	16.53	34.018	24.871	310.6	0.381	5.53	99.6	2.2	0.18	0.0	0.01	0.21	0.47	105	214
115	A	16.25	16.23	33.997	24.924	305.8	0.411	5.57	99.7	2.4	0.18	0.0	0.05	0.21	0.40	115	213
125	ISL	16.06	16.04	34.000	24.970	301.7	0.442	5.53	98.7	2.5	0.20	0.0	0.11	0.19	0.36	126	
126		16.04	16.02	34.001	24.976	301.2	0.445	5.52	98.4	2.5	0.20	0.0	0.11	0.19	0.36	127	212
136		15.83	15.81	34.008	25.029	296.4	0.475	5.42	96.3	2.7	0.24	0.5	0.11	0.14	0.26	137	211
147		14.89	14.87	33.908	25.160	284.1	0.507	5.22	90.9	3.7	0.39	2.4	0.02	0.11	0.19	148	210
150	ISL	14.64	14.62	33.884	25.195	280.8	0.515	5.21	90.3	4.0	0.42	2.8	0.02	0.10	0.19	151	
156	A	14.11	14.09	33.839	25.272	273.4	0.532	5.18	88.8	4.7	0.49	3.8	0.02	0.07	0.18	157	209
176		11.73	11.71	33.704	25.638	238.5	0.583	4.76	77.5	9.6	0.90	9.9	0.01	0.04	0.09	177	208
194		10.51	10.49	33.713	25.864	217.0	0.624	4.39	69.7	14.7	1.22	15.0	0.01	0.02	0.04	195	207
200	ISL	10.23	10.21	33.731	25.926	211.1	0.637	4.28	67.5	16.2	1.30	16.3	0.01			201	
228		9.29	9.26	33.838	26.166	188.6	0.693	3.82	59.0	23.0	1.61	21.1	0.01			229	206
250	ISL	8.75	8.72	33.917	26.314	174.8	0.733	3.43	52.4	28.3	1.82	24.1	0.01			251	
268		8.39	8.36	33.970	26.411	165.7	0.763	3.16	47.9	32.3	1.96	26.0	0.01			269	205
300	ISL	7.81	7.78	34.008	26.527	154.9	0.815	2.93	43.8	38.2	2.11	28.2	0.00			302	
317		7.54	7.51	34.015	26.572	150.8	0.841	2.83	42.1	41.1	2.17	29.2	0.00			319	204
374		6.82	6.79	34.042	26.693	139.7	0.924	2.10	30.7	52.1	2.49	33.3	0.00			376	203
400	ISL	6.61	6.57	34.062	26.738	135.8	0.959	1.78	25.9	56.7	2.62	34.9	0.00			402	
436		6.36	6.32	34.094	26.796	130.6	1.007	1.37	19.8	62.9	2.79	36.8	0.01			439	202
500	ISL	5.85	5.81	34.166	26.918	119.4	1.087	0.81	11.6	74.9	3.04	39.7	0.01			503	
519		5.70	5.66	34.188	26.954	116.1	1.110	0.65	9.3	78.5	3.11	40.5	0.01			522	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 53.3 N	118 29.4 W	20/09/98	0339	UTC	57 m	120	03 kn			1007.6 mb	20.1 C	18.8 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	20.79	20.79	33.398	23.333	453.7	0.000	5.74	111.7	1.8	0.15	0.1	0.00	1.08	0.04	0	
1		20.79	20.79	33.398	23.333	453.8	0.005	5.74	111.7	1.8	0.15	0.1	0.00	1.08	0.04	1	207
4		20.12	20.12	33.391	23.505	437.4	0.018	5.81	111.7	1.9	0.16	0.1	0.00	1.37	0.06	4	206
9		19.12	19.12	33.357	23.737	415.5	0.039	6.03	113.7	2.4	0.17	0.1	0.00	0.63	0.37	9	205
10	ISL	18.80	18.80	33.342	23.806	408.9	0.043	6.03	113.0	2.4	0.18	0.1	0.00	0.66	0.38	10	
19		15.91	15.91	33.250	24.424	350.3	0.078	6.05	107.2	2.6	0.27	0.1	0.00	0.89	0.51	19	204
20	ISL	15.69	15.69	33.243	24.468	346.1	0.081	5.94	104.7	3.2	0.32	0.4	0.01	0.85	0.50	20	
30		14.30	14.30	33.237	24.764	318.1	0.114	4.97	85.2	8.8	0.76	3.2	0.12	0.36	0.36	30	203
40		14.39	14.38	33.391	24.864	308.9	0.146	5.30	91.1	5.8	0.47	1.4	0.07	0.38	0.14	40	202
50		13.92	13.91	33.445	25.004	295.8	0.176	4.88	83.1	7.1	0.63	1.0	0.08	1.20	0.04	50	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 49.3 N	118 37.5 W	20/09/98	0545	UTC	644 m	160	03 kn			1007.7 mb	20.5 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		21.48	21.48	33.449	23.185	467.9	0.000	5.56	109.6	1.5	0.15	0.1	0.00	1.08	0.05	0	220
10		21.11	21.11	33.420	23.264	460.7	0.046	5.59	109.4	1.7	0.18	0.1	0.00	1.15	0.07	10	219
20		18.12	18.12	33.341	23.974	393.2	0.089	5.99	110.8	1.9	0.22	0.1	0.00	0.96	0.12	20	218
30		16.79	16.79	33.348	24.298	362.6	0.127	6.06	109.3	2.2	0.25	0.0	0.00	0.34	0.15	30	217
40		15.60	15.59	33.349	24.570	337.0	0.162	5.79	102.0	2.9	0.33	0.1	0.01	0.72	0.34	40	216
50		14.84	14.83	33.341	24.730	322.0	0.195	5.46	94.7	3.9	0.46	0.2	0.11	0.34	0.25	50	215
60		13.94	13.93	33.440	24.997	296.8	0.226	5.11	87.1	5.3	0.59	2.8	0.34	0.28	0.27	60	214
70		13.17	13.16	33.494	25.195	278.1	0.255	4.71	79.0	8.0	0.83	7.7	0.07	0.18	0.32	70	213
75	ISL	12.84	12.83	33.519	25.280	270.2	0.268	4.56	76.0	9.1	0.92	9.3	0.05	0.16	0.29	75	
85		12.28	12.27	33.573	25.430	256.0	0.295	4.24	69.8	11.3	1.09	11.9	0.02	0.13	0.21	85	212
100		11.60	11.59	33.677	25.639	236.5	0.331	3.56	57.8	16.0	1.41	16.3	0.01	0.05	0.12	100	211
120		10.75	10.74	33.748	25.848	216.9	0.377	3.39	54.1	19.5	1.58	19.2	0.01	0.02	0.07	121	210
125	ISL	10.61	10.60	33.783	25.900	212.1	0.388	3.23	51.4	20.8	1.65	20.1	0.01	0.02	0.06	126	
139		10.30	10.28	33.882	26.031	199.9	0.416	2.77	43.8	24.4	1.85	22.6	0.01	0.01	0.04	140	209
150	ISL	10.13	10.11	33.926	26.095	194.1	0.438	2.62	41.3	25.8	1.92	23.6	0.01	0.01	0.04	151	
169		9.85	9.83	33.977	26.182	186.1	0.474	2.50	39.2	27.8	2.00	24.7	0.01	0.01	0.04	170	208
198		9.15	9.13	34.054	26.357	169.8	0.526	2.30	35.5	33.3	2.17	27.3	0.01	0.02	0.04	199	207
200	ISL	9.11	9.09	34.056	26.365	169.1	0.529	2.30	35.5	33.5	2.17	27.4	0.01			201	
229		8.55	8.53	34.069	26.464	160.1	0.577	2.28	34.7	36.5	2.23	28.5	0.01			230	206
250	ISL	8.28	8.25	34.096	26.526	154.4	0.610	2.09	31.6	39.8	2.33	29.6	0.01			251	
268		8.11	8.08	34.121	26.572	150.4	0.637	1.89	28.5	42.7	2.42	30.5	0.01			270	205
300	ISL	7.89	7.86	34.154	26.630	145.3	0.685	1.63	24.5	46.3	2.53	31.8	0.01			302	
318		7.78	7.75	34.170	26.659	142.8	0.711	1.49	22.3	48.4	2.59	32.5	0.01			320	204
378		7.26	7.22	34.227	26.779	132.1	0.793	0.96	14.2	58.8	2.85	34.9	0.02			380	203
400	ISL	7.01	6.97	34.249	26.831	127.3	0.822	0.79	11.6	63.1	2.94	35.9	0.02			403	
437		6.61	6.57	34.283	26.912	119.9	0.867	0.54	7.9	70.0	3.07	37.6	0.01			440	202
500	ISL	6.15	6.11	34.321	27.003	111.8	0.940	0.36	5.2	78.3	3.20	39.1	0.01			503	
520		6.01	5.96	34.334	27.031	109.2	0.962	0.30	4.3	81.0	3.24	39.6	0.01			524	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 39.5 N	118 58.2 W	20/09/98	0953 UTC	767 m	160 09 kn			1008.7 mb	20.1 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	21.01	21.01	33.423	23.293	457.6	0.000	5.61	109.6	1.7	0.15	0.2	0.00	1.29	0.09	0	
1	21.01	21.01	33.423	23.293	457.6	0.005	5.61	109.6	1.7	0.15	0.2	0.00	1.29	0.09	1	220
8	20.70	20.70	33.419	23.373	450.2	0.036	5.57	108.2	1.9	0.15	0.2	0.00	1.30	0.06	8	219
10 ISL	20.10	20.10	33.390	23.510	437.2	0.045	5.66	108.7	2.0	0.16	0.2	0.00	1.14	0.07	10	
19	16.98	16.98	33.303	24.219	369.8	0.082	6.07	109.8	2.6	0.23	0.2	0.00	0.37	0.14	19	218
20 ISL	16.76	16.76	33.299	24.267	365.3	0.085	6.06	109.2	2.6	0.24	0.2	0.00	0.37	0.15	20	
29	15.30	15.30	33.301	24.599	333.9	0.117	5.99	104.8	2.9	0.29	0.2	0.00	0.41	0.21	29	217
30 ISL	15.19	15.19	33.309	24.629	331.0	0.120	5.96	104.1	3.0	0.30	0.2	0.00	0.46	0.26	30	
39	14.49	14.48	33.386	24.839	311.2	0.149	5.66	97.5	4.1	0.38	0.2	0.05	0.85	0.65	39	216
49	13.94	13.93	33.427	24.986	297.5	0.179	5.27	89.8	5.3	0.52	1.5	0.20	0.68	0.67	49	215
50 ISL	13.89	13.88	33.431	25.000	296.2	0.182	5.23	89.0	5.5	0.54	1.9	0.19	0.65	0.67	50	
59	13.33	13.32	33.472	25.146	282.5	0.208	4.88	82.1	7.2	0.73	6.1	0.10	0.40	0.59	59	214
69	12.51	12.50	33.534	25.356	262.8	0.236	4.54	75.1	9.9	0.94	10.2	0.04	0.20	0.35	69	213
75 ISL	12.12	12.11	33.572	25.460	253.0	0.251	4.29	70.4	11.7	1.08	12.3	0.04	0.13	0.26	75	
83	11.68	11.67	33.619	25.579	241.8	0.271	3.98	64.7	14.1	1.24	14.7	0.03	0.07	0.17	83	212
99	10.94	10.93	33.685	25.765	224.4	0.308	3.63	58.1	17.7	1.44	17.6	0.02	0.05	0.09	99	211
100 ISL	10.90	10.89	33.690	25.776	223.3	0.310	3.61	57.8	18.0	1.45	17.8	0.02	0.05	0.09	100	
119	10.27	10.26	33.789	25.963	205.9	0.351	3.21	50.7	22.5	1.68	21.1	0.02	0.01	0.06	120	210
125 ISL	10.15	10.14	33.808	25.999	202.6	0.363	3.14	49.5	23.3	1.72	21.7	0.02	0.01	0.06	126	
138	9.94	9.92	33.843	26.062	196.9	0.389	3.01	47.2	24.8	1.79	22.6	0.01	0.01	0.06	139	209
150 ISL	9.70	9.68	33.890	26.139	189.7	0.413	2.85	44.5	26.9	1.88	23.8	0.01	0.01	0.05	151	
169	9.34	9.32	33.963	26.255	179.0	0.448	2.61	40.4	30.3	2.01	25.7	0.02	0.01	0.04	170	208
199	8.93	8.91	34.032	26.375	168.1	0.500	2.35	36.1	34.3	2.15	27.6	0.02	0.02	0.04	200	207
200 ISL	8.92	8.90	34.034	26.378	167.8	0.501	2.34	35.9	34.4	2.15	27.7	0.02			201	
228	8.60	8.58	34.082	26.466	159.9	0.547	2.07	31.6	38.2	2.28	29.0	0.02			229	206
250 ISL	8.41	8.38	34.113	26.520	155.1	0.582	1.91	29.0	40.7	2.35	29.9	0.03			251	
267	8.28	8.25	34.135	26.557	151.9	0.608	1.79	27.1	42.6	2.41	30.5	0.04			269	205
300 ISL	8.00	7.97	34.178	26.633	145.1	0.657	1.51	22.7	47.0	2.55	32.0	0.03			302	
317	7.83	7.80	34.197	26.673	141.5	0.681	1.36	20.4	49.6	2.63	32.8	0.02			319	204
376	7.05	7.01	34.238	26.817	128.3	0.761	0.85	12.5	61.7	2.89	35.8	0.02			378	203
400 ISL	6.90	6.86	34.248	26.845	125.9	0.791	0.76	11.1	64.2	2.94	36.5	0.02			403	
436	6.76	6.72	34.260	26.874	123.6	0.836	0.68	9.9	67.0	2.99	37.3	0.02			439	202
500 ISL	6.43	6.38	34.295	26.946	117.4	0.913	0.48	7.0	73.5	3.10	38.5	0.01			503	
522	6.32	6.27	34.308	26.971	115.3	0.939	0.41	5.9	75.7	3.14	38.9	0.01			526	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 29.9 N	119 18.8 W	20/09/98	1410 UTC	1649 m	140 11 kn	300 03 06	1	1009.1 mb	19.2 C	16.9 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	19.86	19.86	33.406	23.584	429.7	0.000	5.48	104.8	2.0	0.23	0.1	0.00	0.61	0.06	0	
1	19.86	19.86	33.406	23.584	429.8	0.004	5.48	104.8	2.0	0.23	0.1	0.00	0.61	0.06	1	220
10	18.64	18.64	33.358	23.859	403.9	0.042	5.63	105.2	2.3	0.26	0.1	0.00	0.38	0.08	10	219
18	15.70	15.70	33.237	24.461	346.7	0.072	5.89	103.9	2.8	0.30	0.1	0.00	0.26	0.10	18	218
20 ISL	15.40	15.40	33.240	24.529	340.2	0.079	5.89	103.3	2.9	0.30	0.1	0.00	0.37	0.12	20	
29	14.76	14.76	33.282	24.701	324.1	0.109	5.88	101.8	3.3	0.34	0.2	0.02	0.86	0.28	29	217
30 ISL	14.66	14.66	33.285	24.725	321.9	0.112	5.85	101.1	3.4	0.35	0.3	0.03	0.85	0.30	30	
39	13.77	13.76	33.318	24.937	301.9	0.140	5.50	93.3	4.7	0.52	2.6	0.12	0.72	0.50	39	216
49	12.87	12.86	33.378	25.164	280.5	0.169	4.92	82.0	7.7	0.80	7.0	0.24	0.57	0.56	49	215
50 ISL	12.81	12.80	33.388	25.184	278.6	0.172	4.88	81.2	8.0	0.82	7.4	0.23	0.54	0.55	50	
59	12.38	12.37	33.485	25.342	263.7	0.196	4.52	74.6	10.3	1.00	10.4	0.11	0.31	0.42	59	214
70	11.68	11.67	33.605	25.568	242.5	0.224	4.04	65.7	13.7	1.23	14.2	0.02	0.12	0.29	70	213
75 ISL	11.45	11.44	33.627	25.627	237.0	0.236	3.94	63.8	14.7	1.29	15.1	0.02	0.10	0.24	75	
84	11.13	11.12	33.651	25.704	229.8	0.257	3.82	61.4	16.2	1.37	16.4	0.02	0.07	0.17	84	212
99	10.67	10.66	33.729	25.847	216.5	0.291	3.51	55.9	19.2	1.55	18.9	0.01	0.04	0.10	99	211
100 ISL	10.64	10.63	33.734	25.856	215.7	0.293	3.49	55.6	19.4	1.56	19.0	0.01	0.04	0.10	100	
118	10.22	10.21	33.818	25.994	202.9	0.330	3.14	49.5	22.7	1.73	21.5	0.01	0.01	0.06	119	210
125 ISL	10.07	10.06	33.854	26.048	197.9	0.344	3.00	47.2	24.1	1.80	22.4	0.01	0.00	0.05	126	
138	9.80	9.78	33.921	26.146	188.8	0.370	2.75	43.0	26.8	1.92	24.1	0.01	0.00	0.04	139	209
150 ISL	9.48	9.46	33.980	26.245	179.6	0.392	2.56	39.8	29.7	2.03	25.6	0.01	0.00	0.04	151	
169	9.02	9.00	34.062	26.384	166.7	0.425	2.29	35.2	33.9	2.19	27.5	0.01	0.01	0.04	170	208
199	8.78	8.76	34.134	26.478	158.2	0.473	1.93	29.5	37.8	2.33	29.1	0.01	0.01	0.05	200	207
200 ISL	8.77	8.75	34.134	26.480	158.1	0.475	1.93	29.5	37.9	2.33	29.1	0.01			201	
228	8.56	8.54	34.126	26.507	156.0	0.519	1.95	29.7	39.3	2.36	29.6	0.01			229	206
250 ISL	8.26	8.23	34.132	26.557	151.5	0.553	1.86	28.1	42.1	2.42	30.5	0.01			251	
269	7.99	7.96	34.144	26.607	147.0	0.581	1.73	26.0	45.1	2.48	31.5	0.01			271	205
300 ISL	7.72	7.69	34.178	26.674	141.0	0.626	1.42	21.2	49.8	2.61	32.8	0.01			302	
319	7.58	7.55	34.199	26.711	137.8	0.652	1.22	18.2	52.8	2.70	33.6	0.01			321	204
379	6.95	6.91	34.221	26.817	128.3	0.732	0.89	13.1	62.0	2.91	36.3	0.01			381	203
400 ISL	6.82	6.78	34.239	26.849	125.4	0.759	0.78	11.4	64.8	2.97	37.0	0.01			403	
437	6.61	6.57	34.273	26.905	120.6	0.804	0.61	8.9	69.5	3.06	37.9	0.01			440	202
500 ISL	6.15	6.11	34.314	26.997	112.3	0.877	0.40	5.8	78.0	3.17	39.2	0.01			503	
514	6.05	6.00	34.323	27.017	110.5	0.893	0.35	5.0	79.9	3.20	39.5	0.01			518	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 19.5 N	119 40.2 W	20/09/98	1835	UTC	82 m	160	01 kn	290 05 08	1	1014.1 mb	22.1 c	17.9 c	22m	2/8	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	18.82	18.82	33.358	23.813	407.9	0.000	5.54	103.9	1.9	0.24	0.0	0.00	0.54	0.09	0	
1	18.80	18.80	33.360	23.820	407.3	0.004									1	212
1	18.84	18.84	33.359	23.809	408.3	0.004									1	213
1 A	18.82	18.82	33.358	23.813	407.9	0.004	5.54	103.9	1.9	0.24	0.0	0.00	0.54	0.09	1	211
9	18.63	18.63	33.354	23.858	403.9	0.037	5.63	105.2	1.8	0.24	0.0	0.00	0.54	0.09	9	210
10 ISL	18.35	18.35	33.340	23.917	398.3	0.041	5.67	105.4	1.9	0.25	0.0	0.00	0.59	0.09	10	
17 A	15.98	15.98	33.287	24.436	349.0	0.067	5.84	103.6	2.4	0.29	0.1	0.01	0.86	0.18	17	209
20 ISL	15.12	15.12	33.322	24.654	328.3	0.077	5.69	99.2	3.3	0.38	1.2	0.06	0.78	0.27	20	
24	14.12	14.12	33.388	24.918	303.3	0.090	5.40	92.3	4.8	0.54	3.2	0.12	0.61	0.38	24	208
30 A	12.98	12.98	33.462	25.207	275.9	0.107	4.94	82.5	7.5	0.78	7.0	0.11	0.39	0.44	30	207
39	12.49	12.48	33.500	25.332	264.2	0.131									39	206
39	12.49	12.48	33.500	25.332	264.2	0.131	4.71	77.9	9.6	0.93	9.3	0.12	0.32	0.40	39	205
47 A	12.04	12.03	33.535	25.445	253.6	0.152	4.51	73.9	11.1	1.03	10.9	0.13	0.25	0.34	47	204
50 ISL	11.86	11.85	33.551	25.492	249.2	0.159	4.41	72.0	12.0	1.09	11.9	0.12	0.21	0.29	50	
54	11.61	11.60	33.574	25.556	243.2	0.169	4.28	69.5	13.3	1.17	13.2	0.10	0.16	0.24	54	203
59 A	11.31	11.30	33.602	25.633	236.0	0.181	4.13	66.7	14.6	1.26	14.6	0.08	0.13	0.25	59	202
72	10.97	10.96	33.639	25.723	227.7	0.211	3.99	63.9	16.0	1.34	15.9	0.06	0.08	0.18	72	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 9.4 N	120 0.0 W	20/09/98	2250	UTC	1199 m	310	16 kn	330 07 06	1	1010.3 mb	17.1 c	16.2 c	21m	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	18.34	18.34	33.349	23.926	397.1	0.000	5.46	101.5	1.6	0.23	0.0	0.00	0.18	0.04	0	
1	18.35	18.35	33.352	23.925	397.2	0.004									1	221
2	18.34	18.34	33.349	23.926	397.2	0.008	5.46	101.5	1.6	0.23	0.0	0.00	0.18	0.04	2	220
2	18.35	18.35	33.346	23.921	397.7	0.008									2	222
10	18.35	18.35	33.347	23.922	397.8	0.040	5.50	102.2	1.5	0.22	0.0	0.00	0.18	0.04	10	219
20	18.14	18.14	33.333	23.963	394.2	0.079	5.52	102.2	1.5	0.22	0.0	0.00	0.22	0.04	20	218
30	15.14	15.14	33.377	24.692	325.0	0.115	5.84	101.9	2.5	0.32	0.0	0.00	0.38	0.29	30	217
40	14.70	14.69	33.427	24.826	312.5	0.147	5.64	97.6	3.3	0.38	0.3	0.06	0.89	0.65	40	216
50	14.24	14.23	33.477	24.962	299.8	0.178	5.32	91.2	4.4	0.53	2.4	0.09	0.65	0.67	50	215
59	13.75	13.74	33.492	25.076	289.2	0.204			5.8	0.67	4.9	0.05	0.44	0.50	59	214
71	12.39	12.38	33.553	25.393	259.2	0.237	4.95	81.7	10.2	1.00	10.6	0.02	0.17	0.32	71	213
75 ISL	12.19	12.18	33.568	25.443	254.5	0.248	4.83	79.4	10.9	1.05	11.5	0.02	0.16	0.28	75	
85	11.83	11.82	33.600	25.536	245.9	0.273	4.52	73.8	12.5	1.15	13.0	0.02	0.13	0.20	85	212
100	10.86	10.85	33.672	25.769	224.0	0.308	4.25	67.9	16.7	1.40	16.9	0.01	0.05	0.12	100	211
119	9.97	9.96	33.781	26.008	201.5	0.348	3.36	52.7	22.3	1.67	21.0	0.01	0.01	0.06	120	210
125 ISL	9.88	9.87	33.793	26.032	199.3	0.360	3.32	52.0	22.9	1.70	21.5	0.01	0.01	0.06	126	
139	9.75	9.73	33.818	26.074	195.6	0.388	3.23	50.4	24.1	1.75	22.2	0.01	0.01	0.05	140	209
150 ISL	9.51	9.49	33.879	26.161	187.5	0.409	2.99	46.5	26.7	1.87	23.8	0.01	0.01	0.04	151	
169	9.07	9.05	33.991	26.320	172.7	0.443	2.54	39.1	31.7	2.08	26.5	0.01	0.00	0.03	170	208
199	8.68	8.66	34.062	26.438	162.1	0.493	2.28	34.8	36.1	2.21	28.2	0.01	0.01	0.04	200	207
200 ISL	8.66	8.64	34.063	26.441	161.7	0.495	2.27	34.6	36.3	2.21	28.3	0.01			201	
228	8.24	8.22	34.085	26.523	154.3	0.539	2.05	31.0	40.6	2.33	29.8	0.01			229	206
250 ISL	8.02	7.99	34.108	26.574	149.8	0.573	1.91	28.7	43.4	2.41	30.8	0.01			251	
268	7.88	7.85	34.129	26.612	146.4	0.599	1.78	26.7	45.6	2.47	31.5	0.01			270	205
300 ISL	7.61	7.58	34.168	26.682	140.2	0.645	1.46	21.8	50.7	2.62	33.0	0.01			302	
319	7.45	7.42	34.189	26.722	136.7	0.672	1.27	18.9	53.8	2.71	33.9	0.01			321	204
378	6.99	6.95	34.215	26.807	129.2	0.750	0.90	13.2	61.2	2.89	36.1	0.01			380	203
400 ISL	6.75	6.71	34.215	26.840	126.3	0.778	0.81	11.8	64.5	2.94	37.0	0.01			403	
438	6.36	6.32	34.220	26.895	121.2	0.825	0.69	10.0	70.3	3.01	38.4	0.01			441	202
500 ISL	5.99	5.95	34.283	26.993	112.5	0.898	0.44	6.3	79.2	3.15	39.8	0.01			503	
516	5.90	5.86	34.300	27.018	110.3	0.915	0.38	5.4	81.5	3.19	40.1	0.01			520	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 59.3 N	120 20.9 W	21/09/98	0334	UTC	718 m	320	10 kn			1010.9 mb	17.1 c	15.8 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	17.70	17.70	33.420	24.136	377.1	0.000	5.53	101.5	2.0	0.27	0.1	0.00	0.23	0.09	0	
1	17.70	17.70	33.420	24.136	377.1	0.004	5.53	101.5	2.0	0.27	0.1	0.00	0.23	0.09	1	220
10	17.70	17.70	33.420	24.136	377.4	0.038	5.52	101.4	2.1	0.26	0.1	0.00	0.25	0.08	10	219
20	17.70	17.70	33.421	24.138	377.6	0.075	5.53	101.5	2.0	0.26	0.1	0.00	0.23	0.08	20	218
30 ISL	17.61	17.60	33.412	24.153	376.5	0.113	5.53	101.4	2.0	0.26	0.1	0.00	0.34	0.12	30	
31	17.60	17.59	33.411	24.155	376.4	0.117	5.53	101.3	2.0	0.26	0.1	0.00	0.35	0.12	31	217
41	13.58	13.57	33.076	24.788	316.0	0.152	5.76	97.2	3.4	0.44	1.1	0.31	0.88	0.55	41	216
50 ISL	13.10	13.09	33.179	24.965	299.5	0.179	5.47	91.4	5.8	0.66	4.5	0.25	0.59	0.45	50	
51	13.05	13.04	33.176	24.972	298.8	0.182	5.42	90.5	6.1	0.68	4.9	0.24	0.54	0.44	51	215
60	12.01	12.00	33.130	25.137	283.2	0.208	5.13	83.8	7.5	0.86	8.2	0.03	0.27	0.36	60	214
70	11.17	11.16	33.341	25.455	253.1	0.235	4.53	72.8	12.4	1.18	13.6	0.02	0.12	0.19	70	213
75 ISL	11.03	11.02	33.398	25.525	246.6	0.248	4.36	69.8	13.7	1.26	14.9	0.02	0.11	0.16	75	
85	10.89	10.88	33.481	25.615	238.3	0.272	4.10	65.5	15.5	1.36	16.4	0.02	0.08	0.13	85	212
100 ISL	10.30	10.29	33.668	25.863	214.9	0.306	3.62	57.2	19.6	1.56	19.6	0.02	0.02	0.06	100	
101	10.26	10.25	33.680	25.880	213.4	0.308	3.60	56.8	19.9	1.57	19.8	0.02	0.02	0.06	101	211
121	9.59	9.58	33.764	26.058	196.7	0.349	3.69	57.4	21.8	1.61	20.9	0.02	0.01	0.05	122	210
125 ISL	9.55	9.54	33.794	26.088	194.0	0.357	3.51	54.6	23.1	1.68	21.7	0.02	0.01	0.05	126	
139	9.47	9.45	33.895	26.180	185.5	0.384	2.82	43.8	27.7	1.92	24.7	0.02	0.00	0.05	140	209
150 ISL	9.26	9.24	33.938	26.248	179.2	0.404	2.85	44.1	29.5	1.94	25.2	0.02	0.00	0.05	151	
168	8.89	8.87	33.975	26.336	171.1	0.435	2.89	44.3	31.1	1.98	25.9	0.01	0.00	0.04	169	208
198	8.55	8.53	34.003	26.411	164.5	0.485	2.95	44.9	33.0	1.99	26.4	0.01	0.00	0.04	199	207
200 ISL	8.54	8.52	34.008	26.417	164.0	0.489	2.90	44.1	33.4	2.01	26.6	0.01			201	
228	8.29	8.27	34.075	26.508	155.8	0.533	2.11	31.9	40.0	2.32	29.8	0.01			229	206
250 ISL	7.84	7.82	34.086	26.583	148.8	0.567	2.01	30.1	44.6	2.43	31.3	0.01			251	
269	7.44	7.41	34.088	26.643	143.2	0.595	1.93	28.6	48.1	2.48	32.2	0.01			271	205
300 ISL	7.13	7.10	34.116	26.709	137.3	0.638	1.63	24.0	53.0	2.61	33.7	0.01			302	
318	7.03	7.00	34.135	26.738	134.8	0.663	1.44	21.2	55.4	2.68	34.5	0.01			320	204
379	6.88	6.84	34.192	26.804	129.5	0.743	0.98	14.4	61.4	2.86	36.3	0.01			381	203
400 ISL	6.65	6.61	34.212	26.851	125.2	0.770	0.81	11.8	65.8	2.95	37.4	0.01			403	
438	6.21	6.17	34.246	26.935	117.3	0.816	0.54	7.8	73.8	3.09	39.2	0.01			441	202
500 ISL	5.93	5.89	34.279	26.997	112.0	0.887	0.40	5.7	79.5	3.18	40.2	0.01			503	
522	5.83	5.78	34.291	27.020	110.1	0.912	0.35	5.0	81.5	3.21	40.5	0.01			526	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 39.4 N	121 1.8 W	21/09/98	0927 UTC	3770 m	330 14 kn			1012.7 mb	17.2 C	14.8 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	16.96	16.96	33.181	24.129	377.8	0.000	5.66	102.3	2.2	0.30	0.1	0.00	0.20	0.05	0	
1	16.96	16.96	33.181	24.129	377.8	0.004	5.66	102.3	2.2	0.30	0.1	0.00	0.20	0.05	1	220
10 ISL	16.95	16.95	33.184	24.134	377.6	0.038	5.65	102.1	2.2	0.30	0.1	0.00	0.20	0.05	10	
14	16.95	16.95	33.186	24.136	377.6	0.053	5.65	102.1	2.2	0.30	0.1	0.00	0.20	0.05	14	219
20 ISL	16.94	16.94	33.192	24.143	377.1	0.076	5.72	103.4	2.2	0.30	0.1	0.00	0.20	0.05	20	
29	16.92	16.92	33.200	24.154	376.3	0.109	5.83	105.3	2.2	0.30	0.1	0.00	0.20	0.06	29	218
30 ISL	16.89	16.89	33.202	24.162	375.5	0.113	5.83	105.2	2.2	0.30	0.1	0.00	0.21	0.07	30	
45	15.89	15.88	33.194	24.386	354.7	0.168	5.80	102.6	2.3	0.32	0.1	0.00	0.30	0.22	45	217
50 ISL	15.19	15.18	33.153	24.509	343.0	0.185	5.83	101.7	2.2	0.35	0.2	0.01	0.48	0.29	50	
54	14.68	14.67	33.136	24.606	333.8	0.199	5.86	101.2	2.2	0.36	0.2	0.02	0.59	0.34	54	216
64	14.42	14.41	33.255	24.754	320.1	0.232	5.93	101.9	2.5	0.28	0.1	0.01	0.40	0.41	64	215
74	14.31	14.30	33.432	24.914	305.1	0.263	5.84	100.3	3.0	0.26	0.1	0.00	0.29	0.46	74	214
75 ISL	14.25	14.24	33.433	24.927	303.9	0.266	5.82	99.8	3.0	0.27	0.2	0.00	0.28	0.45	75	
84	13.35	13.34	33.361	25.057	291.7	0.293	5.51	92.7	4.3	0.47	2.7	0.00	0.24	0.36	84	213
93	12.00	11.99	33.203	25.196	278.4	0.318	5.02	82.0	8.1	0.88	8.5	0.01	0.16	0.28	93	212
100 ISL	11.82	11.81	33.375	25.364	262.7	0.337	4.88	79.5	9.2	0.91	9.8	0.02	0.12	0.25	100	
108	11.61	11.60	33.571	25.555	244.6	0.358	4.76	77.3	10.2	0.94	10.4	0.02	0.09	0.22	108	211
125	10.67	10.66	33.618	25.761	225.3	0.398	3.99	63.5	16.7	1.39	17.0	0.00	0.04	0.08	126	210
144	9.70	9.68	33.732	26.015	201.3	0.438	3.82	59.6	21.0	1.56	20.0	0.00	0.02	0.06	145	209
150 ISL	9.50	9.48	33.766	26.075	195.8	0.450	3.77	58.5	22.2	1.60	20.8	0.00	0.01	0.05	151	
169	9.04	9.02	33.859	26.222	182.0	0.486	3.59	55.2	25.8	1.72	22.8	0.00	0.00	0.03	170	208
198	8.52	8.50	33.944	26.370	168.4	0.537	3.28	49.9	30.8	1.88	25.2	0.00	0.00	0.02	199	207
200 ISL	8.49	8.47	33.950	26.379	167.5	0.540	3.26	49.5	31.1	1.89	25.3	0.00			201	
227	8.10	8.08	34.010	26.485	157.8	0.584	3.08	46.4	35.5	2.01	27.0	0.00			228	206
250 ISL	7.57	7.55	34.008	26.561	150.7	0.619	3.01	44.8	40.0	2.09	28.3	0.00			251	
266	7.20	7.17	33.997	26.605	146.6	0.643	2.96	43.7	43.1	2.15	29.2	0.00			267	205
300 ISL	6.76	6.73	33.996	26.664	141.3	0.692	2.72	39.7	48.3	2.29	31.0	0.00			302	
314	6.65	6.62	34.002	26.684	139.6	0.712	2.57	37.4	50.4	2.36	31.8	0.00			316	204
375	6.54	6.51	34.107	26.782	131.1	0.794	1.31	19.0	60.8	2.76	36.3	0.00			377	203
400 ISL	6.29	6.25	34.114	26.820	127.7	0.827	1.10	15.9	65.3	2.85	37.6	0.00			402	
444	5.88	5.84	34.132	26.887	121.6	0.882	0.89	12.7	72.4	2.97	39.2	0.00			447	202
500 ISL	5.98	5.94	34.254	26.971	114.5	0.948	0.48	6.9	77.2	3.12	39.7	0.00			503	
517	6.01	5.96	34.291	26.997	112.4	0.967	0.36	5.2	78.6	3.17	39.9	0.00			520	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 19.4 N	121 42.8 W	21/09/98	1753 UTC	4009 m	330 16 kn	320 04 09	1	1015.1 mb	18.3 C	15.2 C	28m	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	17.87	17.87	33.161	23.897	399.9	0.000	5.50	101.2	1.9	0.25	0.0	0.00	0.14	0.04	0	
1 A	17.87	17.87	33.161	23.897	399.9	0.004	5.50	101.2	1.9	0.25	0.0	0.00	0.14	0.04	1	223
1	17.87	17.87	33.161	23.897	399.9	0.004									1	224
10 ISL	17.84	17.84	33.157	23.901	399.8	0.040	5.53	101.7	1.9	0.25	0.0	0.00	0.13	0.03	10	
11	17.84	17.84	33.156	23.901	399.9	0.044	5.53	101.7	1.9	0.25	0.0	0.00	0.13	0.03	11	222
20 ISL	17.83	17.83	33.153	23.901	400.2	0.080	5.55	102.0	1.9	0.25	0.0	0.00	0.13	0.04	20	
21 A	17.83	17.83	33.153	23.901	400.2	0.084	5.55	102.0	1.9	0.25	0.0	0.00	0.13	0.04	21	221
30	17.82	17.81	33.150	23.902	400.5	0.120	5.52	101.4	1.9	0.25	0.0	0.00	0.13	0.04	30	220
38 A	17.82	17.81	33.155	23.906	400.3	0.152	5.55	102.0	1.8	0.25	0.0	0.00	0.15	0.03	38	219
50	17.82	17.81	33.152	23.904	400.9	0.200	5.53	101.6	1.7	0.25	0.0	0.00	0.14	0.04	50	218
60 A	16.47	16.46	33.335	24.363	357.4	0.238	5.89	105.5	1.9	0.25	0.0	0.00	0.39	0.10	60	217
67	15.74	15.73	33.316	24.514	343.1	0.263	5.93	104.7	1.9	0.25	0.0	0.00	0.22	0.13	67	216
75 ISL	15.46	15.45	33.392	24.635	331.8	0.290	5.85	102.8	2.0	0.25	0.0	0.00	0.25	0.19	75	
76 A	15.45	15.44	33.406	24.648	330.6	0.293	5.83	102.4	2.0	0.25	0.0	0.00	0.25	0.20	76	215
86	15.27	15.26	33.558	24.805	316.0	0.325	5.67	99.3	2.4	0.26	0.1	0.02	0.25	0.41	86	214
97	14.90	14.89	33.652	24.958	301.7	0.359	5.51	95.8	3.1	0.32	0.5	0.20	0.20	0.34	97	213
100 ISL	14.75	14.74	33.652	24.991	298.7	0.368	5.44	94.3	3.3	0.34	0.9	0.19	0.20	0.35	100	
104 A	14.51	14.49	33.643	25.035	294.5	0.380	5.35	92.3	3.7	0.38	1.7	0.18	0.19	0.36	104	212
114	13.78	13.76	33.628	25.176	281.2	0.409	5.17	87.9	5.0	0.53	4.0	0.05	0.15	0.26	114	211
123	12.88	12.86	33.589	25.328	266.9	0.434	4.98	83.1	6.9	0.71	6.8	0.02	0.12	0.22	124	210
125 ISL	12.66	12.64	33.584	25.367	263.2	0.439	4.93	81.9	7.4	0.75	7.5	0.02	0.11	0.21	126	
139	11.30	11.28	33.582	25.621	239.0	0.474	4.59	74.0	11.3	1.05	12.0	0.01	0.08	0.14	140	209
150 ISL	10.65	10.63	33.625	25.770	224.9	0.499	4.36	69.4	14.2	1.22	14.8	0.00	0.05	0.09	151	
164	10.10	10.08	33.699	25.923	210.6	0.530	4.13	64.9	17.6	1.38	17.6	0.00	0.02	0.05	165	208
194	9.22	9.20	33.858	26.193	185.4	0.589	4.00	61.7	22.8	1.55	20.7	0.00	0.00	0.02	195	207
200 ISL	9.11	9.09	33.880	26.227	182.1	0.600	3.91	60.2	24.0	1.60	21.4	0.00			201	
228	8.68	8.66	33.953	26.353	170.7	0.650	3.45	52.6	29.6	1.83	24.4	0.00			229	206
250 ISL	8.25	8.22	33.989	26.447	161.9	0.686	3.20	48.4	34.0	1.96	26.3	0.00			251	
268	7.90	7.87	34.010	26.515	155.6	0.715	2.99	44.8	37.7	2.06	27.7	0.00			269	205
300 ISL	7.48	7.45	34.039	26.599	147.9	0.764	2.43	36.1	44.2	2.30	30.5	0.00			302	
316	7.29	7.26	34.049	26.634	144.8	0.787	2.15	31.8	47.5	2.42	31.9	0.00			318	204
377	6.45	6.42	34.068	26.763	132.9	0.872	1.49	21.6	60.1	2.72	36.2	0.00			379	203
400 ISL	6.28	6.24	34.088	26.801	129.5	0.902	1.25	18.1	63.9	2.82	37.3	0.00			402	
441	6.07	6.03	34.129	26.861	124.2	0.954	0.89	12.8	69.9	2.96	38.8	0.00			444	202
500 ISL	5.73	5.69	34.172	26.937	117.4	1.025	0.62	8.8	77.8	3.09	40.3	0.00			503	
521	5.61	5.57	34.188	26.965	114.9	1.049	0.53	7.5	80.6	3.14	40.9	0.00			524	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 59.5 N	122 23.1 W	21/09/98	2253 UTC	4069 m	320 11 kn	330 04 06	1	1014.6 mb	18.2 c	15.0 c	27m	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	18.53	18.53	33.264	23.814	407.8	0.000	5.45	101.6	1.7	0.23	0.0	0.00	0.08	0.02	0	
1	18.53	18.53	33.264	23.814	407.9	0.004	5.45	101.6	1.7	0.23	0.0	0.00	0.08	0.02	1	222
1	18.54	18.54	33.262	23.810	408.2	0.004									1	224
1	18.54	18.54	33.263	23.810	408.2	0.004									1	223
10 ISL	18.47	18.47	33.266	23.830	406.6	0.041	5.45	101.5	1.6	0.22	0.0	0.00	0.08	0.02	10	
16	18.42	18.42	33.267	23.844	405.5	0.065	5.45	101.4	1.6	0.22	0.0	0.00	0.09	0.02	16	221
20 ISL	18.42	18.42	33.267	23.844	405.6	0.081	5.45	101.4	1.7	0.22	0.0	0.00	0.09	0.02	20	
30	18.41	18.40	33.266	23.846	405.8	0.122	5.46	101.5	1.8	0.23	0.0	0.00	0.10	0.03	30	220
46	18.40	18.39	33.271	23.853	405.7	0.187	5.46	101.5	1.6	0.22	0.1	0.00	0.11	0.04	46	219
50 ISL	17.82	17.81	33.313	24.027	389.2	0.203	5.59	102.8	1.7	0.22	0.1	0.00	0.13	0.04	50	
61	16.07	16.06	33.449	24.542	340.3	0.243	5.95	105.8	2.1	0.22	0.1	0.00	0.18	0.04	61	218
74	15.17	15.16	33.476	24.763	319.6	0.286									74	217
75	15.17	15.16	33.473	24.761	319.8	0.289	5.97	104.3	2.3	0.22	0.1	0.00	0.22	0.08	75	216
86	14.74	14.73	33.535	24.902	306.7	0.323	5.86	101.5	2.4	0.22	0.1	0.00	0.24	0.23	86	215
94	14.40	14.39	33.543	24.981	299.3	0.348	5.80	99.8	2.7	0.25	0.1	0.00	0.23	0.36	94	214
100 ISL	14.45	14.44	33.638	25.044	293.6	0.365	5.70	98.2	2.9	0.26	0.3	0.10	0.22	0.39	100	
105	14.49	14.47	33.736	25.111	287.3	0.380	5.57	96.1	3.0	0.27	0.4	0.17	0.20	0.41	105	212
105	14.50	14.48	33.737	25.110	287.5	0.380									105	213
114	13.40	13.38	33.682	25.296	269.8	0.405	5.22	88.1	5.2	0.51	4.0	0.04	0.17	0.21	114	211
124	12.28	12.26	33.628	25.474	252.9	0.431	4.90	80.7	8.1	0.78	8.2	0.01	0.11	0.17	125	210
125 ISL	12.20	12.18	33.625	25.487	251.7	0.434	4.88	80.3	8.3	0.80	8.5	0.01	0.11	0.17	126	
139	11.28	11.26	33.619	25.653	236.0	0.468	4.60	74.2	11.4	1.04	12.0	0.01	0.07	0.16	140	209
150 ISL	10.60	10.58	33.664	25.809	221.2	0.493	4.35	69.1	14.6	1.23	15.0	0.01	0.05	0.11	151	
163	9.94	9.92	33.738	25.980	205.1	0.521	4.09	64.1	18.3	1.41	18.1	0.01	0.03	0.04	164	208
195	9.26	9.24	33.874	26.199	184.8	0.583	3.94	60.9	22.8	1.57	20.9	0.00	0.00	0.02	196	207
200 ISL	9.16	9.14	33.892	26.229	182.0	0.592	3.88	59.8	23.8	1.60	21.4	0.00			201	
228	8.66	8.64	33.973	26.371	168.9	0.641	3.50	53.4	29.3	1.80	24.2	0.00			229	206
250 ISL	8.31	8.28	34.002	26.448	161.9	0.678	3.28	49.6	32.9	1.91	25.8	0.00			251	
268	8.03	8.00	34.011	26.497	157.4	0.706	3.14	47.2	35.6	1.99	26.9	0.00			269	205
300 ISL	7.47	7.44	34.007	26.575	150.2	0.756	3.00	44.5	40.4	2.10	28.6	0.00			302	
318	7.19	7.16	34.005	26.613	146.7	0.782	2.88	42.5	43.3	2.18	29.6	0.00			320	204
380	6.67	6.64	34.085	26.747	134.6	0.870	1.58	23.0	56.9	2.65	35.1	0.01			382	203
400 ISL	6.51	6.47	34.101	26.781	131.5	0.896	1.35	19.6	60.3	2.75	36.3	0.01			402	
437	6.20	6.16	34.127	26.843	126.0	0.944	1.04	15.0	66.5	2.89	38.1	0.01			440	202
500 ISL	5.59	5.55	34.178	26.959	115.2	1.020	0.65	9.2	79.2	3.09	40.7	0.01			503	
508	5.51	5.47	34.185	26.974	113.8	1.029	0.60	8.5	80.8	3.11	41.0	0.01			511	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 39.5 N	123 4.5 W	22/09/98	0524 UTC	4100 m	330 08 kn			1015.2 mb	18.0 c	14.5 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	18.99	18.99	33.548	23.915	398.1	0.000	5.38	101.3	2.0	0.21	0.1	0.00	0.07	0.01	0	
1	18.99	18.99	33.548	23.915	398.1	0.004	5.38	101.3	2.0	0.21	0.1	0.00	0.07	0.01	1	220
10 ISL	18.93	18.93	33.569	23.947	395.5	0.040	5.42	102.0	2.0	0.21	0.1	0.00	0.07	0.02	10	
15	18.89	18.89	33.584	23.969	393.6	0.059	5.44	102.3	2.0	0.21	0.1	0.00	0.07	0.02	15	219
20 ISL	18.89	18.89	33.589	23.973	393.4	0.079	5.42	101.9	2.0	0.21	0.1	0.00	0.07	0.02	20	
30	18.90	18.89	33.599	23.978	393.2	0.118	5.38	101.2	2.1	0.20	0.1	0.00	0.08	0.02	30	218
45	18.89	18.88	33.612	23.992	392.5	0.177	5.40	101.5	2.1	0.20	0.1	0.00	0.10	0.02	45	217
50 ISL	18.26	18.25	33.628	24.161	376.5	0.197	5.56	103.3	2.2	0.19	0.1	0.00	0.11	0.02	50	
60	16.90	16.89	33.696	24.540	340.6	0.232	5.86	106.1	2.3	0.18	0.1	0.00	0.14	0.03	60	216
75	16.33	16.32	33.853	24.794	316.9	0.282	5.75	103.1	2.5	0.17	0.1	0.00	0.18	0.10	75	215
85	16.41	16.40	33.951	24.851	311.8	0.313	5.66	101.7	2.5	0.17	0.1	0.00	0.18	0.15	85	214
96	16.28	16.26	33.997	24.917	305.9	0.347	5.54	99.3	2.6	0.18	0.1	0.00	0.21	0.33	96	213
100 ISL	16.10	16.08	33.980	24.945	303.3	0.359	5.55	99.1	2.6	0.18	0.1	0.01	0.24	0.37	100	
105	15.82	15.80	33.951	24.986	299.5	0.374	5.57	98.9	2.7	0.19	0.1	0.03	0.26	0.39	105	212
115	15.30	15.28	33.922	25.080	290.8	0.404	5.46	95.9	3.1	0.25	0.5	0.12	0.20	0.38	115	211
125	14.51	14.49	33.872	25.213	278.3	0.432	5.23	90.4	4.2	0.38	2.6	0.02	0.14	0.26	126	210
138	13.28	13.26	33.741	25.366	263.8	0.468	4.97	83.7	6.4	0.63	6.0	0.01	0.10	0.15	139	209
150 ISL	12.13	12.11	33.691	25.552	246.1	0.498	4.89	80.3	9.4	0.87	9.5	0.01	0.07	0.10	151	
164	10.97	10.95	33.693	25.767	225.7	0.531	4.80	76.9	13.1	1.12	13.3	0.01	0.04	0.08	165	208
193	9.81	9.79	33.786	26.040	200.0	0.593	4.14	64.7	18.5	1.36	17.5	0.01	0.02	0.03	194	207
200 ISL	9.54	9.52	33.817	26.109	193.6	0.607	3.98	61.9	20.7	1.46	19.0	0.01			201	
229	8.60	8.58	33.941	26.355	170.3	0.659	3.35	51.0	30.1	1.86	24.8	0.01			230	206
250 ISL	8.15	8.12	33.992	26.464	160.2	0.694	2.99	45.1	35.3	2.04	27.2	0.01			251	
268	7.88	7.85	34.019	26.525	154.6	0.723	2.74	41.1	38.9	2.15	28.6	0.01			269	205
300 ISL	7.57	7.54	34.048	26.593	148.5	0.771	2.42	36.0	43.3	2.30	30.3	0.01			302	
318	7.44	7.41	34.058	26.620	146.3	0.798	2.25	33.4	45.5	2.38	31.1	0.01			320	204
377	6.87	6.83	34.118	26.747	134.8	0.880	1.43	20.9	57.1	2.70	35.1	0.01			379	203
400 ISL	6.75	6.71	34.143	26.783	131.6	0.911	1.19	17.4	60.5	2.80	36.1	0.01			402	
438	6.57	6.53	34.183	26.839	126.8	0.960	0.88	12.8	65.6	2.94	37.5	0.01			441	202
500 ISL	6.11	6.07	34.236	26.941	117.6	1.036	0.54	7.8	75.0	3.11	39.5	0.00			503	
515	6.00	5.95	34.249	26.965	115.4	1.053	0.46	6.6	77.3	3.15	40.0	0.00			518	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 19.5 N	123 44.3 W	22/09/98	1059 UTC	4008 m	260 04 kn			1015.2 mb	18.7 C	14.6 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	19.19	19.19	33.751	24.020	388.2	0.000	5.42	102.6	1.8	0.20	0.0	0.00	0.08	0.01	0	
1	19.19	19.19	33.751	24.020	388.2	0.004	5.42	102.6	1.8	0.20	0.0	0.00	0.08	0.01	1	220
10 ISL	19.10	19.10	33.748	24.041	386.5	0.039	5.41	102.2	1.8	0.20	0.0	0.00	0.09	0.01	10	
14	19.05	19.05	33.746	24.052	385.6	0.054	5.41	102.1	1.8	0.20	0.0	0.00	0.09	0.01	14	219
20 ISL	19.03	19.03	33.747	24.058	385.2	0.077	5.41	102.1	1.8	0.20	0.0	0.00	0.09	0.01	20	
29	19.00	18.99	33.752	24.070	384.4	0.112	5.43	102.4	1.8	0.20	0.0	0.00	0.09	0.01	29	218
30 ISL	18.99	18.98	33.753	24.073	384.2	0.116	5.43	102.4	1.8	0.20	0.0	0.00	0.09	0.01	30	
44	18.89	18.88	33.763	24.107	381.5	0.169	5.49	103.3	1.9	0.20	0.0	0.00	0.11	0.02	44	217
50 ISL	18.52	18.51	33.799	24.227	370.2	0.192	5.60	104.7	1.9	0.19	0.0	0.00	0.11	0.03	50	
59	17.85	17.84	33.849	24.431	351.1	0.224	5.77	106.5	2.0	0.18	0.0	0.00	0.12	0.04	59	216
73	17.00	16.99	33.823	24.615	333.9	0.272	5.79	105.1	2.1	0.18	0.0	0.00	0.14	0.05	73	215
75 ISL	16.96	16.95	33.836	24.634	332.1	0.279	5.78	104.9	2.1	0.18	0.0	0.00	0.15	0.05	75	
84	16.83	16.82	33.904	24.717	324.5	0.309	5.73	103.7	2.2	0.17	0.0	0.00	0.18	0.08	84	214
94	16.57	16.55	33.940	24.806	316.4	0.341	5.66	102.0	2.4	0.17	0.0	0.00	0.25	0.15	94	213
100 ISL	16.47	16.45	33.964	24.848	312.6	0.359	5.62	101.1	2.4	0.17	0.0	0.00	0.24	0.22	100	
104	16.42	16.40	33.979	24.871	310.5	0.372	5.60	100.6	2.4	0.17	0.0	0.00	0.22	0.26	104	212
114	16.28	16.26	34.010	24.927	305.5	0.403	5.56	99.6	2.4	0.17	0.0	0.00	0.23	0.34	114	211
124	16.05	16.03	34.005	24.976	301.1	0.433	5.57	99.4	2.5	0.18	0.1	0.03	0.25	0.50	125	210
125 ISL	15.97	15.95	33.997	24.988	300.0	0.436	5.56	99.0	2.6	0.19	0.2	0.03	0.24	0.49	126	
140	14.43	14.41	33.851	25.214	278.6	0.479	5.24	90.4	4.2	0.40	2.7	0.02	0.13	0.27	141	209
150 ISL	13.47	13.45	33.771	25.351	265.6	0.507	5.06	85.5	5.8	0.57	5.1	0.01	0.10	0.18	151	
164	12.22	12.20	33.701	25.543	247.4	0.543	4.81	79.2	8.8	0.82	8.9	0.01	0.07	0.10	165	208
194	9.90	9.88	33.765	26.009	203.1	0.610	4.18	65.5	18.4	1.39	17.8	0.01	0.01	0.03	195	207
200 ISL	9.65	9.63	33.791	26.070	197.2	0.622	4.07	63.4	20.0	1.47	19.0	0.01			201	
228	8.92	8.90	33.905	26.277	177.9	0.675	3.62	55.5	26.7	1.73	23.0	0.01			229	206
250 ISL	8.51	8.48	33.961	26.385	167.9	0.713	3.30	50.2	31.1	1.90	25.3	0.01			251	
270	8.18	8.15	33.991	26.459	161.1	0.746	3.06	46.2	34.8	2.02	27.0	0.01			271	205
300 ISL	7.55	7.52	34.002	26.560	151.7	0.793	2.85	42.4	40.9	2.16	29.1	0.01			302	
320	7.17	7.14	34.005	26.616	146.4	0.822	2.70	39.8	44.9	2.25	30.4	0.01			322	204
381	6.68	6.65	34.071	26.735	135.8	0.908	1.73	25.2	56.4	2.62	34.8	0.01			383	203
400 ISL	6.56	6.52	34.098	26.773	132.4	0.934	1.45	21.1	60.1	2.73	35.9	0.01			402	
441	6.31	6.27	34.152	26.848	125.6	0.987	0.94	13.6	67.6	2.93	38.0	0.01			444	202
500 ISL	5.94	5.90	34.195	26.930	118.4	1.059	0.65	9.3	75.6	3.07	39.7	0.01			503	
519	5.82	5.78	34.209	26.956	116.0	1.081	0.56	8.0	78.2	3.12	40.3	0.01			522	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 29.0 N	117 45.8 W	19/09/98	1842 UTC	57 m	120 10 kn	100 01 10	2	1009.4 mb	18.9 C	17.2 C	13m	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	18.69	18.69	33.339	23.831	406.2	0.000	6.21	116.2	2.6	0.21	0.1	0.00	1.78	0.06	0	
1	18.71	18.71	33.335	23.823	406.9	0.004									1	209
1	18.71	18.71	33.342	23.828	406.4	0.004									1	210
1 A	18.69	18.69	33.339	23.831	406.2	0.004	6.21	116.2	2.6	0.21	0.1	0.00	1.78	0.06	1	208
9 A	18.44	18.44	33.318	23.878	402.0	0.036	6.41	119.3	2.8	0.20	0.1	0.00	2.49	0.06	9	207
10 ISL	18.19	18.19	33.317	23.938	396.3	0.040	6.39	118.4	2.8	0.20	0.1	0.00	2.39	0.08	10	
18 A	15.97	15.97	33.338	24.478	345.1	0.070	6.05	107.3	2.8	0.27	0.1	0.00	1.47	0.31	18	206
20 ISL	15.65	15.65	33.328	24.542	339.0	0.077	5.85	103.1	3.3	0.33	0.1	0.01	1.63	0.35	20	
28 A	14.83	14.83	33.317	24.713	322.9	0.103	5.19	90.0	5.2	0.53	0.2	0.05	2.07	0.42	28	205
30 ISL	14.70	14.70	33.351	24.767	317.8	0.110	5.24	90.6	5.0	0.51	0.4	0.07	1.70	0.40	30	
36 A	14.42	14.41	33.456	24.908	304.6	0.128	5.43	93.4	4.3	0.46	1.4	0.12	0.55	0.33	36	204
42	14.15	14.14	33.478	24.982	297.7	0.147	5.24	89.7	5.1	0.56	2.6	0.18	0.49	0.36	42	203
48 A	13.46	13.45	33.494	25.136	283.2	0.164	4.71	79.5	8.3	0.84	6.4	0.21	0.33	0.37	48	201
49	13.46	13.45	33.495	25.137	283.1	0.167									49	202

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 25.3 N	117 53.9 W	19/09/98	2042 UTC	625 m	170 08 kn	100 01 05	0	1008.5 mb	21.0 C	18.9 C	25m	0/8

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	21.04	21.04	33.421	23.283	458.5	0.000	5.67	110.8	1.5	0.16	0.1	0.00	1.35	0.04	0	
1		21.03	21.03	33.422	23.286	458.2	0.005									1	223
1		21.04	21.04	33.421	23.283	458.5	0.005	5.67	110.8	1.5	0.16	0.1	0.00	1.35	0.04	1	221
1		21.06	21.06	33.420	23.277	459.1	0.005									1	222
10		20.82	20.82	33.415	23.338	453.6	0.046	5.69	110.8	1.5	0.16	0.1	0.00	1.76	0.13	10	220
19		17.21	17.21	33.275	24.143	377.1	0.083	6.02	109.4	2.0	0.25	0.1	0.00	0.43	0.12	19	219
20	ISL	16.95	16.95	33.279	24.207	371.0	0.087	6.01	108.7	2.0	0.25	0.1	0.00	0.42	0.12	20	
29		15.45	15.45	33.366	24.616	332.3	0.118	5.94	104.3	2.4	0.28	0.1	0.00	0.34	0.14	29	218
30	ISL	15.39	15.39	33.375	24.636	330.4	0.122	5.93	104.0	2.4	0.28	0.1	0.00	0.34	0.15	30	
40		15.03	15.02	33.445	24.769	318.0	0.154	5.75	100.2	3.0	0.32	0.1	0.00	0.39	0.28	40	217
49		14.20	14.19	33.470	24.965	299.5	0.182	5.29	90.6	4.7	0.53	2.7	0.09	0.78	0.45	49	216
50	ISL	14.13	14.12	33.475	24.984	297.8	0.185	5.24	89.7	4.9	0.55	3.1	0.09	0.77	0.45	50	
60		13.51	13.50	33.525	25.150	282.1	0.214	4.72	79.8	7.2	0.79	6.9	0.13	0.49	0.43	60	215
70		12.90	12.89	33.569	25.307	267.5	0.241	4.27	71.3	9.8	1.01	10.5	0.07	0.26	0.44	70	214
75	ISL	12.66	12.65	33.589	25.369	261.6	0.255	4.06	67.4	11.2	1.11	12.0	0.06	0.21	0.40	75	
79		12.47	12.46	33.604	25.418	257.1	0.265	3.93	65.0	12.2	1.18	13.0	0.05	0.19	0.35	79	213
90		11.73	11.72	33.639	25.585	241.3	0.292	3.81	62.1	14.1	1.29	14.9	0.04	0.14	0.19	90	212
99		11.41	11.40	33.668	25.667	233.8	0.314	3.74	60.5	15.3	1.36	16.0	0.03	0.08	0.16	99	211
100	ISL	11.38	11.37	33.674	25.677	232.8	0.316	3.71	60.0	15.5	1.37	16.2	0.03	0.08	0.16	100	
119		10.88	10.87	33.800	25.865	215.3	0.359	3.04	48.7	20.8	1.68	20.2	0.03	0.02	0.09	120	210
125	ISL	10.74	10.72	33.839	25.921	210.1	0.371	2.87	45.8	22.2	1.75	21.2	0.03	0.02	0.07	126	
139		10.45	10.43	33.920	26.035	199.6	0.400	2.57	40.8	25.1	1.89	23.0	0.02	0.01	0.05	140	209
150	ISL	10.22	10.20	33.957	26.104	193.2	0.422	2.46	38.8	26.7	1.96	24.0	0.02	0.01	0.05	151	
169		9.89	9.87	34.010	26.201	184.3	0.458	2.34	36.7	29.0	2.06	25.4	0.02	0.01	0.05	170	208
199		9.62	9.60	34.130	26.340	171.7	0.511	1.97	30.7	32.9	2.23	27.2	0.02	0.01	0.06	200	207
200	ISL	9.61	9.59	34.131	26.343	171.5	0.513	1.97	30.7	33.0	2.23	27.2	0.02			201	
229		9.13	9.10	34.127	26.418	164.7	0.561	1.98	30.6	35.5	2.28	28.1	0.02			230	206
250	ISL	8.72	8.69	34.130	26.485	158.5	0.595	1.95	29.8	38.4	2.33	29.1	0.02			251	
266		8.42	8.39	34.137	26.537	153.8	0.620	1.89	28.7	40.9	2.38	29.9	0.02			268	205
300	ISL	7.99	7.96	34.170	26.628	145.5	0.671	1.57	23.6	46.5	2.53	31.6	0.02			302	
318		7.79	7.76	34.187	26.671	141.7	0.697	1.38	20.7	49.7	2.62	32.6	0.02			320	204
377		6.95	6.91	34.195	26.797	130.2	0.777	1.00	14.7	60.5	2.84	36.0	0.02			379	203
400	ISL	6.81	6.77	34.215	26.832	127.1	0.807	0.85	12.4	63.4	2.91	36.7	0.02			403	
436		6.66	6.62	34.250	26.880	123.0	0.852	0.63	9.2	67.5	3.01	37.6	0.02			439	202
500	ISL	6.18	6.14	34.292	26.976	114.3	0.928	0.40	5.8	76.6	3.15	39.4	0.02			503	
520		6.03	5.98	34.306	27.006	111.6	0.950	0.33	4.7	79.4	3.19	39.9	0.02			524	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 15.0 N	118 15.1 W	19/09/98	1243 UTC	356 m	130 02 kn			1007.6 mb	20.1 C	18.2 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	20.68	20.68	33.419	23.378	449.4	0.000	5.55	107.8	1.3	0.19	0.1	0.00	0.62	0.00	0	
1		20.68	20.68	33.419	23.378	449.4	0.004	5.55	107.8	1.3	0.19	0.1	0.00	0.62	0.00	1	218
9		20.50	20.50	33.406	23.416	446.1	0.040	5.65	109.4	1.2	0.19	0.1	0.00	0.79	0.02	9	217
10	ISL	20.47	20.47	33.404	23.423	445.5	0.045	5.66	109.5	1.2	0.19	0.1	0.00	0.81	0.02	10	
19		19.65	19.65	33.373	23.614	427.6	0.084	5.77	109.9	1.3	0.21	0.1	0.00	0.94	0.04	19	216
20	ISL	19.41	19.41	33.364	23.669	422.4	0.088	5.80	110.0	1.4	0.21	0.1	0.00	0.87	0.05	20	
28		17.37	17.37	33.330	24.147	376.9	0.120	6.06	110.5	1.9	0.25	0.1	0.00	0.30	0.09	28	215
30	ISL	17.04	17.04	33.339	24.232	368.9	0.128	6.06	109.8	2.0	0.25	0.1	0.00	0.31	0.10	30	
39		15.84	15.83	33.399	24.555	338.4	0.160	6.04	106.9	2.3	0.28	0.1	0.00	0.35	0.12	39	214
49		14.52	14.51	33.463	24.893	306.5	0.192	5.55	95.7	3.4	0.42	0.4	0.04	0.65	0.54	49	213
50	ISL	14.43	14.42	33.469	24.916	304.2	0.195	5.50	94.7	3.6	0.44	0.7	0.07	0.64	0.56	50	
59		13.74	13.73	33.512	25.093	287.6	0.221	4.99	84.7	5.6	0.69	4.7	0.30	0.60	0.71	59	212
69		12.98	12.97	33.555	25.280	270.0	0.249	4.40	73.5	8.9	0.97	9.7	0.09	0.33	0.42	69	211
75	ISL	12.79	12.78	33.572	25.331	265.3	0.265	4.26	70.9	9.6	1.04	10.8	0.08	0.28	0.45	75	
78		12.70	12.69	33.583	25.357	262.9	0.273	4.19	69.6	10.1	1.07	11.3	0.07	0.26	0.47	78	210
88		11.98	11.97	33.672	25.564	243.3	0.299	3.55	58.1	14.5	1.38	15.8	0.03	0.13	0.22	88	209
99		11.33	11.32	33.694	25.702	230.4	0.325	3.50	56.5	16.9	1.47	17.3	0.02	0.06	0.13	99	208
100	ISL	11.27	11.26	33.697	25.715	229.2	0.327	3.49	56.3	17.1	1.48	17.5	0.02	0.06	0.12	100	
118		10.29	10.28	33.795	25.964	205.7	0.366	3.18	50.2	21.7	1.69	20.8	0.02	0.02	0.07	119	207
125	ISL	10.13	10.12	33.855	26.039	198.8	0.380	2.97	46.8	23.6	1.79	22.1	0.02	0.01	0.06	126	
139		9.96	9.94	33.968	26.156	187.9	0.407	2.56	40.2	27.2	1.98	24.4	0.02	0.00	0.05	140	206
150	ISL	9.78	9.76	34.014	26.222	181.9	0.428	2.37	37.1	29.2	2.07	25.5	0.03	0.00	0.05	151	
168		9.47	9.45	34.051	26.303	174.5	0.460	2.22	34.5	31.7	2.15	26.6	0.05	0.01	0.05	169	205
198		8.92	8.90	34.059	26.398	165.9	0.511	2.27	34.8	34.3	2.20	27.7	0.03	0.00	0.04	199	204
200	ISL	8.89	8.87	34.060	26.403	165.4	0.514	2.27	34.8	34.5	2.20	27.8	0.03			201	
233		8.42	8.40	34.089	26.499	156.7	0.567	2.17	32.9	38.4	2.28	29.2	0.03			234	203
250	ISL	8.23	8.20	34.102	26.538	153.3	0.594	2.05	31.0	40.6	2.34	30.0	0.03			251	
274		8.01	7.98	34.120	26.586	149.1	0.630	1.86	28.0	43.7	2.43	31.0	0.02			276	202
300	ISL	7.82	7.79	34.141	26.630	145.2	0.668	1.67	25.0	46.9	2.52	32.0	0.02			302	
330		7.61	7.58	34.167	26.682	140.8	0.711	1.45	21.6	50.5	2.62	33.1	0.03			332	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 11.0 N	118 23.2 W	19/09/98	0943 UTC	1168 m	230 02 kn			1008.4 mb	19.6 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	21.42	21.42	33.439	23.193	467.0	0.000	5.44	107.1	1.4	0.18	0.1	0.00	0.77	0.05	0	
1	21.42	21.42	33.439	23.193	467.1	0.005	5.44	107.1	1.4	0.18	0.1	0.00	0.77	0.05	1	220
10 ISL	20.92	20.92	33.416	23.312	456.1	0.046	5.51	107.5	1.5	0.19	0.1	0.00	0.81	0.04	10	
15	20.65	20.65	33.404	23.375	450.2	0.069	5.61	108.9	1.5	0.20	0.1	0.00	0.84	0.04	15	219
20 ISL	19.22	19.22	33.346	23.704	419.0	0.091	5.81	109.8	1.6	0.22	0.1	0.00	0.65	0.05	20	
29	16.53	16.53	33.307	24.327	359.9	0.126	6.13	109.9	1.9	0.25	0.1	0.00	0.30	0.07	29	218
30 ISL	16.37	16.37	33.309	24.365	356.2	0.129	6.12	109.4	1.9	0.25	0.1	0.00	0.30	0.07	30	
44	15.10	15.09	33.360	24.688	325.8	0.177	5.98	104.3	2.3	0.31	0.1	0.00	0.28	0.11	44	217
50 ISL	14.86	14.85	33.390	24.764	318.8	0.196	5.87	101.9	2.7	0.34	0.1	0.00	0.36	0.24	50	
55	14.63	14.62	33.422	24.838	311.9	0.212	5.78	99.9	3.0	0.37	0.1	0.00	0.45	0.38	55	216
64	13.64	13.63	33.510	25.112	285.9	0.239	4.82	81.7	6.7	0.75	6.1	0.16	0.64	0.67	64	215
74	13.00	12.99	33.557	25.278	270.3	0.267	4.44	74.2	8.7	0.94	9.5	0.08	0.40	0.50	74	214
75 ISL	12.91	12.90	33.561	25.299	268.4	0.269	4.41	73.6	9.0	0.96	9.8	0.07	0.38	0.48	75	
85	11.98	11.97	33.597	25.506	248.8	0.295	4.13	67.6	12.1	1.16	13.1	0.04	0.19	0.30	85	213
94	11.45	11.44	33.632	25.632	237.0	0.317	3.93	63.6	14.6	1.31	15.4	0.03	0.12	0.23	94	212
100 ISL	11.16	11.15	33.657	25.704	230.2	0.331	3.79	61.0	16.1	1.39	16.7	0.03	0.08	0.18	100	
108	10.82	10.81	33.694	25.793	221.8	0.349	3.60	57.5	17.9	1.48	18.2	0.02	0.05	0.11	108	211
124	10.26	10.25	33.784	25.961	206.2	0.384	3.31	52.3	21.5	1.66	20.8	0.01	0.02	0.06	125	210
125 ISL	10.23	10.22	33.789	25.970	205.3	0.386	3.29	51.9	21.7	1.67	20.9	0.01	0.02	0.06	126	
144	9.85	9.83	33.876	26.103	193.1	0.423	2.97	46.5	25.0	1.84	23.2	0.01	0.00	0.05	145	209
150 ISL	9.82	9.80	33.914	26.137	189.9	0.435	2.81	44.0	26.1	1.90	23.9	0.01	0.00	0.05	151	
169	9.74	9.72	34.025	26.238	180.8	0.470	2.34	36.6	29.5	2.08	25.8	0.01	0.00	0.05	170	208
199	9.09	9.07	34.089	26.394	166.3	0.522	2.20	33.9	34.2	2.20	27.8	0.01	0.01	0.03	200	207
200 ISL	9.07	9.05	34.089	26.397	166.0	0.524	2.20	33.9	34.3	2.20	27.9	0.01			201	
229	8.46	8.44	34.088	26.492	157.4	0.571	2.17	33.0	38.0	2.27	29.2	0.01			230	206
250 ISL	8.29	8.26	34.110	26.536	153.6	0.603	2.02	30.6	40.3	2.34	30.0	0.01			251	
269	8.20	8.17	34.132	26.567	150.9	0.632	1.87	28.3	42.4	2.40	30.6	0.01			271	205
300 ISL	7.92	7.89	34.144	26.618	146.5	0.678	1.73	26.0	45.8	2.48	31.7	0.01			302	
319	7.73	7.70	34.149	26.650	143.6	0.706	1.64	24.5	48.1	2.54	32.4	0.01			321	204
377	7.15	7.11	34.191	26.766	133.2	0.786	1.12	16.5	57.7	2.78	35.2	0.01			379	203
400 ISL	6.91	6.87	34.197	26.804	129.8	0.817	0.98	14.4	61.3	2.85	36.2	0.01			403	
437	6.56	6.52	34.211	26.862	124.5	0.864	0.80	11.6	66.7	2.95	37.6	0.01			440	202
500 ISL	6.26	6.22	34.286	26.961	115.8	0.939	0.47	6.8	74.8	3.10	39.1	0.01			503	
519	6.17	6.12	34.309	26.991	113.2	0.961	0.37	5.3	77.3	3.15	39.5	0.01			523	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 55.8 N	118 56.2 W	19/09/98	0437 UTC	1697 m	290 15 kn			1009.6 mb	18.9 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	19.73	19.73	33.460	23.659	422.6	0.000	5.44	103.8	2.5	0.21	0.0	0.00	0.31	0.06	0	
1	19.73	19.73	33.460	23.659	422.6	0.004	5.44	103.8	2.5	0.21	0.0	0.00	0.31	0.06	1	220
10 ISL	19.44	19.44	33.439	23.718	417.3	0.042	5.54	105.2	2.5	0.23	0.0	0.00	0.32	0.05	10	
15	19.28	19.28	33.427	23.750	414.4	0.063	5.67	107.3	2.5	0.24	0.0	0.00	0.33	0.05	15	219
20 ISL	17.83	17.83	33.392	24.084	382.7	0.083	5.90	108.6	2.9	0.27	0.0	0.00	0.39	0.12	20	
28	15.38	15.38	33.392	24.651	328.9	0.111	6.19	108.6	3.7	0.33	0.0	0.00	0.54	0.26	28	218
30 ISL	15.09	15.09	33.397	24.719	322.5	0.118	6.16	107.4	4.0	0.35	0.3	0.01	0.63	0.31	30	
44	13.97	13.96	33.428	24.981	297.9	0.161	5.64	96.2	6.0	0.56	3.0	0.09	1.06	0.56	44	217
50 ISL	13.58	13.57	33.441	25.071	289.4	0.179	5.41	91.5	6.7	0.66	4.5	0.15	0.94	0.57	50	
55	13.32	13.31	33.451	25.131	283.8	0.193	5.22	87.8	7.2	0.73	5.7	0.19	0.79	0.58	55	216
65	13.03	13.02	33.475	25.208	276.7	0.221	4.95	82.8	8.3	0.82	7.3	0.22	0.60	0.60	65	215
74	12.37	12.36	33.546	25.392	259.4	0.245	4.38	72.3	11.4	1.08	11.6	0.12	0.42	0.50	74	214
75 ISL	12.27	12.26	33.555	25.418	256.9	0.248	4.32	71.1	11.8	1.11	12.1	0.11	0.39	0.48	75	
85	11.26	11.25	33.641	25.673	232.8	0.272	3.75	60.5	16.2	1.40	16.6	0.03	0.15	0.27	85	213
94	10.74	10.73	33.704	25.815	219.5	0.293	3.45	55.0	19.7	1.56	19.1	0.01	0.07	0.15	94	212
100 ISL	10.46	10.45	33.743	25.894	212.0	0.306	3.30	52.3	21.4	1.65	20.4	0.01	0.04	0.15	100	
110	10.09	10.08	33.799	26.001	202.0	0.326	3.10	48.8	23.6	1.76	22.1	0.01	0.02	0.15	111	211
125	9.68	9.67	33.859	26.117	191.2	0.356	2.88	44.9	26.5	1.89	23.8	0.01	0.01	0.08	126	210
145	9.31	9.29	33.935	26.237	180.1	0.393	2.63	40.7	29.6	2.01	25.7	0.01	0.01	0.06	146	209
150 ISL	9.21	9.19	33.955	26.269	177.2	0.402	2.56	39.5	30.5	2.04	26.2	0.01	0.01	0.06	151	
168	8.89	8.87	34.020	26.371	167.8	0.433	2.33	35.7	33.8	2.16	27.7	0.01	0.00	0.07	169	208
199	8.56	8.54	34.067	26.460	159.9	0.484	2.17	33.0	37.2	2.26	28.9	0.01	0.01	0.06	200	207
200 ISL	8.55	8.53	34.069	26.463	159.6	0.485	2.16	32.9	37.3	2.26	28.9	0.01			201	
230	8.31	8.29	34.119	26.539	152.8	0.532	1.88	28.5	41.2	2.40	30.3	0.01			231	206
250 ISL	8.13	8.10	34.137	26.581	149.2	0.562	1.76	26.6	43.4	2.45	31.0	0.01			251	
269	7.96	7.93	34.150	26.616	146.1	0.590	1.66	24.9	45.6	2.50	31.7	0.01			271	205
300 ISL	7.66	7.63	34.175	26.680	140.4	0.635	1.39	20.7	50.2	2.63	33.1	0.01			302	
320	7.46	7.43	34.188	26.719	136.9	0.663	1.22	18.1	53.3	2.71	34.0	0.01			322	204
380	6.84	6.80	34.202	26.817	128.2	0.742	1.01	14.8	62.3	2.89	36.5	0.01			382	203
400 ISL	6.70	6.66	34.217	26.848	125.4	0.767	0.85	12.4	65.0	2.95	37.2	0.01			403	
434	6.50	6.46	34.245	26.897	121.2	0.809	0.59	8.6	69.2	3.03	38.2	0.01			437	202
500 ISL	6.22	6.18	34.291	26.970	114.9	0.887	0.43	6.2	75.7	3.14	39.3	0.01			503	
515	6.16	6.11	34.302	26.987	113.5	0.904	0.39	5.6	77.2	3.17	39.6	0.01			519	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 38.7 N	119 28.9 W	18/09/98	2253 UTC	1310 m	310 20 kn	310 07 06	0	1012.3 mb	19.7 C	17.9 C	21m	0/8	

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	19.73	19.73	33.443	23.646	423.8	0.000	5.43	103.6	2.4	0.22	0.1	0.00	0.32	0.05	0	
1		19.73	19.73	33.443	23.646	423.8	0.004	5.43	103.6	2.4	0.22	0.1	0.00	0.32	0.05	1	220
10		19.72	19.72	33.444	23.650	423.8	0.042	5.44	103.8	2.3	0.22	0.1	0.00	0.32	0.06	10	219
20		17.14	17.14	33.321	24.195	372.1	0.082	5.72	103.8	2.5	0.27	0.1	0.00	0.53	0.24	20	218
30	ISL	15.30	15.30	33.343	24.631	330.8	0.117	5.65	98.9	3.8	0.39	1.2	0.06	0.91	0.45	30	
31		15.17	15.17	33.348	24.663	327.8	0.121	5.64	98.5	3.9	0.40	1.3	0.07	0.94	0.47	31	217
41		14.67	14.66	33.352	24.775	317.4	0.153	5.48	94.7	4.8	0.49	2.5	0.13	0.67	0.50	41	216
50		13.85	13.84	33.510	25.069	289.6	0.180	4.99	84.9	6.1	0.67	4.7	0.17	0.38	0.44	50	215
61		12.69	12.68	33.525	25.313	266.6	0.211	4.72	78.4	8.9	0.87	8.7	0.05	0.20	0.35	61	214
70		12.40	12.39	33.545	25.385	259.9	0.234	4.61	76.1	9.7	0.93	9.8	0.05	0.15	0.35	70	213
75	ISL	11.97	11.96	33.563	25.481	250.9	0.247	4.43	72.5	11.4	1.05	11.6	0.04	0.12	0.31	75	
84		11.19	11.18	33.606	25.658	234.2	0.269	4.08	65.7	14.8	1.28	15.1	0.03	0.08	0.21	84	212
99		10.81	10.80	33.671	25.777	223.2	0.303	3.75	59.9	17.7	1.43	17.4	0.02	0.06	0.13	99	211
100	ISL	10.77	10.76	33.675	25.787	222.2	0.306	3.74	59.7	17.9	1.44	17.5	0.02	0.06	0.13	100	
119		10.07	10.06	33.758	25.973	204.9	0.346	3.54	55.7	21.1	1.59	20.1	0.04	0.02	0.08	120	210
125	ISL	9.96	9.95	33.783	26.011	201.4	0.358	3.43	53.8	22.1	1.64	20.8	0.04	0.02	0.07	126	
139		9.76	9.74	33.842	26.091	194.0	0.386	3.16	49.4	24.6	1.77	22.4	0.02	0.01	0.05	140	209
150	ISL	9.50	9.48	33.896	26.176	186.1	0.407	2.98	46.3	27.0	1.87	23.8	0.01	0.01	0.05	151	
169		9.00	8.98	33.977	26.320	172.7	0.441	2.74	42.1	31.2	2.01	25.9	0.01	0.00	0.04	170	208
199		8.32	8.30	34.015	26.456	160.2	0.491	2.66	40.3	35.9	2.12	27.8	0.01	0.00	0.03	200	207
200	ISL	8.32	8.30	34.020	26.460	159.8	0.493	2.63	39.8	36.1	2.13	27.9	0.01			201	
229		8.30	8.28	34.131	26.550	151.8	0.538	1.88	28.5	41.8	2.39	30.2	0.01			230	206
250	ISL	7.99	7.96	34.120	26.588	148.4	0.569	1.91	28.7	44.2	2.41	31.0	0.01			251	
267		7.70	7.67	34.099	26.614	146.1	0.594	1.93	28.8	45.9	2.43	31.5	0.01			269	205
300	ISL	7.51	7.48	34.142	26.676	140.7	0.642	1.55	23.1	50.5	2.58	33.0	0.01			302	
318		7.44	7.41	34.173	26.710	137.7	0.667	1.30	19.3	53.2	2.68	33.8	0.01			320	204
378		6.85	6.81	34.203	26.816	128.2	0.746	0.90	13.2	62.2	2.88	36.3	0.01			380	203
400	ISL	6.74	6.70	34.217	26.843	126.0	0.774	0.78	11.4	64.6	2.93	36.9	0.01			403	
437		6.58	6.54	34.242	26.884	122.5	0.820	0.62	9.0	68.5	3.01	37.8	0.01			440	202
500	ISL	6.12	6.08	34.284	26.977	114.1	0.895	0.42	6.1	76.8	3.14	39.5	0.01			503	
519		5.98	5.93	34.297	27.006	111.6	0.916	0.36	5.2	79.3	3.18	40.0	0.01			523	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 24.4 N	119 57.8 W	18/09/98	1801 UTC	866 m	310 22 kn	310 08 08	1	1015.7 mb	18.4 C	16.8 C	21m	2/8	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	18.01	18.01	33.262	23.940	395.8	0.000	5.54	102.2	2.0	0.24	0.1	0.00	0.22	0.05	0	
1	A	18.01	18.01	33.262	23.940	395.8	0.004	5.54	102.2	2.0	0.24	0.1	0.00	0.22	0.05	1	222
1		18.01	18.01	33.261	23.939	395.9	0.004									1	224
2		18.01	18.01	33.261	23.939	395.9	0.008									2	223
10	ISL	18.01	18.01	33.264	23.942	395.9	0.040	5.54	102.2	1.9	0.24	0.1	0.00	0.23	0.06	10	
16	A	18.01	18.01	33.265	23.943	396.0	0.063	5.54	102.2	1.9	0.24	0.1	0.00	0.24	0.07	16	221
20	ISL	17.86	17.86	33.259	23.975	393.1	0.079	5.56	102.3	1.9	0.24	0.1	0.00	0.27	0.08	20	
30	ISL	17.48	17.47	33.244	24.055	385.8	0.118	5.64	103.0	2.0	0.26	0.1	0.00	0.33	0.12	30	
31	A	17.44	17.43	33.243	24.064	385.0	0.122	5.65	103.1	2.0	0.26	0.1	0.00	0.34	0.12	31	220
45	A	15.35	15.34	33.243	24.544	339.6	0.173	5.77	101.0	2.7	0.31	0.3	0.02	0.81	0.58	45	219
50	ISL	14.92	14.91	33.255	24.646	329.9	0.189	5.74	99.7	2.9	0.34	0.5	0.03	0.84	0.61	50	
51		14.86	14.85	33.256	24.660	328.6	0.193	5.73	99.4	2.9	0.34	0.5	0.03	0.85	0.61	51	218
58	A	14.68	14.67	33.242	24.688	326.2	0.216	5.74	99.2	2.9	0.35	0.6	0.04	0.77	0.62	58	216
58		14.70	14.69	33.230	24.675	327.5	0.216									58	217
68		13.83	13.82	33.303	24.914	304.9	0.247	5.43	92.2	4.2	0.49	2.5	0.13	0.45	0.50	68	215
75	ISL	13.21	13.20	33.447	25.151	282.5	0.268	5.04	84.6	6.5	0.69	5.7	0.08	0.26	0.39	75	
78	A	12.94	12.93	33.506	25.250	273.1	0.276	4.86	81.1	7.6	0.78	7.3	0.05	0.20	0.35	78	214
86		12.20	12.19	33.540	25.420	257.0	0.297	4.50	74.0	10.4	1.00	10.7	0.03	0.13	0.26	86	213
94		11.84	11.83	33.597	25.532	246.5	0.317	4.16	67.9	12.7	1.16	13.1	0.02	0.10	0.25	94	212
100	ISL	11.49	11.48	33.644	25.634	236.9	0.332	3.85	62.4	15.1	1.31	15.3	0.01	0.08	0.19	100	
109		10.98	10.97	33.712	25.779	223.3	0.353	3.44	55.2	18.5	1.53	18.3	0.01	0.06	0.10	109	211
125		10.44	10.43	33.789	25.934	208.8	0.387	3.12	49.5	21.9	1.71	20.9	0.01	0.02	0.05	126	210
145		10.08	10.06	33.900	26.083	195.1	0.428	2.67	42.0	25.7	1.91	23.5	0.01	0.00	0.03	146	209
150	ISL	10.00	9.98	33.921	26.113	192.3	0.437	2.61	41.0	26.5	1.94	23.9	0.01	0.00	0.04	151	
169		9.66	9.64	33.981	26.217	182.7	0.473	2.48	38.7	29.2	2.04	25.3	0.01	0.00	0.06	170	208
198		8.91	8.89	34.035	26.380	167.5	0.524	2.45	37.6	33.5	2.14	27.1	0.01	0.00	0.04	199	207
200	ISL	8.88	8.86	34.041	26.390	166.7	0.527	2.42	37.1	33.8	2.15	27.2	0.01			201	
229		8.57	8.55	34.120	26.500	156.6	0.574	2.00	30.5	38.7	2.33	29.3	0.01			230	206
250	ISL	8.19	8.16	34.136	26.571	150.2	0.606	1.82	27.5	42.8	2.43	30.7	0.01			251	
269		7.85	7.82	34.137	26.622	145.4	0.634	1.71	25.6	46.3	2.51	31.8	0.01			271	205
300	ISL	7.55	7.52	34.141	26.669	141.3	0.679	1.58	23.5	49.9	2.59	32.9	0.01			302	
319		7.42	7.39	34.144	26.690	139.6	0.705	1.50	22.3	51.8	2.63	33.5	0.01			321	204
376		7.01	6.97	34.195	26.788	131.0	0.782	1.01	14.9	59.8	2.84	35.7	0.01			378	203
400	ISL	6.78	6.74	34.208	26.830	127.2	0.813	0.87	12.7	63.5	2.92	36.7	0.01			403	
437		6.43	6.39	34.227	26.892	121.6	0.860	0.70	10.2	69.2	3.02	38.2	0.01			440	202
500	ISL	6.06	6.02	34.270	26.974	114.4	0.934	0.45	6.5	77.2	3.16	39.8	0.01			503	
516		5.96	5.91	34.281	26.995	112.5	0.952	0.39	5.6	79.2	3.19	40.2	0.01			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 4.8 N	120 38.6 W	18/09/98	0839 UTC	3819 m	330 23 kn			1015.6 mb	17.9 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	18.86	18.86	33.371	23.813	407.9	0.000	5.45	102.3	1.9	0.22	0.0	0.00	0.28	0.05	0	
1	18.86	18.86	33.371	23.813	407.9	0.004	5.45	102.3	1.9	0.22	0.0	0.00	0.28	0.05	1	220
10 ISL	18.86	18.86	33.370	23.813	408.3	0.041	5.46	102.5	1.9	0.23	0.0	0.00	0.27	0.05	10	
15	18.86	18.86	33.370	23.813	408.5	0.061	5.47	102.7	1.9	0.23	0.0	0.00	0.26	0.05	15	219
20 ISL	18.67	18.67	33.358	23.852	404.9	0.082	5.60	104.7	2.0	0.24	0.0	0.00	0.32	0.07	20	
30	17.81	17.80	33.324	24.037	387.5	0.121	5.87	107.9	2.2	0.27	0.0	0.00	0.44	0.15	30	218
45	15.01	15.00	33.320	24.677	326.9	0.175	5.96	103.7	2.8	0.33	0.0	0.00	0.46	0.34	45	217
50 ISL	14.62	14.61	33.359	24.791	316.2	0.191	5.82	100.5	3.1	0.37	0.2	0.04	0.57	0.43	50	
54	14.41	14.40	33.391	24.860	309.6	0.203	5.68	97.7	3.5	0.41	0.6	0.08	0.63	0.49	54	216
65	13.79	13.78	33.449	25.035	293.3	0.237	5.25	89.2	5.3	0.60	3.9	0.30	0.35	0.49	65	215
75	13.47	13.46	33.475	25.120	285.4	0.265	5.10	86.1	6.3	0.68	5.4	0.20	0.31	0.36	75	214
85	13.10	13.09	33.505	25.218	276.4	0.294	4.87	81.6	7.4	0.79	7.2	0.09	0.25	0.45	85	213
96	12.23	12.22	33.542	25.416	257.7	0.323	4.56	75.0	10.5	0.99	10.6	0.04	0.16	0.25	96	212
100 ISL	12.01	12.00	33.558	25.470	252.6	0.333	4.46	73.0	11.3	1.05	11.6	0.04	0.14	0.22	100	
107	11.65	11.64	33.590	25.563	243.9	0.351	4.28	69.6	12.7	1.16	13.2	0.03	0.10	0.18	107	211
123	10.64	10.63	33.695	25.826	219.0	0.388	3.68	58.6	18.3	1.48	18.0	0.02	0.05	0.08	124	210
125 ISL	10.56	10.55	33.706	25.849	216.9	0.392	3.64	57.8	18.8	1.51	18.4	0.02	0.04	0.08	126	
145	9.92	9.90	33.794	26.027	200.3	0.434	3.40	53.3	22.4	1.68	21.0	0.01	0.01	0.05	146	209
150 ISL	9.77	9.75	33.809	26.064	196.9	0.444	3.38	52.8	23.2	1.71	21.5	0.01	0.01	0.05	151	
169	9.25	9.23	33.865	26.193	184.8	0.480	3.28	50.7	26.4	1.81	23.3	0.01	0.01	0.04	170	208
200	8.71	8.69	33.987	26.374	168.1	0.535	2.82	43.1	32.5	2.04	26.4	0.01	0.00	0.03	201	207
230	8.28	8.26	34.044	26.485	158.0	0.583	2.50	37.8	37.6	2.19	28.4	0.01			231	206
250 ISL	8.00	7.97	34.062	26.541	152.9	0.615	2.32	34.9	40.8	2.28	29.6	0.01			251	
270	7.76	7.73	34.079	26.590	148.5	0.645	2.12	31.7	44.0	2.37	30.7	0.01			272	205
300 ISL	7.57	7.54	34.135	26.662	142.1	0.688	1.64	24.4	49.3	2.56	32.6	0.01			302	
319	7.48	7.45	34.169	26.702	138.6	0.715	1.34	19.9	52.6	2.67	33.8	0.01			321	204
379	7.00	6.96	34.200	26.794	130.5	0.796	0.97	14.3	60.4	2.85	36.0	0.01			381	203
400 ISL	6.75	6.71	34.199	26.827	127.5	0.823	0.91	13.3	63.6	2.91	36.9	0.01			402	
440	6.26	6.22	34.199	26.892	121.5	0.872	0.81	11.7	70.0	3.01	38.6	0.01			443	202
500 ISL	5.79	5.75	34.238	26.982	113.3	0.943	0.50	7.1	79.6	3.16	40.5	0.01			503	
513	5.69	5.65	34.247	27.002	111.5	0.958	0.43	6.1	81.7	3.19	40.9	0.01			516	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 45.0 N	121 19.3 W	18/09/98	0239 UTC	3721 m	330 19 kn	330 06 05	1	1014.8 mb	17.5 C	16.1 C		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	18.00	18.00	33.173	23.874	402.0	0.000	5.49	101.2	2.2	0.23	0.1	0.00	0.12	0.03	0	
1	18.00	18.00	33.173	23.874	402.1	0.004	5.49	101.2	2.2	0.23	0.1	0.00	0.12	0.03	1	220
10 ISL	18.01	18.01	33.176	23.875	402.4	0.040	5.48	101.1	2.1	0.23	0.1	0.00	0.13	0.02	10	
15	18.01	18.01	33.178	23.876	402.4	0.060	5.48	101.1	2.0	0.23	0.1	0.00	0.13	0.02	15	219
20 ISL	18.00	18.00	33.177	23.878	402.4	0.080	5.48	101.1	2.0	0.23	0.1	0.00	0.13	0.03	20	
30	17.99	17.98	33.175	23.880	402.6	0.121	5.48	101.0	2.0	0.24	0.1	0.00	0.12	0.04	30	218
44	17.35	17.34	33.198	24.052	386.6	0.176	5.66	103.1	2.0	0.25	0.1	0.00	0.40	0.14	44	217
50 ISL	16.51	16.50	33.214	24.261	366.8	0.199	5.81	104.1	2.1	0.26	0.1	0.00	0.38	0.20	50	
55	15.86	15.85	33.240	24.428	350.9	0.216	5.91	104.6	2.2	0.26	0.1	0.00	0.35	0.24	55	216
65	15.59	15.58	33.320	24.551	339.6	0.251	5.89	103.7	2.2	0.25	0.1	0.00	0.35	0.24	65	215
75	15.20	15.19	33.333	24.647	330.7	0.285	5.86	102.4	2.3	0.26	0.1	0.00	0.27	0.28	75	214
85	14.89	14.88	33.427	24.787	317.6	0.317	5.71	99.2	2.5	0.26	0.1	0.05	0.25	0.36	85	213
94	14.44	14.43	33.512	24.949	302.4	0.345	5.49	94.5	3.4	0.34	1.0	0.19	0.20	0.33	94	212
100 ISL	14.11	14.10	33.545	25.044	293.5	0.363	5.36	91.7	4.0	0.41	2.1	0.15	0.18	0.31	100	
110	13.41	13.39	33.569	25.206	278.2	0.391	5.15	86.8	5.6	0.57	4.6	0.03	0.15	0.26	110	211
125	11.79	11.77	33.573	25.524	248.1	0.431	4.74	77.3	9.8	0.93	10.2	0.02	0.09	0.15	126	210
145	10.43	10.41	33.690	25.859	216.4	0.477	4.35	68.9	15.6	1.26	15.6	0.01	0.05	0.08	146	209
150 ISL	10.22	10.20	33.714	25.914	211.2	0.488	4.31	68.0	16.5	1.30	16.4	0.01	0.04	0.07	151	
170	9.61	9.59	33.801	26.084	195.3	0.529	4.12	64.1	20.1	1.45	18.9	0.01	0.01	0.04	171	208
200 ISL	8.91	8.89	33.938	26.304	174.8	0.584	3.33	51.1	28.6	1.83	24.1	0.01	0.00	0.04	201	
201	8.89	8.87	33.942	26.311	174.2	0.586	3.30	50.6	28.9	1.84	24.3	0.01	0.00	0.04	202	207
231	8.42	8.40	34.005	26.433	162.9	0.636	2.99	45.4	33.9	1.99	26.6	0.00			232	206
250 ISL	8.17	8.14	34.023	26.485	158.2	0.667	2.85	43.0	36.5	2.07	27.7	0.00			251	
268	7.93	7.90	34.028	26.525	154.7	0.695	2.74	41.1	38.9	2.14	28.6	0.00			269	205
300 ISL	7.35	7.32	34.017	26.600	147.7	0.743	2.63	38.9	43.8	2.25	30.2	0.00			302	
320	7.01	6.98	34.012	26.643	143.7	0.773	2.52	37.0	47.3	2.33	31.3	0.00			322	204
377	6.50	6.47	34.068	26.756	133.5	0.852	1.59	23.1	59.1	2.69	35.8	0.00			379	203
400 ISL	6.34	6.30	34.084	26.790	130.5	0.882	1.35	19.5	62.7	2.79	36.9	0.00			402	
435	6.11	6.07	34.107	26.838	126.3	0.927	1.08	15.5	67.8	2.90	38.3	0.00			438	202
500 ISL	5.65	5.61	34.157	26.935	117.5	1.006	0.71	10.1	78.1	3.07	40.4	0.00			503	
513	5.56	5.52	34.167	26.954	115.8	1.021	0.64	9.1	80.1	3.11	40.8	0.00			516	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 25.0 N	121 59.6 W	17/09/98	1910 UTC	3852 m	340 15 kn	330 04 07	2	1016.9 mb	17.9 C	15.9 C	26m	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	18.08	18.08	33.184	23.863	403.1	0.000	5.47	101.0	2.1	0.25	0.0	0.00	0.11	0.04	0	
1	A	18.08	18.08	33.184	23.863	403.1	0.004	5.47	101.0	2.1	0.25	0.0	0.00	0.11	0.04	1	222
1		18.08	18.08	33.174	23.856	403.8	0.004									1	224
1		18.08	18.08	33.175	23.856	403.8	0.004									1	223
9		18.07	18.07	33.177	23.861	403.7	0.036	5.47	101.0	1.9	0.25	0.0	0.00	0.13	0.03	9	221
10	ISL	18.07	18.07	33.177	23.861	403.7	0.040	5.47	101.0	1.9	0.25	0.0	0.00	0.13	0.03	10	
20	A	18.04	18.04	33.176	23.868	403.4	0.081	5.48	101.1	1.8	0.25	0.0	0.00	0.12	0.03	20	220
30	ISL	18.03	18.02	33.174	23.869	403.6	0.121	5.48	101.1	1.9	0.25	0.0	0.00	0.13	0.04	30	
36	A	18.03	18.02	33.172	23.868	403.9	0.145	5.48	101.1	1.9	0.25	0.0	0.00	0.13	0.04	36	219
46		17.95	17.94	33.168	23.885	402.7	0.186	5.51	101.5	1.9	0.25	0.0	0.00	0.19	0.07	46	218
50	ISL	17.60	17.59	33.160	23.963	395.3	0.202	5.59	102.3	1.9	0.25	0.0	0.00	0.24	0.09	50	
56	A	16.94	16.93	33.160	24.120	380.5	0.225	5.72	103.3	2.0	0.26	0.0	0.00	0.30	0.12	56	217
64		16.11	16.10	33.212	24.351	358.6	0.254	5.83	103.6	2.1	0.27	0.0	0.00	0.31	0.20	64	216
70	A	15.53	15.52	33.310	24.556	339.2	0.275	5.85	102.9	2.0	0.27	0.0	0.00	0.34	0.27	70	215
75	ISL	15.43	15.42	33.371	24.625	332.8	0.292	5.83	102.3	2.0	0.27	0.0	0.00	0.32	0.34	75	
80		15.34	15.33	33.385	24.656	330.0	0.309	5.79	101.5	2.1	0.26	0.0	0.00	0.31	0.39	80	214
88		15.17	15.16	33.457	24.749	321.4	0.335	5.72	99.9	2.3	0.26	0.0	0.01	0.24	0.36	88	213
97	A	14.65	14.64	33.598	24.970	300.5	0.363	5.44	94.1	3.4	0.34	1.1	0.18	0.18	0.29	97	212
100	ISL	14.39	14.38	33.612	25.037	294.3	0.372	5.35	92.1	3.9	0.39	1.9	0.17	0.16	0.27	100	
112		13.27	13.25	33.609	25.265	272.6	0.406	5.03	84.6	6.2	0.63	5.6	0.03	0.12	0.20	112	211
125		12.27	12.25	33.591	25.447	255.5	0.440	4.81	79.2	8.7	0.83	8.7	0.02	0.09	0.16	126	210
144		10.98	10.96	33.639	25.723	229.4	0.486	4.52	72.4	12.9	1.12	13.4	0.01	0.06	0.11	145	209
150	ISL	10.66	10.64	33.664	25.799	222.2	0.500	4.43	70.5	14.2	1.19	14.6	0.01	0.05	0.09	151	
169		9.86	9.84	33.755	26.007	202.7	0.540	4.17	65.2	18.2	1.39	17.7	0.01	0.02	0.05	170	208
199		9.04	9.02	33.910	26.262	178.8	0.597	3.97	61.1	24.6	1.60	21.4	0.01	0.00	0.03	200	207
200	ISL	9.02	9.00	33.914	26.268	178.2	0.599	3.94	60.6	24.9	1.61	21.5	0.01			201	
229		8.68	8.66	33.999	26.389	167.3	0.649	3.08	47.0	31.9	1.94	25.6	0.01			230	206
250	ISL	8.38	8.35	34.031	26.460	160.8	0.684	2.73	41.4	35.7	2.09	27.5	0.01			251	
269		8.09	8.06	34.047	26.516	155.6	0.714	2.53	38.1	38.7	2.19	28.8	0.01			270	205
300	ISL	7.66	7.63	34.062	26.591	148.8	0.761	2.29	34.2	43.5	2.33	30.6	0.01			302	
318		7.42	7.39	34.066	26.629	145.4	0.787	2.16	32.0	46.4	2.40	31.6	0.01			320	204
377		6.63	6.60	34.090	26.757	133.6	0.870	1.51	22.0	58.8	2.71	35.6	0.01			379	203
400	ISL	6.45	6.41	34.119	26.803	129.4	0.900	1.25	18.1	63.1	2.82	36.8	0.01			402	
437		6.22	6.18	34.167	26.872	123.3	0.947	0.88	12.7	69.6	2.96	38.3	0.01			440	202
500	ISL	5.69	5.65	34.190	26.957	115.6	1.022	0.64	9.1	79.2	3.10	40.4	0.01			503	
521		5.51	5.47	34.198	26.985	113.0	1.046	0.56	7.9	82.4	3.14	41.1	0.01			524	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 5.0 N	122 39.8 W	17/09/98	1308 UTC	4003 m	330 11 kn			1014.7 mb	17.4 C	14.9 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	33.181	23.824	406.8	0.000	5.49	101.7	2.4	0.24	0.2	0.00	0.12	0.04	0	
1		18.23	18.23	33.181	23.824	406.8	0.004	5.49	101.7	2.4	0.24	0.2	0.00	0.12	0.04	1	220
10	ISL	18.23	18.23	33.181	23.825	407.1	0.041	5.52	102.3	2.3	0.24	0.1	0.00	0.13	0.03	10	
14		18.23	18.23	33.181	23.825	407.2	0.057	5.53	102.4	2.3	0.24	0.1	0.00	0.13	0.03	14	219
20	ISL	18.23	18.23	33.181	23.825	407.4	0.081	5.51	102.1	2.3	0.24	0.1	0.00	0.13	0.03	20	
30		18.23	18.22	33.181	23.825	407.7	0.122	5.48	101.5	2.3	0.24	0.1	0.00	0.13	0.03	30	218
45		18.04	18.03	33.156	23.853	405.6	0.183	5.50	101.5	2.3	0.25	0.1	0.00	0.17	0.05	45	217
50	ISL	17.90	17.89	33.318	24.012	390.7	0.203	5.60	103.1	2.3	0.23	0.1	0.00	0.19	0.05	50	
59		17.44	17.43	33.590	24.331	360.5	0.237	5.79	105.9	2.4	0.19	0.1	0.00	0.23	0.05	59	216
75		15.62	15.61	33.424	24.624	332.9	0.292	5.83	102.8	2.6	0.25	0.1	0.00	0.24	0.17	75	215
84		15.41	15.40	33.461	24.699	326.0	0.322	5.86	102.9	2.7	0.23	0.1	0.00	0.25	0.19	84	214
95		15.05	15.04	33.508	24.815	315.3	0.357	5.80	101.1	2.9	0.23	0.1	0.00	0.25	0.27	95	213
100	ISL	14.97	14.95	33.539	24.856	311.5	0.373	5.78	100.6	3.0	0.24	0.1	0.01	0.24	0.28	100	
105		14.84	14.82	33.571	24.909	306.6	0.388	5.75	99.9	3.0	0.25	0.1	0.02	0.23	0.28	105	212
115		14.05	14.03	33.622	25.116	287.1	0.418	5.37	91.8	4.2	0.39	1.7	0.20	0.20	0.23	115	211
123		13.51	13.49	33.606	25.215	277.8	0.441	5.14	86.9	5.9	0.58	4.7	0.05	0.15	0.19	123	210
125	ISL	13.30	13.28	33.603	25.255	274.0	0.446	5.09	85.7	6.4	0.62	5.4	0.05	0.14	0.18	125	
138		11.90	11.88	33.604	25.528	248.1	0.480	4.77	77.9	9.8	0.89	9.8	0.02	0.10	0.16	139	209
150	ISL	11.06	11.04	33.630	25.702	231.6	0.509	4.52	72.5	12.8	1.10	13.0	0.02	0.07	0.12	151	
163		10.40	10.38	33.676	25.854	217.3	0.538	4.28	67.7	16.0	1.29	16.0	0.01	0.05	0.08	164	208
194		9.17	9.15	33.850	26.194	185.2	0.600	3.72	57.4	24.7	1.66	21.9	0.01	0.00	0.03	195	207
200	ISL	9.02	9.00	33.878	26.240	180.9	0.611	3.71	57.0	25.8	1.69	22.4	0.01			201	
227		8.51	8.49	33.968	26.390	167.0	0.658	3.67	55.8	30.1	1.77	24.0	0.01			228	206
250	ISL	8.11	8.08	33.993	26.471	159.6	0.696	3.44	51.8	33.9	1.89	25.8	0.01			251	
268		7.80	7.77	33.995	26.518	155.2	0.724	3.21	48.0	37.1	2.00	27.2	0.01			269	205
300	ISL	7.21	7.18	34.001	26.607	147.0	0.773	2.89	42.6	43.7	2.19	29.7	0.01			302	
316		6.95	6.92	34.003	26.644	143.5	0.796	2.72	39.9	47.0	2.28	30.9	0.01			318	204
378		6.38	6.35	34.030	26.742	134.8	0.882	1.86	26.9	58.2	2.62	35.1	0.01			380	203
400	ISL	6.25	6.21	34.056	26.780	131.4	0.911	1.57	22.7	62.0	2.73	36.4	0.01			402	
436		6.08	6.04	34.105	26.840	126.1	0.958	1.15	16.5	68.1	2.88	38.1	0.01			439	202
500	ISL	5.74	5.70	34.175	26.939	117.3	1.036	0.72	10.3	77.6	3.07	40.0	0.01			503	
520		5.64	5.60	34.197	26.968	114.6	1.059	0.59	8.4	80.6	3.13	40.6	0.01			523	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
30 45.1 N	123 20.1 W	17/09/98	0728 UTC	4003 m	320 09 kn			1015.2 mb	18.5 C	15.4 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	19.43	19.43	33.591	23.836	405.7	0.000	5.35	101.6	2.0	0.20	0.0	0.00	0.12	0.03	0	
1	19.43	19.43	33.591	23.836	405.7	0.004	5.35	101.6	2.0	0.20	0.0	0.00	0.12	0.03	1	220
10 ISL	19.44	19.44	33.587	23.831	406.5	0.041	5.36	101.8	2.0	0.20	0.0	0.00	0.12	0.02	10	
14	19.44	19.44	33.586	23.830	406.7	0.057	5.36	101.8	2.0	0.20	0.0	0.00	0.12	0.02	14	219
20 ISL	19.44	19.44	33.590	23.834	406.6	0.081	5.34	101.4	2.0	0.20	0.0	0.00	0.12	0.02	20	
30	19.45	19.44	33.600	23.839	406.5	0.122	5.32	101.1	2.0	0.20	0.0	0.00	0.12	0.03	30	218
45	19.58	19.57	33.653	23.847	406.3	0.183	5.39	102.7	2.1	0.20	0.0	0.00	0.13	0.04	45	217
50 ISL	18.86	18.85	33.659	24.035	388.5	0.203	5.55	104.3	2.1	0.20	0.0	0.00	0.15	0.04	50	
59	17.40	17.39	33.677	24.407	353.2	0.236	5.81	106.2	2.2	0.19	0.0	0.00	0.20	0.06	59	216
74	16.31	16.30	33.683	24.668	328.8	0.287	5.78	103.4	2.4	0.20	0.0	0.00	0.27	0.14	74	215
75 ISL	16.30	16.29	33.691	24.676	328.1	0.291	5.77	103.2	2.4	0.20	0.0	0.00	0.27	0.15	75	
84	16.18	16.17	33.741	24.742	322.0	0.320	5.71	102.0	2.5	0.20	0.0	0.00	0.29	0.22	84	214
94	16.10	16.09	33.805	24.810	315.9	0.352	5.66	100.9	2.6	0.20	0.0	0.00	0.26	0.23	94	213
100 ISL	16.05	16.03	33.843	24.851	312.2	0.371	5.61	100.0	2.7	0.20	0.0	0.01	0.25	0.26	100	
104	15.97	15.95	33.860	24.882	309.4	0.383	5.57	99.1	2.8	0.20	0.0	0.02	0.24	0.28	104	212
115	15.44	15.42	33.830	24.978	300.5	0.417	5.43	95.6	3.3	0.29	0.5	0.15	0.20	0.24	115	211
124	14.89	14.87	33.784	25.063	292.5	0.443	5.32	92.6	3.9	0.37	1.8	0.11	0.19	0.25	124	210
125 ISL	14.81	14.79	33.776	25.074	291.5	0.446	5.30	92.1	4.0	0.38	2.0	0.10	0.19	0.25	125	
139	13.57	13.55	33.668	25.251	274.8	0.486	4.99	84.5	6.2	0.62	5.5	0.02	0.12	0.19	140	209
150 ISL	12.43	12.41	33.642	25.457	255.3	0.515	4.73	78.2	9.3	0.86	9.2	0.02	0.08	0.14	151	
164	11.08	11.06	33.665	25.726	229.6	0.549	4.42	71.0	13.6	1.15	13.7	0.01	0.05	0.09	165	208
193	9.63	9.61	33.780	26.065	197.6	0.611	4.04	62.9	20.5	1.48	19.1	0.01	0.01	0.04	194	207
200 ISL	9.42	9.40	33.817	26.128	191.7	0.624	3.90	60.4	22.2	1.55	20.2	0.01			201	
229	8.80	8.78	33.953	26.334	172.5	0.677	3.34	51.1	29.1	1.83	24.1	0.00			230	206
250 ISL	8.34	8.31	33.992	26.435	163.1	0.713	3.08	46.6	33.6	1.99	26.3	0.00			251	
269	7.97	7.94	34.009	26.504	156.7	0.743	2.88	43.3	37.5	2.11	28.0	0.00			270	205
300 ISL	7.54	7.51	34.044	26.594	148.4	0.790	2.44	36.3	43.6	2.30	30.4	0.00			302	
320	7.32	7.29	34.061	26.639	144.4	0.819	2.17	32.1	47.2	2.41	31.7	0.00			322	204
377	6.79	6.76	34.090	26.735	135.8	0.899	1.67	24.4	56.1	2.64	34.6	0.00			379	203
400 ISL	6.59	6.55	34.111	26.779	131.9	0.930	1.43	20.8	60.4	2.75	36.0	0.00			402	
435	6.32	6.28	34.147	26.843	126.1	0.975	1.07	15.5	66.9	2.91	37.9	0.00			438	202
500 ISL	5.98	5.94	34.223	26.947	116.8	1.054	0.61	8.8	75.7	3.09	39.5	0.00			503	
518	5.89	5.84	34.244	26.975	114.3	1.075	0.48	6.9	78.1	3.14	40.0	0.00			521	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
30 25.3 N	124 0.0 W	17/09/98	0144 UTC	4192 m	340 14 kn	010 03 05	2	1014.4 mb	19.0 C	16.8 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	19.32	19.32	33.590	23.864	403.1	0.000	5.35	101.4	2.3	0.20	0.0	0.00	0.09	0.02	0	
1	19.32	19.32	33.590	23.864	403.1	0.004									1	221
1	19.32	19.32	33.590	23.864	403.1	0.004	5.35	101.4	2.3	0.20	0.0	0.00	0.09	0.02	1	220
10 ISL	19.32	19.32	33.589	23.863	403.4	0.040	5.36	101.6	2.2	0.20	0.0	0.00	0.09	0.02	10	
16	19.32	19.32	33.589	23.864	403.6	0.065	5.37	101.8	2.2	0.20	0.0	0.00	0.10	0.02	16	219
20 ISL	19.29	19.29	33.588	23.871	403.1	0.081	5.36	101.5	2.2	0.20	0.0	0.00	0.10	0.02	20	
30	19.23	19.22	33.584	23.883	402.3	0.121	5.35	101.2	2.2	0.20	0.0	0.00	0.11	0.02	30	218
45	18.81	18.80	33.740	24.109	381.2	0.180	5.54	104.1	2.3	0.18	0.0	0.00	0.17	0.04	45	217
50 ISL	18.45	18.44	33.772	24.224	370.5	0.199	5.64	105.3	2.3	0.17	0.0	0.00	0.17	0.04	50	
60	17.68	17.67	33.813	24.444	349.8	0.235	5.79	106.5	2.4	0.16	0.0	0.00	0.16	0.05	60	216
74	16.98	16.97	33.816	24.614	334.0	0.282	5.74	104.2	2.5	0.17	0.0	0.00	0.23	0.09	74	215
75 ISL	16.96	16.95	33.822	24.624	333.2	0.286	5.73	103.9	2.5	0.17	0.0	0.00	0.23	0.09	75	
84	16.80	16.79	33.878	24.704	325.7	0.315	5.66	102.4	2.6	0.17	0.0	0.00	0.26	0.14	84	214
95	16.46	16.44	33.877	24.783	318.6	0.351	5.59	100.4	2.6	0.17	0.0	0.01	0.23	0.33	95	213
100 ISL	16.47	16.45	33.911	24.807	316.5	0.367	5.57	100.1	2.6	0.17	0.1	0.01	0.23	0.39	100	
104	16.47	16.45	33.940	24.829	314.5	0.379	5.54	99.6	2.6	0.17	0.1	0.01	0.24	0.42	104	212
114	16.50	16.48	34.057	24.913	306.9	0.410	5.38	96.9	2.8	0.20	0.1	0.12	0.25	0.32	114	211
125 ISL	15.97	15.95	34.028	25.012	297.7	0.444	5.26	93.7	3.2	0.26	1.0	0.07	0.19	0.20	125	
126	15.90	15.88	34.020	25.022	296.8	0.447	5.25	93.4	3.3	0.27	1.1	0.06	0.18	0.19	126	210
140	14.81	14.79	33.902	25.172	282.7	0.487	5.12	89.0	4.5	0.44	3.1	0.02	0.10	0.19	141	209
150 ISL	13.61	13.59	33.798	25.344	266.3	0.515	4.94	83.8	6.7	0.64	5.9	0.02	0.08	0.16	151	
166	11.77	11.75	33.691	25.620	240.0	0.555	4.64	75.6	10.8	0.95	10.7	0.01	0.06	0.09	167	208
194	10.60	10.58	33.729	25.861	217.4	0.619	4.30	68.4	15.5	1.22	15.1	0.01	0.02	0.05	195	207
200 ISL	10.31	10.29	33.751	25.928	211.0	0.632	4.17	65.9	17.3	1.31	16.5	0.01			201	
228	9.10	9.08	33.870	26.222	183.2	0.687	3.60	55.4	25.7	1.71	22.6	0.01			229	206
250 ISL	8.64	8.61	33.928	26.339	172.3	0.726	3.44	52.4	29.3	1.82	24.3	0.01			251	
265	8.44	8.41	33.955	26.391	167.5	0.752	3.36	51.0	31.3	1.87	25.0	0.01			266	205
300 ISL	7.89	7.86	34.008	26.516	156.1	0.808	2.87	43.0	38.0	2.09	28.0	0.01			302	
316	7.65	7.62	34.026	26.565	151.6	0.833	2.61	38.9	41.4	2.20	29.4	0.01			318	204
378	6.81	6.77	34.076	26.722	137.1	0.922	1.76	25.7	54.9	2.59	34.2	0.01			380	203
400 ISL	6.65	6.61	34.093	26.757	134.0	0.952	1.52	22.1	58.5	2.69	35.4	0.01			402	
435	6.48	6.44	34.129	26.808	129.5	0.998	1.18	17.1	63.4	2.83	36.9	0.01			438	202
500 ISL	6.37	6.32	34.270	26.934	118.5	1.079	0.54	7.8	71.7	3.08	38.6	0.01			503	
509	6.35	6.30	34.290	26.953	116.9	1.090	0.45	6.5	72.9	3.12	38.8	0.01			512	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 57.4 N	117 18.4 W	13/09/98	1821 UTC	64 m	340 06 kn	260 01 10	0	1009.9 mb	19.5 c	18.9 c	20m	0/8

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	21.23	21.23	33.300	23.139	472.2	0.000	5.99	117.4	2.5	0.17	0.0	0.00	2.39	0.09	0	
1 A	21.23	21.23	33.300	23.140	472.2	0.005	5.99	117.4	2.5	0.17	0.0	0.00	2.39	0.09	1	208
1	21.24	21.24	33.302	23.138	472.3	0.005									1	209
1	21.24	21.24	33.303	23.139	472.3	0.005									1	210
8	16.10	16.10	33.257	24.386	353.5	0.034	6.07	107.9	3.1	0.27	0.0	0.00	0.44	0.14	8	207
10 ISL	15.81	15.81	33.262	24.455	347.0	0.041	5.99	105.9	3.2	0.30	0.0	0.00	0.47	0.15	10	
15 A	15.10	15.10	33.279	24.625	330.9	0.058	5.78	100.7	3.3	0.35	0.0	0.00	0.53	0.19	15	206
20 ISL	14.95	14.95	33.305	24.678	326.1	0.074	5.75	99.9	3.4	0.37	0.0	0.00	0.54	0.23	20	
22	14.93	14.93	33.320	24.694	324.6	0.081	5.74	99.7	3.5	0.38	0.0	0.00	0.55	0.24	22	205
27 A	14.66	14.66	33.384	24.801	314.5	0.096	5.71	98.7	3.6	0.39	0.0	0.01	0.99	0.43	27	204
30 ISL	14.59	14.59	33.398	24.827	312.1	0.106	5.67	97.9	3.7	0.40	0.0	0.02	1.03	0.45	30	
36	14.52	14.51	33.415	24.855	309.6	0.125	5.60	96.5	3.9	0.41	0.1	0.04	1.10	0.48	36	203
43 A	14.37	14.36	33.472	24.931	302.6	0.146	5.24	90.1	5.1	0.53	0.9	0.19	1.18	0.42	43	202
50 ISL	14.15	14.14	33.486	24.988	297.3	0.167	4.97	85.1	6.5	0.65	2.9	0.32	0.72	0.38	50	
55 A	14.00	13.99	33.496	25.027	293.8	0.182	4.78	81.6	7.5	0.74	4.4	0.42	0.39	0.35	55	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 54.6 N	117 23.3 W	13/09/98	2119 UTC	551 m	280 08 kn	280 01 05	0	1009.2 mb	21.4 c	18.9 c	24m	0/8

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	21.27	21.27	33.374	23.185	467.8	0.000	5.76	113.0	2.4	0.18	0.0	0.00	0.69	0.05	0	
1	21.27	21.27	33.374	23.185	467.9	0.005	5.76	113.0	2.4	0.18	0.0	0.00	0.69	0.05	1	220
1	21.27	21.27	33.373	23.184	468.0	0.005									1	221
10 ISL	19.56	19.56	33.331	23.605	428.1	0.045	5.86	111.4	2.3	0.21	0.0	0.00	0.63	0.05	10	
15	18.17	18.17	33.324	23.949	395.5	0.066	5.93	109.8	2.2	0.24	0.0	0.00	0.56	0.05	15	219
20 ISL	17.22	17.22	33.339	24.190	372.6	0.085	5.92	107.6	2.3	0.27	0.0	0.00	0.44	0.06	20	
30	15.75	15.75	33.393	24.570	336.7	0.120	5.89	104.1	2.6	0.32	0.0	0.00	0.24	0.08	30	218
45	14.90	14.89	33.458	24.807	314.5	0.169	5.71	99.2	3.1	0.36	0.0	0.01	0.37	0.24	45	217
50 ISL	14.63	14.62	33.474	24.878	307.9	0.185	5.54	95.8	3.6	0.41	0.6	0.10	0.56	0.37	50	
55	14.31	14.30	33.488	24.956	300.5	0.200	5.32	91.4	4.4	0.50	1.9	0.17	0.69	0.47	55	216
64	13.47	13.46	33.507	25.145	282.8	0.226	4.81	81.2	7.2	0.78	6.7	0.06	0.35	0.41	64	215
74	12.74	12.73	33.570	25.339	264.5	0.253	4.19	69.7	10.6	1.06	11.1	0.04	0.17	0.26	74	214
75 ISL	12.71	12.70	33.576	25.349	263.5	0.256	4.13	68.6	10.9	1.09	11.4	0.04	0.16	0.25	75	
84	12.53	12.52	33.625	25.423	256.8	0.280	3.68	61.0	13.4	1.29	14.0	0.03	0.11	0.18	84	213
94	11.98	11.97	33.689	25.578	242.2	0.304	3.32	54.4	15.7	1.48	16.8	0.02	0.07	0.16	94	212
100 ISL	11.85	11.84	33.710	25.618	238.5	0.319	3.20	52.3	16.6	1.53	17.5	0.02	0.06	0.14	100	
109	11.69	11.68	33.731	25.665	234.3	0.340	3.11	50.6	17.7	1.57	18.1	0.02	0.04	0.11	109	211
124	10.96	10.94	33.768	25.826	219.1	0.374	3.15	50.5	19.9	1.63	19.5	0.01	0.01	0.07	125	210
125 ISL	10.93	10.91	33.773	25.836	218.3	0.376	3.14	50.3	20.1	1.64	19.6	0.01	0.01	0.07	126	
144	10.47	10.45	33.875	25.996	203.3	0.416	2.79	44.3	23.6	1.82	22.1	0.01	0.01	0.04	145	209
150 ISL	10.32	10.30	33.897	26.040	199.3	0.429	2.72	43.0	24.6	1.86	22.8	0.01	0.01	0.04	151	
168	9.93	9.91	33.960	26.155	188.6	0.463	2.52	39.5	27.5	1.98	24.5	0.01	0.01	0.05	169	208
198	9.67	9.65	34.100	26.309	174.7	0.518	2.00	31.2	32.2	2.20	26.9	0.01	0.01	0.04	199	207
200 ISL	9.64	9.62	34.105	26.318	173.9	0.521	1.99	31.1	32.4	2.21	27.0	0.01			201	
229	9.10	9.07	34.136	26.430	163.6	0.570	1.88	29.0	36.1	2.30	28.4	0.01			230	206
250 ISL	8.59	8.56	34.133	26.508	156.3	0.604	1.87	28.5	39.6	2.36	29.5	0.01			251	
268	8.20	8.17	34.130	26.565	151.1	0.632	1.85	28.0	42.6	2.42	30.4	0.01			270	205
300 ISL	7.94	7.91	34.159	26.627	145.6	0.679	1.61	24.2	46.5	2.52	31.7	0.00			302	
318	7.86	7.83	34.177	26.653	143.4	0.705	1.45	21.7	48.4	2.58	32.3	0.00			320	204
378	7.32	7.28	34.189	26.741	135.8	0.789	1.17	17.3	55.3	2.78	34.5	0.00			380	203
400 ISL	7.07	7.03	34.207	26.790	131.3	0.818	0.97	14.3	59.6	2.86	35.6	0.00			403	
436	6.68	6.64	34.241	26.870	123.9	0.864	0.65	9.5	67.0	2.98	37.4	0.00			439	202
500 ISL	6.18	6.14	34.286	26.971	114.8	0.941	0.41	5.9	76.3	3.14	39.2	0.01			503	
517	6.05	6.00	34.299	26.998	112.3	0.960	0.34	4.9	78.8	3.18	39.7	0.01			520	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 50.5 N	117 32.0 W	14/09/98	0115 UTC	858 m	270 09 kn	270 01 06	1	1008.5 mb	20.0 c	18.0 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	22.23	22.23	33.442	22.972	488.2	0.000	5.27	105.3	2.1	0.20	0.1	0.00	0.13	0.03	0	
1	22.23	22.23	33.442	22.972	488.2	0.005	5.27	105.3	2.1	0.20	0.1	0.00	0.13	0.03	1	220
10 ISL	19.54	19.54	33.296	23.583	430.2	0.046	5.71	108.5	2.2	0.24	0.1	0.00	0.13	0.03	10	
14	17.93	17.93	33.252	23.952	395.1	0.063	5.95	109.6	2.3	0.26	0.1	0.00	0.13	0.03	14	219
20 ISL	16.97	16.97	33.262	24.189	372.6	0.086	5.95	107.6	2.3	0.26	0.1	0.00	0.14	0.04	20	
29	16.15	16.15	33.302	24.410	351.9	0.118	5.95	105.9	2.3	0.27	0.1	0.00	0.16	0.05	29	218
30 ISL	16.06	16.06	33.305	24.432	349.8	0.122	5.95	105.7	2.3	0.27	0.1	0.00	0.16	0.05	30	
44	15.14	15.13	33.354	24.675	327.1	0.169	5.96	104.0	2.8	0.30	0.1	0.00	0.32	0.14	44	217
50 ISL	14.86	14.85	33.392	24.765	318.6	0.189	5.87	101.9	3.0	0.32	0.1	0.01	0.52	0.26	50	
54	14.69	14.68	33.420	24.823	313.2	0.201	5.76	99.6	3.3	0.35	0.1	0.01	0.64	0.35	54	216
65	14.15	14.14	33.494	24.995	297.1	0.235	5.13	87.8	5.2	0.57	3.2	0.14	0.69	0.55	65	215
75	13.28	13.27	33.530	25.201	277.7	0.264	4.60	77.4	8.1	0.87	8.1	0.05	0.35	0.46	75	214
85	12.85	12.84	33.562	25.311	267.4	0.291	4.28	71.3	10.2	1.03	10.6	0.03	0.22	0.35	85	213
95	12.45	12.44	33.581	25.404	258.8	0.317	4.13	68.3	11.5	1.12	12.0	0.02	0.17	0.28	95	212
100 ISL	12.22	12.21	33.600	25.463	253.3	0.330	4.01	66.0	12.5	1.19	13.1	0.02	0.13	0.22	100	
110	11.72	11.71	33.643	25.591	241.3	0.355	3.79	61.7	14.7	1.33	15.3	0.01	0.07	0.12	110	211
124	11.01	10.99	33.693	25.759	225.5	0.387	3.66	58.7	17.3	1.46	17.3	0.01	0.04	0.08	125	210
125 ISL	10.98	10.96	33.697	25.768	224.7	0.390	3.64	58.4	17.5	1.47	17.5	0.01	0.04	0.08	126	
143	10.45	10.43	33.770	25.918	210.7	0.429	3.22	51.0	21.5	1.70	20.5	0.01	0.03	0.07	144	209
150 ISL	10.17	10.15	33.787	25.979	205.0	0.443	3.22	50.7	22.6	1.73	21.3	0.01	0.02	0.06	151	
167	9.55	9.53	33.833	26.119	191.9	0.477	3.23	50.2	25.1	1.79	22.8	0.01	0.01	0.04	168	208
199	9.29	9.27	33.998	26.291	176.2	0.536	2.54	39.3	30.8	2.07	26.1	0.01	0.00	0.04	200	207
200 ISL	9.28	9.26	34.001	26.295	175.8	0.538	2.53	39.1	30.9	2.07	26.2	0.01			201	
228	8.97	8.95	34.058	26.389	167.3	0.586	2.32	35.7	34.0	2.18	27.4	0.01			229	206
250 ISL	8.66	8.63	34.113	26.481	158.9	0.622	2.06	31.4	37.9	2.30	28.8	0.01			251	
269	8.39	8.36	34.153	26.554	152.2	0.651	1.84	27.9	41.4	2.41	30.1	0.01			271	205
300 ISL	8.03	8.00	34.166	26.619	146.4	0.697	1.65	24.8	45.4	2.51	31.5	0.00			302	
320	7.82	7.79	34.164	26.649	143.9	0.727	1.55	23.2	47.8	2.57	32.2	0.00			322	204
378	7.26	7.22	34.184	26.745	135.3	0.807	1.18	17.4	55.8	2.77	34.7	0.00			380	203
400 ISL	7.09	7.05	34.199	26.781	132.1	0.837	1.02	15.0	58.9	2.84	35.5	0.00			402	
438	6.81	6.77	34.230	26.844	126.5	0.886	0.75	11.0	64.6	2.96	36.8	0.00			441	202
500 ISL	6.24	6.20	34.281	26.960	115.9	0.961	0.44	6.4	75.1	3.14	39.2	0.00			503	
519	6.07	6.02	34.297	26.994	112.8	0.983	0.35	5.0	78.3	3.19	39.9	0.00			522	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 40.7 N	117 52.4 W	14/09/98	0509 UTC	609 m	310 02 kn			1010.1 mb	19.3 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	21.02	21.02	33.456	23.315	455.4	0.000	5.33	104.2	1.9	0.20	0.0	0.00	0.11	0.03	0	
1	21.02	21.02	33.456	23.315	455.5	0.005	5.33	104.2	1.9	0.20	0.0	0.00	0.11	0.03	1	220
10 ISL	20.71	20.71	33.447	23.392	448.5	0.045	5.39	104.8	1.9	0.20	0.0	0.00	0.12	0.03	10	
15	20.54	20.54	33.442	23.434	444.7	0.068	5.43	105.2	1.9	0.20	0.0	0.00	0.13	0.03	15	219
20 ISL	19.57	19.57	33.405	23.659	423.3	0.089	5.64	107.3	2.0	0.21	0.0	0.00	0.14	0.04	20	
30	17.40	17.40	33.372	24.172	374.6	0.129	6.02	109.9	2.1	0.24	0.0	0.00	0.20	0.05	30	218
44	15.71	15.70	33.442	24.617	332.6	0.179	5.90	104.2	2.9	0.31	0.0	0.00	0.38	0.17	44	217
50 ISL	15.07	15.06	33.467	24.777	317.5	0.198	5.72	99.7	3.4	0.37	0.5	0.03	0.77	0.48	50	
55	14.60	14.59	33.487	24.894	306.5	0.214	5.51	95.2	4.0	0.44	0.9	0.06	1.04	0.70	55	216
65	13.88	13.87	33.523	25.073	289.7	0.244	4.92	83.8	6.3	0.69	5.1	0.15	0.78	0.58	65	215
75	13.23	13.22	33.551	25.227	275.2	0.272	4.53	76.1	8.3	0.89	8.4	0.09	0.49	0.47	75	214
85	12.50	12.49	33.563	25.380	260.8	0.299	4.59	76.0	9.8	0.99	10.2	0.04	0.33	0.44	85	213
95	11.86	11.85	33.621	25.547	245.1	0.324	3.90	63.7	13.6	1.26	14.1	0.02	0.15	0.22	95	212
100 ISL	11.68	11.67	33.663	25.614	238.9	0.336	3.58	58.3	15.6	1.39	15.8	0.01	0.10	0.16	100	
110	11.45	11.44	33.744	25.719	229.1	0.359	3.09	50.1	19.0	1.60	18.6	0.01	0.04	0.09	110	211
125	11.12	11.10	33.807	25.828	219.0	0.393	2.83	45.5	21.5	1.73	20.4	0.01	0.02	0.07	126	210
145	10.79	10.77	33.883	25.947	208.2	0.436	2.62	41.9	23.9	1.85	22.1	0.01	0.01	0.05	146	209
150 ISL	10.70	10.68	33.903	25.978	205.3	0.446	2.57	41.0	24.5	1.88	22.6	0.01	0.01	0.05	151	
168	10.32	10.30	33.964	26.092	194.8	0.482	2.45	38.8	26.9	1.98	24.2	0.01	0.01	0.05	169	208
199	9.29	9.27	34.008	26.299	175.5	0.539	2.46	38.1	31.7	2.09	26.5	0.01	0.01	0.05	200	207
200 ISL	9.27	9.25	34.010	26.303	175.0	0.541	2.46	38.0	31.8	2.09	26.6	0.01			201	
229	8.74	8.72	34.065	26.431	163.3	0.590	2.32	35.5	35.8	2.21	28.1	0.01			230	206
250 ISL	8.38	8.35	34.087	26.504	156.6	0.624	2.18	33.1	39.4	2.30	29.4	0.00			251	
269	8.10	8.07	34.102	26.558	151.7	0.653	2.03	30.6	42.7	2.38	30.5	0.00			270	205
300 ISL	7.78	7.75	34.133	26.630	145.2	0.699	1.76	26.3	46.8	2.50	31.9	0.00			302	
318	7.65	7.62	34.151	26.663	142.3	0.725	1.59	23.7	49.1	2.57	32.6	0.00			320	204
378	7.35	7.31	34.222	26.762	133.7	0.808	0.97	14.4	57.8	2.83	35.1	0.00			380	203
400 ISL	7.10	7.06	34.236	26.809	129.5	0.837	0.82	12.1	61.6	2.91	36.1	0.00			402	
437	6.65	6.61	34.255	26.885	122.5	0.883	0.64	9.3	67.7	3.02	37.7	0.00			440	202
500 ISL	6.27	6.23	34.276	26.952	116.7	0.959	0.47	6.8	74.4	3.12	39.2	0.00			503	
522	6.14	6.09	34.284	26.975	114.7	0.984	0.41	5.9	76.8	3.15	39.7	0.00			526	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 30.9 N	118 12.9 W	14/09/98	0900 UTC	1634 m	300 06 kn			1010.4 mb	18.1 C	16.0 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	21.10	21.10	33.470	23.304	456.5	0.000	5.31	104.0	1.8	0.19	0.0	0.00	0.14	0.03	0	
1	21.10	21.10	33.470	23.304	456.5	0.005	5.31	104.0	1.8	0.19	0.0	0.00	0.14	0.03	1	220
10 ISL	21.10	21.10	33.468	23.303	457.0	0.046	5.31	103.9	1.9	0.19	0.0	0.00	0.15	0.04	10	
14	21.10	21.10	33.467	23.302	457.2	0.064	5.31	103.9	1.9	0.19	0.0	0.00	0.15	0.04	14	219
20 ISL	20.10	20.10	33.417	23.531	435.6	0.091	5.56	106.8	1.9	0.20	0.0	0.00	0.17	0.04	20	
29	18.10	18.10	33.352	23.988	392.2	0.128	5.94	109.9	2.0	0.23	0.0	0.00	0.22	0.05	29	218
30 ISL	17.85	17.84	33.347	24.045	386.8	0.132	5.94	109.3	2.0	0.23	0.0	0.00	0.23	0.05	30	
44	14.98	14.97	33.351	24.707	324.0	0.182	5.99	104.2	2.8	0.32	0.0	0.00	0.32	0.16	44	217
50 ISL	14.54	14.53	33.372	24.818	313.6	0.201	5.89	101.6	3.0	0.35	0.1	0.01	0.57	0.29	50	
54	14.36	14.35	33.390	24.870	308.7	0.213	5.83	100.2	3.2	0.39	0.2	0.01	0.73	0.38	54	216
64	13.69	13.68	33.479	25.078	289.1	0.243	5.14	87.1	5.6	0.65	4.3	0.24	0.72	0.44	64	215
74	12.94	12.93	33.557	25.290	269.2	0.271	4.41	73.6	9.2	0.97	9.6	0.13	0.39	0.31	74	214
75 ISL	12.89	12.88	33.561	25.303	268.0	0.274	4.38	73.1	9.4	0.99	9.9	0.12	0.37	0.31	75	
85	12.36	12.35	33.595	25.432	255.9	0.300	4.15	68.5	11.4	1.12	12.2	0.07	0.24	0.27	85	213
94	11.77	11.76	33.645	25.583	241.7	0.322	3.85	62.8	14.1	1.30	14.9	0.03	0.15	0.18	94	212
100 ISL	11.44	11.43	33.672	25.665	234.0	0.337	3.70	59.9	15.7	1.39	16.3	0.03	0.11	0.14	100	
109	11.05	11.04	33.711	25.766	224.5	0.357	3.50	56.2	17.9	1.50	18.0	0.02	0.07	0.11	109	211
124	10.62	10.61	33.786	25.901	212.0	0.390	3.12	49.7	21.3	1.69	20.5	0.02	0.04	0.07	125	210
125 ISL	10.59	10.58	33.790	25.909	211.2	0.392	3.11	49.5	21.5	1.70	20.6	0.02	0.04	0.07	126	
145	10.05	10.03	33.866	26.061	197.1	0.433	2.90	45.6	24.7	1.84	22.7	0.01	0.01	0.05	146	209
150 ISL	9.93	9.91	33.888	26.099	193.6	0.443	2.83	44.4	25.6	1.88	23.2	0.01	0.01	0.05	151	
171	9.50	9.48	33.972	26.236	180.9	0.482	2.56	39.8	29.4	2.03	25.3	0.01	0.01	0.05	172	208
200	9.10	9.08	34.018	26.337	171.8	0.533	2.38	36.7	32.9	2.14	27.0	0.01	0.00	0.05	201	207
230	8.62	8.60	34.072	26.455	161.0	0.583	2.20	33.5	37.0	2.26	28.7	0.01			231	206
250 ISL	8.28	8.25	34.102	26.531	154.0	0.615	2.06	31.2	40.5	2.35	29.7	0.01			251	
270	7.96	7.93	34.125	26.597	148.0	0.645	1.91	28.7	44.0	2.43	30.7	0.01			272	205
300 ISL	7.62	7.59	34.140	26.659	142.4	0.688	1.72	25.6	48.2	2.53	32.2	0.00			302	
320	7.44	7.41	34.146	26.689	139.7	0.716	1.59	23.6	50.8	2.60	33.1	0.00			322	204
378	6.95	6.91	34.184	26.788	131.0	0.795	1.10	16.2	59.4	2.82	35.7	0.00			380	203
400 ISL	6.77	6.73	34.198	26.823	127.8	0.823	1.04	15.2	62.6	2.89	36.5	0.00			402	
438	6.49	6.45	34.222	26.880	122.8	0.871	0.95	13.8	68.0	2.99	37.8	0.00			441	202
500 ISL	6.09	6.05	34.254	26.958	116.0	0.945	0.56	8.1	75.6	3.12	39.4	0.00			503	
515	5.99	5.94	34.262	26.977	114.3	0.962	0.47	6.7	77.4	3.15	39.8	0.00			518	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 20.8 N	118 33.5 W	14/09/98	1406 UTC	1352 m	300 07 kn	300 02 06	2	1010.9 mb	16.9 C	15.5 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		19.73	19.73	33.396	23.610	427.2	0.000	5.39	102.8	2.1	0.20	0.1	0.00	0.22	0.05	0	220
10	ISL	19.39	19.39	33.364	23.674	421.5	0.042	5.43	102.9	2.1	0.20	0.1	0.00	0.26	0.05	10	
14		19.25	19.25	33.351	23.700	419.2	0.059	5.44	102.8	2.1	0.20	0.1	0.00	0.28	0.05	14	219
20	ISL	18.43	18.43	33.287	23.857	404.4	0.084	5.56	103.4	2.1	0.22	0.1	0.00	0.29	0.07	20	
29		17.02	17.02	33.229	24.153	376.5	0.119	5.76	104.3	2.0	0.25	0.1	0.00	0.32	0.09	29	218
30	ISL	16.90	16.90	33.237	24.187	373.2	0.123	5.77	104.2	2.0	0.25	0.1	0.00	0.32	0.09	30	
44		15.41	15.40	33.364	24.623	332.0	0.172	5.93	104.1	2.6	0.28	0.1	0.00	0.46	0.27	44	217
50	ISL	14.72	14.71	33.367	24.776	317.6	0.192	5.79	100.2	3.1	0.34	0.5	0.05	0.68	0.47	50	
54		14.31	14.30	33.369	24.865	309.3	0.204	5.66	97.1	3.5	0.40	0.7	0.09	0.80	0.59	54	216
65		13.74	13.73	33.433	25.032	293.5	0.237	5.23	88.7	5.4	0.59	3.9	0.19	0.57	0.55	65	215
75		12.68	12.67	33.507	25.302	268.0	0.265	4.78	79.4	8.7	0.83	8.4	0.07	0.22	0.39	75	214
85		12.21	12.20	33.553	25.428	256.2	0.292	4.55	74.8	10.5	0.96	10.5	0.03	0.15	0.23	85	213
95		11.82	11.81	33.582	25.524	247.3	0.317	4.35	71.0	12.1	1.08	12.2	0.03	0.12	0.23	95	212
100	ISL	11.55	11.54	33.609	25.595	240.6	0.329	4.17	67.6	13.6	1.18	13.7	0.02	0.10	0.20	100	
110		11.04	11.03	33.670	25.736	227.4	0.352	3.82	61.3	16.5	1.38	16.7	0.01	0.05	0.12	110	211
125		10.69	10.68	33.733	25.847	217.1	0.386	3.55	56.6	18.8	1.52	18.5	0.01	0.03	0.08	126	210
144		9.88	9.86	33.806	26.043	198.7	0.425	3.29	51.5	23.2	1.71	21.6	0.01	0.01	0.06	145	209
150	ISL	9.71	9.69	33.840	26.098	193.6	0.437	3.16	49.3	24.8	1.78	22.6	0.01	0.01	0.05	151	
168		9.33	9.31	33.942	26.240	180.4	0.471	2.76	42.7	29.2	1.98	25.1	0.01	0.01	0.03	169	208
199		8.97	8.95	34.046	26.380	167.7	0.525	2.27	34.9	34.1	2.18	27.6	0.01	0.00	0.04	200	207
200	ISL	8.96	8.94	34.048	26.383	167.4	0.526	2.27	34.9	34.2	2.18	27.6	0.01			201	
229		8.67	8.65	34.077	26.451	161.3	0.574	2.20	33.6	36.6	2.24	28.5	0.01			230	206
250	ISL	8.49	8.46	34.111	26.506	156.5	0.607	2.03	30.9	39.2	2.33	29.4	0.01			251	
266		8.34	8.31	34.134	26.547	152.8	0.632	1.88	28.5	41.5	2.40	30.2	0.01			267	205
300	ISL	7.80	7.77	34.137	26.630	145.2	0.683	1.70	25.5	47.0	2.51	32.0	0.01			302	
315		7.55	7.52	34.136	26.666	142.0	0.704	1.62	24.1	49.6	2.56	32.8	0.01			317	204
377		6.98	6.94	34.195	26.792	130.6	0.789	1.03	15.1	60.1	2.83	35.8	0.01			379	203
400	ISL	6.81	6.77	34.210	26.828	127.5	0.819	0.89	13.0	63.3	2.90	36.6	0.01			402	
436		6.57	6.53	34.231	26.877	123.2	0.864	0.73	10.6	68.0	2.99	37.7	0.01			439	202
500	ISL	6.10	6.06	34.275	26.973	114.5	0.940	0.48	6.9	76.8	3.14	39.6	0.00			503	
521		5.95	5.90	34.290	27.004	111.7	0.963	0.40	5.7	79.7	3.19	40.2	0.00			524	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 10.8 N	118 53.7 W	14/09/98	1823 UTC	1464 m	320 04 kn	310 03 08	1	1012.1 mb	17.9 C	16.1 C	27m	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	20.25	20.25	33.475	23.535	434.5	0.000	5.25	101.2					0.20	0.04	0	
1	A	20.25	20.25	33.475	23.535	434.5	0.004	5.25	101.2					0.20	0.04	1	222
1		20.26	20.26	33.470	23.528	435.1	0.004									1	223
1		20.26	20.26	33.472	23.530	434.9	0.004									1	224
10	ISL	20.19	20.19	33.470	23.547	433.6	0.043	5.26	101.3					0.21	0.05	10	
11		20.18	20.18	33.467	23.547	433.6	0.048	5.26	101.2					0.21	0.05	11	221
20	A	19.99	19.99	33.456	23.589	430.0	0.087	5.32	102.0	1.8	0.20	0.1	0.00	0.25	0.06	20	220
30	ISL	17.97	17.96	33.444	24.090	382.5	0.127	5.83	107.6	2.0	0.24	0.1	0.00	0.33	0.12	30	
38	A	16.07	16.06	33.465	24.553	338.5	0.156	6.11	108.7	2.2	0.28	0.1	0.00	0.42	0.22	38	219
48		14.82	14.81	33.459	24.825	312.9	0.189	5.67	98.4	3.1	0.38	0.2	0.01	0.57	0.41	48	218
50	ISL	14.67	14.66	33.465	24.862	309.4	0.195	5.60	96.9	3.3	0.40	0.3	0.03	0.60	0.44	50	
57	A	14.21	14.20	33.480	24.971	299.2	0.216	5.37	92.0	4.1	0.50	1.3	0.12	0.66	0.50	57	217
66		13.41	13.40	33.459	25.120	285.2	0.242	5.02	84.6	6.2	0.70	5.6	0.20	0.50	0.50	66	216
74	A	13.44	13.43	33.531	25.170	280.7	0.265	4.78	80.6	6.6	0.77	6.2	0.27	0.43	0.37	74	215
75	ISL	13.38	13.37	33.536	25.186	279.2	0.268	4.73	79.7	6.9	0.79	6.6	0.26	0.41	0.36	75	
83		12.69	12.68	33.566	25.346	264.1	0.290	4.36	72.4	9.5	1.00	10.3	0.14	0.28	0.32	83	214
91		12.08	12.07	33.601	25.490	250.5	0.310	4.10	67.3	11.9	1.18	12.9	0.06	0.20	0.23	91	213
100	ISL	11.71	11.70	33.628	25.581	242.0	0.332	3.93	64.0	13.4	1.26	14.4	0.04	0.17	0.19	100	
102	A	11.63	11.62	33.633	25.599	240.3	0.337	3.91	63.5	13.7	1.27	14.6	0.04	0.16	0.19	102	212
114		10.76	10.75	33.670	25.785	222.7	0.365	3.95	63.0	16.1	1.37	16.6	0.03	0.08	0.15	114	211
125		10.27	10.26	33.702	25.896	212.4	0.389	3.77	59.5	18.5	1.50	18.5	0.01	0.04	0.08	126	210
145		9.27	9.25	33.848	26.176	186.0	0.429	3.18	49.1	26.1	1.84	23.6	0.01	0.00	0.05	146	209
150	ISL	9.12	9.10	33.881	26.226	181.3	0.438	3.07	47.3	27.6	1.89	24.4	0.01	0.00	0.05	151	
168		8.75	8.73	33.976	26.359	168.9	0.469	2.77	42.3	31.8	2.03	26.4	0.01	0.01	0.04	169	208
199		8.43	8.41	34.030	26.451	160.7	0.521	2.55	38.7	35.6	2.15	28.0	0.01	0.00	0.04	200	207
200	ISL	8.42	8.40	34.031	26.453	160.5	0.522	2.54	38.5	35.7	2.15	28.0	0.01			201	
227		8.14	8.12	34.066	26.523	154.2	0.565	2.33	35.1	39.4	2.26	29.2	0.01			228	206
250	ISL	8.05	8.02	34.120	26.579	149.3	0.600	1.99	30.0	42.6	2.39	30.3	0.01			251	
266		7.98	7.95	34.154	26.617	146.0	0.623	1.75	26.3	44.9	2.48	31.1	0.01			267	205
300	ISL	7.55	7.52	34.156	26.681	140.2	0.672	1.52	22.6	50.1	2.59	32.8	0.01			302	
317		7.31	7.28	34.150	26.711	137.6	0.695	1.44	21.3	52.7	2.64	33.6	0.01			319	204
376		6.91	6.87	34.209	26.813	128.6	0.774	0.91	13.4	61.3	2.89	36.1	0.01			378	203
400	ISL	6.72	6.68	34.229	26.855	124.8	0.804	0.75	11.0	64.9	2.97	37.1	0.01			403	
438		6.43	6.39	34.257	26.916	119.4	0.851	0.54	7.8	70.3	3.07	38.4	0.01			441	202
500	ISL	6.11	6.07	34.295	26.987	113.2	0.923	0.37	5.3	76.6	3.17	39.7	0.00			503	
521		6.00	5.95	34.308	27.012	111.0	0.946	0.31	4.5	78.8	3.21	40.2	0.00			525	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 1.1 N	119 13.5 W	15/09/98	0036	UTC	1552 m	290	08 kn	290 03 06	2	1010.6 mb	19.2 C	16.9 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	20.11	20.11	33.476	23.572	430.9	0.000	5.30	101.9	2.2	0.20	0.1	0.00	0.16	0.04	0	
1		20.12	20.12	33.477	23.570	431.1	0.004									1	221
1		20.11	20.11	33.476	23.572	430.9	0.004	5.30	101.9	2.2	0.20	0.1	0.00	0.16	0.04	1	220
1		20.12	20.12	33.480	23.573	430.9	0.004									1	222
10	ISL	19.96	19.96	33.468	23.606	428.0	0.043	5.31	101.8	2.1	0.20	0.1	0.00	0.19	0.05	10	
14		19.89	19.89	33.465	23.622	426.6	0.060	5.32	101.8	2.1	0.20	0.1	0.00	0.21	0.05	14	219
20	ISL	19.02	19.02	33.432	23.820	407.9	0.085	5.58	105.1	2.1	0.21	0.1	0.00	0.26	0.06	20	
29		17.37	17.37	33.385	24.190	372.9	0.120	5.99	109.3	2.2	0.23	0.1	0.00	0.36	0.10	29	218
30	ISL	17.20	17.20	33.379	24.225	369.6	0.124	6.00	109.1	2.2	0.23	0.1	0.00	0.37	0.10	30	
45		14.87	14.86	33.318	24.706	324.1	0.176	6.09	105.7	3.1	0.33	0.1	0.00	0.55	0.27	45	217
50	ISL	14.28	14.27	33.306	24.822	313.2	0.192	5.81	99.6	3.6	0.41	1.0	0.08	0.69	0.41	50	
54		13.91	13.90	33.308	24.901	305.8	0.204	5.56	94.6	4.1	0.48	1.9	0.15	0.77	0.50	54	216
66		13.52	13.51	33.428	25.073	289.6	0.240	5.10	86.1	6.6	0.73	5.8	0.23	0.50	0.42	66	215
75		12.81	12.80	33.486	25.260	272.0	0.265	4.64	77.2	9.5	0.93	9.5	0.07	0.30	0.33	75	214
85		11.75	11.74	33.564	25.523	247.1	0.291	4.05	66.0	13.8	1.24	14.3	0.03	0.15	0.19	85	213
94		11.11	11.10	33.632	25.693	231.1	0.313	3.72	59.8	16.9	1.42	17.2	0.02	0.09	0.16	94	212
100	ISL	10.80	10.79	33.668	25.776	223.3	0.326	3.57	57.0	18.4	1.50	18.5	0.02	0.07	0.13	100	
110		10.38	10.37	33.724	25.893	212.3	0.348	3.35	53.0	20.7	1.63	20.3	0.02	0.04	0.08	110	211
125		9.84	9.83	33.830	26.068	195.9	0.379	2.89	45.2	25.6	1.86	23.4	0.01	0.02	0.07	126	210
144		9.54	9.52	33.887	26.162	187.3	0.415	2.72	42.3	27.9	1.96	24.9	0.01	0.01	0.06	145	209
150	ISL	9.45	9.43	33.897	26.185	185.3	0.426	2.72	42.2	28.4	1.97	25.1	0.01	0.01	0.05	151	
169		9.14	9.12	33.920	26.253	179.1	0.461	2.72	41.9	30.0	1.99	25.7	0.01	0.01	0.04	170	208
199		8.63	8.61	33.975	26.377	167.8	0.513	2.71	41.3	33.4	2.07	26.9	0.01	0.01	0.05	200	207
200	ISL	8.61	8.59	33.977	26.382	167.3	0.515	2.71	41.3	33.5	2.07	26.9	0.01			201	
230		8.17	8.15	34.030	26.490	157.4	0.563	2.58	38.9	37.6	2.17	28.3	0.01			231	206
250	ISL	8.01	7.98	34.091	26.563	150.9	0.594	2.13	32.0	41.9	2.34	30.0	0.00			251	
268		7.88	7.85	34.141	26.621	145.6	0.621	1.69	25.3	46.0	2.50	31.6	0.00			270	205
300	ISL	7.52	7.49	34.161	26.689	139.5	0.666	1.38	20.5	51.5	2.64	33.4	0.00			302	
318		7.32	7.29	34.160	26.717	137.0	0.691	1.29	19.1	54.2	2.69	34.2	0.00			320	204
376		6.90	6.86	34.195	26.803	129.5	0.769	0.93	13.6	61.7	2.87	36.2	0.01			378	203
400	ISL	6.74	6.70	34.210	26.837	126.5	0.799	0.80	11.7	64.5	2.94	36.9	0.01			403	
435		6.53	6.49	34.233	26.883	122.5	0.843	0.62	9.0	68.4	3.03	37.8	0.01			438	202
500	ISL	6.24	6.20	34.292	26.969	115.1	0.920	0.39	5.6	75.4	3.15	39.2	0.01			503	
521		6.15	6.10	34.311	26.995	112.8	0.944	0.32	4.6	77.6	3.19	39.7	0.01			525	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 50.8 N	119 34.4 W	15/09/98	0438	UTC	1849 m	290	09 kn			1011.4 mb	18.1 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	19.84	19.84	33.490	23.653	423.1	0.000	5.32	101.8	2.3	0.20	0.0	0.00	0.19	0.05	0	
1		19.84	19.84	33.490	23.653	423.1	0.004	5.32	101.8	2.3	0.20	0.0	0.00	0.19	0.05	1	220
10	ISL	19.74	19.74	33.478	23.671	421.9	0.042	5.32	101.6	2.2	0.20	0.0	0.00	0.19	0.05	10	
15		19.69	19.69	33.471	23.678	421.3	0.063	5.32	101.5	2.1	0.20	0.0	0.00	0.19	0.06	15	219
20	ISL	19.13	19.13	33.440	23.798	410.0	0.084	5.39	101.7	2.1	0.22	0.0	0.00	0.22	0.07	20	
29		17.65	17.65	33.341	24.089	382.6	0.120	5.58	102.3	2.3	0.26	0.0	0.00	0.31	0.09	29	218
30	ISL	17.40	17.40	33.315	24.129	378.8	0.124	5.62	102.5	2.3	0.26	0.0	0.00	0.33	0.11	30	
44		14.28	14.27	33.046	24.621	332.1	0.173	5.93	101.5	2.8	0.34	0.0	0.01	0.61	0.41	44	217
50	ISL	13.68	13.67	33.044	24.744	320.6	0.193	5.78	97.7	3.2	0.41	0.8	0.13	0.59	0.49	50	
54		13.47	13.46	33.075	24.810	314.3	0.206	5.64	95.0	3.5	0.46	1.5	0.20	0.57	0.51	54	216
64		13.38	13.37	33.272	24.981	298.3	0.236	5.36	90.2	4.6	0.53	3.1	0.10	0.35	0.33	64	215
74		12.91	12.90	33.450	25.213	276.5	0.265	5.02	83.7	6.9	0.69	6.2	0.05	0.24	0.26	74	214
75	ISL	12.83	12.82	33.454	25.231	274.7	0.268	4.99	83.1	7.2	0.71	6.6	0.05	0.23	0.25	75	
84		12.10	12.09	33.470	25.385	260.3	0.292	4.73	77.6	9.5	0.91	9.6	0.02	0.14	0.20	84	213
95		11.51	11.50	33.549	25.556	244.2	0.320	4.57	74.0	11.4	1.03	11.7	0.01	0.11	0.14	95	212
100	ISL	11.22	11.21	33.590	25.641	236.2	0.332	4.49	72.3	12.6	1.09	12.8	0.01	0.10	0.12	100	
110		10.66	10.65	33.663	25.797	221.5	0.354	4.32	68.8	15.0	1.22	15.0	0.01	0.07	0.09	110	211
123		10.13	10.12	33.711	25.926	209.4	0.382	4.12	64.8	17.8	1.36	17.3	0.01	0.04	0.05	124	210
125	ISL	10.06	10.05	33.718	25.944	207.8	0.387	4.10	64.4	18.2	1.38	17.6	0.01	0.04	0.05	126	
143		9.55	9.53	33.786	26.082	194.9	0.423	3.81	59.2	22.0	1.56	20.3	0.00	0.02	0.05	144	209
150	ISL	9.41	9.39	33.821	26.132	190.2	0.436	3.56	55.2	24.0	1.67	21.7	0.00	0.02	0.05	151	
168		9.14	9.12	33.912	26.247	179.6	0.470	2.90	44.7	29.1	1.93	25.0	0.00	0.01	0.04	169	208
198		8.86	8.84	34.018	26.375	168.0	0.522	2.33	35.7	34.4	2.16	27.7	0.00	0.01	0.05	199	207
200	ISL	8.84	8.82	34.023	26.382	167.4	0.525	2.31	35.4	34.6	2.17	27.8	0.00			201	
228		8.54	8.52	34.071	26.467	159.8	0.571	2.13	32.4	37.9	2.27	29.0	0.00			229	206
250	ISL	8.21	8.18	34.089	26.531	153.9	0.605	2.04	30.8	41.1	2.35	30.0	0.00			251	
266		7.97	7.94	34.101	26.576	149.8	0.630	1.95	29.3	43.7	2.41	30.8	0.00			267	205
300	ISL	7.63	7.60	34.148	26.663	142.0	0.679	1.54	23.0	49.6	2.59	32.7	0.00			302	
316		7.49	7.46	34.169	26.700	138.7	0.702	1.34	19.9	52.4	2.67	33.6	0.00			318	204
378		6.85	6.81	34.197	26.812	128.7	0.785	0.95	13.9	62.1	2.87	36.4	0.00			380	203
400	ISL	6.72	6.68	34.214	26.843	125.9	0.813	0.81	11.8	64.9	2.93	37.1	0.00			402	
438		6.53	6.49	34.244	26.892	121.7	0.860	0.60	8.7	69.5	3.03	38.1	0.00			441	202
500	ISL	6.05	6.01	34.284	26.986	113.2	0.933	0.41	5.9	78.4	3.17	39.8	0.00			503	
518		5.91	5.86	34.296	27.014	110.7	0.953	0.36	5.2	81.0	3.21	40.3	0.00			521	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 30.8 N	120 14.5 W	15/09/98	1030 UTC	3914 m	310 07 kn			1012.3 mb	17.9 C	15.0 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	18.49	18.49	33.431	23.951	394.7	0.000	5.46	101.8	2.2	0.27	0.0	0.00	0.22	0.05	0	
1	18.49	18.49	33.431	23.951	394.7	0.004	5.46	101.8	2.2	0.27	0.0	0.00	0.22	0.05	1	220
10 ISL	18.49	18.49	33.436	23.955	394.6	0.039	5.46	101.8	2.1	0.27	0.0	0.00	0.22	0.04	10	
14	18.49	18.49	33.438	23.957	394.6	0.055	5.46	101.8	2.1	0.27	0.0	0.00	0.22	0.04	14	219
20 ISL	18.48	18.48	33.432	23.955	395.0	0.079	5.46	101.8	2.1	0.27	0.0	0.00	0.23	0.05	20	
29	18.46	18.45	33.424	23.955	395.4	0.115	5.47	101.9	2.1	0.27	0.0	0.00	0.24	0.06	29	218
30 ISL	18.30	18.29	33.409	23.983	392.8	0.118	5.51	102.3	2.1	0.27	0.0	0.00	0.26	0.08	30	
43	15.48	15.47	33.190	24.474	346.2	0.166	5.88	103.2	2.6	0.33	0.0	0.00	0.60	0.40	43	217
50 ISL	13.83	13.82	33.068	24.732	321.7	0.190	5.77	97.9	3.3	0.45	1.3	0.19	0.68	0.59	50	
54	13.09	13.08	33.040	24.859	309.6	0.202	5.64	94.2	3.8	0.53	2.3	0.27	0.72	0.65	54	216
64	12.89	12.88	33.226	25.043	292.4	0.233	5.22	86.9	5.6	0.67	5.0	0.08	0.40	0.50	64	215
74	11.98	11.97	33.353	25.316	266.5	0.261	4.69	76.7	10.0	1.00	10.5	0.03	0.20	0.27	74	214
75 ISL	11.93	11.92	33.368	25.337	264.6	0.263	4.65	75.9	10.5	1.03	11.0	0.03	0.19	0.25	75	
84	11.51	11.50	33.499	25.517	247.6	0.286	4.34	70.3	14.1	1.27	14.7	0.02	0.12	0.16	84	213
93	10.94	10.93	33.608	25.705	229.9	0.308	4.01	64.2	15.8	1.34	16.2	0.02	0.07	0.12	93	212
100 ISL	10.63	10.62	33.659	25.799	221.0	0.324	4.04	64.3	16.3	1.34	16.5	0.02	0.05	0.10	100	
108	10.32	10.31	33.700	25.885	213.0	0.341	4.14	65.4	17.0	1.34	16.8	0.02	0.04	0.08	108	211
124	9.55	9.54	33.790	26.085	194.3	0.373	3.83	59.5	22.0	1.58	20.5	0.01	0.03	0.04	125	210
125 ISL	9.53	9.52	33.793	26.090	193.7	0.375	3.82	59.4	22.1	1.59	20.6	0.01	0.03	0.04	126	
144	9.27	9.25	33.847	26.175	186.0	0.411	3.71	57.3	24.1	1.65	21.7	0.01	0.00	0.05	145	209
150 ISL	9.14	9.12	33.867	26.212	182.6	0.423	3.64	56.1	25.3	1.69	22.3	0.01	0.00	0.05	151	
168	8.72	8.70	33.925	26.323	172.3	0.454	3.40	51.9	29.2	1.84	24.4	0.01	0.00	0.03	169	208
198	8.20	8.18	33.976	26.443	161.3	0.505	3.13	47.3	34.1	1.99	26.7	0.01	0.00	0.02	199	207
200 ISL	8.16	8.14	33.979	26.452	160.5	0.508	3.10	46.8	34.5	2.00	26.9	0.01			201	
227	7.67	7.65	34.016	26.553	151.2	0.550	2.71	40.4	40.3	2.19	29.1	0.00			228	206
250 ISL	7.37	7.35	34.029	26.606	146.3	0.584	2.44	36.1	44.3	2.31	30.6	0.00			251	
266	7.20	7.17	34.034	26.634	143.9	0.607	2.27	33.5	46.9	2.38	31.6	0.00			267	205
300 ISL	6.90	6.87	34.057	26.694	138.6	0.655	1.94	28.4	52.2	2.53	33.5	0.00			302	
317	6.78	6.75	34.071	26.721	136.2	0.679	1.77	25.9	54.9	2.60	34.4	0.00			319	204
377	6.35	6.32	34.136	26.830	126.5	0.757	1.06	15.3	65.4	2.88	37.5	0.00			379	203
400 ISL	6.21	6.17	34.166	26.872	122.7	0.786	0.87	12.6	69.1	2.96	38.4	0.00			403	
435	6.02	5.98	34.210	26.931	117.5	0.828	0.64	9.2	74.3	3.06	39.5	0.00			438	202
500 ISL	5.65	5.61	34.253	27.011	110.4	0.902	0.43	6.1	82.6	3.18	41.0	0.00			503	
531	5.47	5.43	34.274	27.050	106.9	0.936	0.33	4.7	86.5	3.24	41.7	0.00			535	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 10.1 N	120 55.7 W	15/09/98	1826 UTC	3839 m	290 06 kn	290 02 07	2	1014.0 mb	18.1 C	16.6 C	23m	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	17.70	17.70	33.278	24.027	387.4	0.000	5.54	101.6	2.3	0.28	0.1	0.00	0.22	0.04	0	
1 A	17.70	17.70	33.278	24.027	387.5	0.004	5.54	101.6	2.3	0.28	0.1	0.00	0.22	0.04	1	221
1	17.70	17.70	33.277	24.027	387.5	0.004									1	222
1	17.71	17.71	33.278	24.025	387.7	0.004									1	223
10 ISL	17.64	17.64	33.289	24.051	385.6	0.039	5.56	101.9	2.3	0.27	0.1	0.00	0.25	0.05	10	
18 A	17.53	17.53	33.299	24.085	382.5	0.069	5.58	102.0	2.2	0.27	0.1	0.00	0.28	0.08	18	220
20 ISL	17.49	17.49	33.287	24.085	382.6	0.077	5.58	102.0	2.2	0.27	0.1	0.00	0.30	0.09	20	
30 ISL	17.26	17.26	33.279	24.135	378.2	0.115	5.59	101.7	2.2	0.29	0.1	0.00	0.41	0.14	30	
32 A	17.22	17.21	33.288	24.151	376.7	0.123	5.59	101.6	2.2	0.29	0.1	0.00	0.43	0.16	32	219
40	16.43	16.42	33.239	24.298	362.9	0.152	5.72	102.3	2.3	0.30	0.1	0.00	0.45	0.27	40	218
48 A	14.94	14.93	33.134	24.549	339.2	0.180	5.93	102.9	2.4	0.32	0.1	0.01	0.57	0.36	48	217
50 ISL	14.82	14.81	33.161	24.596	334.8	0.187	5.91	102.3	2.4	0.32	0.2	0.03	0.55	0.38	50	
56	14.47	14.46	33.204	24.703	324.6	0.207	5.85	100.6	2.6	0.33	0.3	0.08	0.50	0.40	56	216
62 A	14.73	14.72	33.366	24.773	318.2	0.226	5.75	99.5	2.7	0.28	0.3	0.04	0.35	0.39	62	215
75	14.40	14.39	33.432	24.895	307.0	0.267	5.76	99.1	2.8	0.26	0.2	0.04	0.26	0.27	75	214
87 A	13.46	13.45	33.400	25.065	291.0	0.303	5.33	89.9	4.8	0.50	3.4	0.08	0.18	0.24	87	213
97	12.79	12.78	33.571	25.331	265.9	0.330	4.93	82.1	7.3	0.65	6.9	0.04	0.13	0.21	97	212
100 ISL	12.45	12.44	33.590	25.411	258.3	0.338	4.83	79.8	8.3	0.74	8.1	0.03	0.12	0.20	100	
109	11.47	11.46	33.619	25.618	238.7	0.361	4.61	74.7	11.2	0.99	11.5	0.02	0.08	0.17	109	211
123	10.83	10.82	33.666	25.770	224.4	0.393	4.45	71.1	13.6	1.13	13.9	0.01	0.06	0.10	124	210
125 ISL	10.73	10.72	33.672	25.792	222.3	0.398	4.42	70.5	14.0	1.15	14.3	0.01	0.06	0.09	126	
144	9.88	9.86	33.734	25.987	204.1	0.438	4.08	63.9	18.5	1.39	17.9	0.01	0.02	0.05	145	209
150 ISL	9.68	9.66	33.761	26.041	199.0	0.450	3.99	62.2	19.9	1.46	18.9	0.01	0.01	0.04	151	
168	9.19	9.17	33.844	26.186	185.4	0.485	3.72	57.4	24.2	1.65	21.7	0.00	0.00	0.03	169	208
200	8.40	8.38	33.965	26.404	165.1	0.541	3.30	50.0	31.7	1.89	25.4	0.00	0.00	0.03	201	207
229	7.90	7.88	33.995	26.503	156.0	0.587	2.93	43.9	37.0	2.07	27.8	0.00			230	206
250 ISL	7.60	7.58	34.009	26.558	151.1	0.620	2.73	40.7	40.5	2.18	29.2	0.00			251	
268	7.37	7.34	34.019	26.598	147.4	0.647	2.54	37.6	43.6	2.27	30.4	0.00			269	205
300 ISL	6.95	6.92	34.046	26.678	140.1	0.693	2.04	29.9	51.0	2.49	33.1	0.00			302	
317	6.74	6.71	34.062	26.719	136.3	0.716	1.76	25.7	55.1	2.60	34.5	0.00			319	204
377	6.22	6.19	34.119	26.833	126.1	0.795	1.08	15.6	66.6	2.88	37.8	0.00			379	203
400 ISL	6.07	6.04	34.138	26.867	123.0	0.823	0.90	12.9	70.2	2.95	38.7	0.00			402	
438	5.85	5.81	34.170	26.920	118.3	0.869	0.68	9.7	75.6	3.05	39.8	0.00			441	202
500 ISL	5.58	5.54	34.235	27.005	110.8	0.940	0.44	6.3	83.0	3.18	41.0	0.00			503	
521	5.49	5.45	34.257	27.034	108.3	0.963	0.36	5.1	85.5	3.22	41.4	0.00			524	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 50.8 N	121 35.1 W	15/09/98	2331 UTC	4073 m	300 09 kn	310 02 05	2	1013.4 mb	18.2 C	16.8 C	31m	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	18.61	18.61	33.178	23.728	416.0	0.000	5.44	101.5	2.1	0.25	0.1	0.00	0.12	0.03	0	220
10 ISL	18.50	18.50	33.179	23.757	413.6	0.041	5.44	101.3	2.0	0.24	0.1	0.00	0.13	0.04	10	
15	18.44	18.44	33.179	23.772	412.4	0.062	5.44	101.2	2.0	0.24	0.1	0.00	0.13	0.05	15	218
20 ISL	18.30	18.30	33.180	23.807	409.2	0.083	5.48	101.6	1.9	0.24	0.1	0.00	0.15	0.05	20	
30	17.83	17.82	33.196	23.934	397.3	0.123	5.60	102.9	1.9	0.24	0.0	0.00	0.21	0.05	30	217
45	16.53	16.52	33.288	24.313	361.7	0.180	5.84	104.7	2.2	0.27	0.1	0.00	0.36	0.17	45	219
50 ISL	16.10	16.09	33.329	24.443	349.5	0.198	5.86	104.2	2.3	0.26	0.1	0.00	0.35	0.23	50	
55	15.76	15.75	33.371	24.552	339.2	0.215	5.88	103.9	2.3	0.25	0.1	0.00	0.34	0.28	55	216
64	15.68	15.67	33.429	24.614	333.5	0.245	5.83	102.9	2.3	0.25	0.1	0.00	0.31	0.24	64	215
75	15.15	15.14	33.404	24.712	324.5	0.281	5.78	100.9	2.4	0.26	0.1	0.01	0.32	0.35	75	214
84	15.28	15.27	33.634	24.861	310.6	0.310	5.62	98.5	2.9	0.25	0.1	0.04	0.28	0.26	84	213
94	14.47	14.46	33.617	25.023	295.3	0.340	5.39	92.9	3.9	0.38	1.5	0.18	0.17	0.29	94	212
100 ISL	13.96	13.95	33.595	25.113	286.9	0.358	5.23	89.2	4.8	0.49	3.2	0.14	0.16	0.28	100	
109	13.16	13.15	33.575	25.261	273.0	0.383	5.00	83.9	6.6	0.67	6.1	0.04	0.15	0.25	109	211
124	11.77	11.75	33.633	25.574	243.3	0.422	4.71	76.8	10.2	0.92	10.3	0.01	0.09	0.17	125	210
125 ISL	11.69	11.67	33.638	25.593	241.5	0.424	4.69	76.3	10.5	0.94	10.6	0.01	0.09	0.16	126	
144	10.44	10.42	33.730	25.889	213.5	0.467	4.39	69.6	15.5	1.23	15.3	0.01	0.04	0.07	145	209
150 ISL	10.16	10.14	33.749	25.951	207.6	0.480	4.26	67.1	17.1	1.32	16.7	0.01	0.03	0.05	151	
170	9.45	9.43	33.805	26.114	192.5	0.520	3.87	60.0	22.1	1.57	20.4	0.00	0.01	0.03	171	208
198	8.86	8.84	33.924	26.301	175.0	0.571	3.57	54.7	27.4	1.75	23.3	0.00	0.00	0.03	199	207
200 ISL	8.83	8.81	33.928	26.309	174.3	0.575	3.54	54.2	27.7	1.76	23.5	0.00			201	
228	8.39	8.37	33.962	26.404	165.6	0.622	3.18	48.2	32.4	1.94	25.9	0.00			229	206
250 ISL	8.05	8.02	33.987	26.475	159.1	0.658	2.97	44.7	36.0	2.06	27.5	0.00			251	
268	7.78	7.75	34.005	26.529	154.2	0.686	2.81	42.0	39.1	2.15	28.7	0.00			269	205
300 ISL	7.33	7.30	34.030	26.613	146.5	0.734	2.42	35.8	45.2	2.33	30.9	0.00			302	
319	7.09	7.06	34.043	26.657	142.5	0.762	2.18	32.1	48.9	2.43	32.2	0.00			321	204
378	6.47	6.44	34.075	26.766	132.6	0.843	1.51	21.9	60.1	2.72	35.9	0.00			380	203
400 ISL	6.27	6.23	34.097	26.809	128.7	0.872	1.26	18.2	64.7	2.83	37.2	0.00			402	
437	5.96	5.92	34.139	26.882	122.0	0.918	0.88	12.6	72.1	2.99	39.1	0.01			440	202
500 ISL	5.58	5.54	34.202	26.979	113.3	0.992	0.57	8.1	81.3	3.14	40.8	0.00			503	
515	5.49	5.45	34.217	27.002	111.2	1.009	0.50	7.1	83.5	3.17	41.2	0.00			518	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 30.9 N	122 15.6 W	16/09/98	0515 UTC	4144 m	320 08 kn			1013.6 mb	18.8 C	16.0 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	19.12	19.12	33.390	23.762	412.8	0.000	5.38	101.5	1.9	0.22	0.0	0.00	0.10	0.04	0	
1	19.12	19.12	33.390	23.762	412.8	0.004	5.38	101.5	1.9	0.22	0.0	0.00	0.10	0.04	1	220
10 ISL	19.13	19.13	33.390	23.760	413.3	0.041	5.38	101.5	2.0	0.21	0.0	0.00	0.09	0.03	10	
14	19.13	19.13	33.390	23.760	413.5	0.058	5.38	101.5	2.0	0.21	0.0	0.00	0.09	0.02	14	219
20 ISL	19.20	19.20	33.434	23.776	412.1	0.083	5.37	101.5	2.0	0.21	0.0	0.00	0.10	0.02	20	
29	19.31	19.30	33.500	23.799	410.3	0.120	5.36	101.5	2.0	0.20	0.0	0.00	0.13	0.03	29	218
30 ISL	19.22	19.21	33.510	23.829	407.4	0.124	5.39	101.9	2.0	0.20	0.0	0.00	0.13	0.03	30	
45	17.66	17.65	33.661	24.332	359.9	0.181	5.83	107.1	2.2	0.20	0.0	0.00	0.20	0.04	45	217
50 ISL	17.39	17.38	33.695	24.423	351.4	0.199	5.80	106.0	2.2	0.20	0.0	0.00	0.22	0.04	50	
60	17.00	16.99	33.721	24.536	341.0	0.234	5.75	104.3	2.2	0.20	0.0	0.00	0.25	0.07	60	216
75	16.33	16.32	33.627	24.620	333.4	0.284	5.70	102.0	2.2	0.23	0.0	0.00	0.33	0.19	75	215
85	16.27	16.26	33.680 D	24.675	328.5	0.317	5.66	101.2	2.3	0.22	0.0	0.00	0.24	0.37	85	214
95	16.20	16.18	33.717	24.720	324.6	0.350	5.62	100.4	2.4	0.22	0.0	0.01	0.24	0.39	95	213
100 ISL	16.19	16.17	33.761	24.756	321.3	0.366	5.57	99.5	2.4	0.22	0.1	0.02	0.23	0.38	100	
105	16.19	16.17	33.816	24.798	317.4	0.382	5.50	98.3	2.4	0.23	0.1	0.04	0.22	0.38	105	212
115	15.44	15.42	33.748	24.915	306.5	0.413	5.34	94.0	3.3	0.34	1.1	0.09	0.20	0.32	115	211
125	14.47	14.45	33.668	25.064	292.4	0.443	5.12	88.3	4.7	0.51	3.4	0.03	0.16	0.23	125	210
140	12.98	12.96	33.580	25.301	269.9	0.485	4.74	79.2	7.9	0.81	7.8	0.02	0.12	0.21	141	209
150 ISL	12.38	12.36	33.572	25.412	259.5	0.512	4.53	74.8	9.7	0.95	9.9	0.01	0.09	0.18	151	
165	11.68	11.66	33.600	25.566	245.0	0.550	4.25	69.1	12.4	1.13	12.7	0.01	0.05	0.12	166	208
194	10.08	10.06	33.746	25.964	207.4	0.615	3.73	58.6	19.9	1.52	19.1	0.01	0.01	0.03	195	207
200 ISL	9.81	9.79	33.780	26.035	200.6	0.628	3.64	56.9	21.6	1.59	20.2	0.01			201	
227	8.84	8.82	33.915	26.298	175.9	0.678	3.26	49.9	28.8	1.86	24.4	0.01			228	206
250 ISL	8.38	8.35	33.977	26.418	164.8	0.718	3.02	45.8	33.2	2.00	26.4	0.01			251	
267	8.14	8.11	34.002	26.474	159.6	0.745	2.86	43.1	36.0	2.08	27.5	0.01			268	205
300 ISL	7.61	7.58	34.031	26.574	150.4	0.796	2.59	38.6	41.7	2.23	29.6	0.01			302	
317	7.36	7.33	34.039	26.616	146.5	0.822	2.44	36.1	44.8	2.31	30.7	0.01			319	204
376	6.66	6.63	34.088	26.751	134.2	0.904	1.61	23.5	57.6	2.65	35.0	0.01			378	203
400 ISL	6.44	6.40	34.110	26.798	129.9	0.936	1.32	19.1	62.6	2.77	36.5	0.01			402	
436	6.17	6.13	34.148	26.863	124.0	0.982	0.95	13.7	69.4	2.93	38.4	0.01			439	202
500 ISL	5.97	5.93	34.238	26.960	115.6	1.058	0.57	8.2	76.6	3.10	39.8	0.01			503	
521	5.91	5.86	34.268	26.991	112.8	1.082	0.45	6.4	78.9	3.15	40.3	0.01			524	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
30 10.7 N	122 55.4 W	16/09/98	1222 UTC	3626 m	310 08 kn			1014.4 mb	19.1 C	16.6 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	19.60	19.60	33.590	23.792	409.9	0.000	5.30	101.0	2.2	0.20	0.1	0.00	0.12	0.04	0	
1	19.60	19.60	33.590	23.792	409.9	0.004	5.30	101.0	2.2	0.20	0.1	0.00	0.12	0.04	1	220
10 ISL	19.61	19.61	33.591	23.790	410.4	0.041	5.33	101.6	2.2	0.20	0.1	0.00	0.13	0.03	10	
15	19.61	19.61	33.593	23.792	410.4	0.062	5.35	102.0	2.2	0.20	0.1	0.00	0.13	0.02	15	219
20 ISL	19.61	19.61	33.595	23.794	410.5	0.082	5.33	101.6	2.2	0.20	0.1	0.00	0.13	0.02	20	
29	19.62	19.61	33.599	23.795	410.7	0.119	5.31	101.2	2.2	0.20	0.1	0.00	0.14	0.03	29	218
30 ISL	19.62	19.61	33.600	23.796	410.7	0.123	5.31	101.2	2.2	0.20	0.1	0.00	0.14	0.03	30	
45	19.54	19.53	33.620	23.832	407.7	0.184	5.44	103.6	2.2	0.20	0.1	0.00	0.19	0.05	45	217
50 ISL	18.86	18.85	33.626	24.010	390.9	0.204	5.58	104.9	2.2	0.20	0.1	0.00	0.19	0.05	50	
59	17.53	17.52	33.652	24.357	358.0	0.238	5.80	106.3	2.2	0.21	0.1	0.00	0.18	0.04	59	216
74	16.75	16.74	33.684	24.567	338.5	0.290	5.74	103.6	2.3	0.22	0.1	0.00	0.28	0.12	74	215
75 ISL	16.73	16.72	33.686	24.573	337.9	0.294	5.73	103.4	2.3	0.22	0.1	0.00	0.28	0.13	75	
83	16.62	16.61	33.689	24.601	335.5	0.321	5.66	101.9	2.4	0.23	0.1	0.00	0.27	0.19	83	214
94	16.18	16.17	33.645	24.669	329.4	0.357	5.78	103.1	2.4	0.22	0.0	0.00	0.25	0.24	94	213
100 ISL	16.15	16.13	33.673	24.697	326.8	0.377	5.68	101.3	2.4	0.23	0.0	0.00	0.23	0.36	100	
104	16.12	16.10	33.700	24.725	324.3	0.390	5.59	99.7	2.4	0.23	0.0	0.00	0.22	0.43	104	212
114	15.66	15.64	33.746	24.865	311.3	0.422	5.38	95.1	3.1	0.31	0.5	0.11	0.21	0.33	114	211
123	14.57	14.55	33.671	25.045	294.2	0.449	5.14	88.8	4.4	0.47	2.7	0.04	0.16	0.23	123	210
125 ISL	14.39	14.37	33.662	25.076	291.2	0.455	5.10	87.8	4.7	0.50	3.2	0.04	0.15	0.22	125	
138	13.39	13.37	33.627	25.256	274.3	0.492	4.90	82.6	6.6	0.69	6.3	0.02	0.12	0.19	139	209
150 ISL	12.30	12.28	33.613	25.459	255.0	0.523	4.64	76.5	9.4	0.91	9.7	0.02	0.09	0.16	151	
164	11.15	11.13	33.629	25.685	233.5	0.558	4.31	69.3	13.2	1.16	13.7	0.01	0.05	0.12	165	208
193	9.96	9.94	33.744	25.982	205.6	0.621	3.70	58.0	20.5	1.56	19.7	0.01	0.01	0.03	194	207
200 ISL	9.70	9.68	33.780	26.054	198.9	0.635	3.58	55.8	22.3	1.64	20.9	0.01			201	
228	8.82	8.80	33.920	26.305	175.2	0.688	3.16	48.4	29.4	1.90	24.9	0.00			229	206
250 ISL	8.39	8.36	33.995	26.430	163.6	0.725	2.85	43.2	34.1	2.06	27.0	0.00			251	
267	8.15	8.12	34.036	26.499	157.3	0.752	2.62	39.5	37.5	2.16	28.3	0.01			268	205
300 ISL	7.72	7.69	34.086	26.602	147.9	0.803	2.19	32.7	43.8	2.36	30.6	0.01			302	
318	7.51	7.48	34.101	26.644	144.0	0.829	1.97	29.3	47.2	2.46	31.8	0.01			320	204
377	6.80	6.77	34.134	26.769	132.6	0.911	1.32	19.3	58.8	2.75	35.6	0.01			379	203
400 ISL	6.65	6.61	34.154	26.805	129.5	0.941	1.13	16.5	62.0	2.84	36.5	0.01			402	
436	6.46	6.42	34.187	26.856	125.0	0.987	0.88	12.8	66.6	2.95	37.7	0.01			439	202
500 ISL	6.02	5.98	34.229	26.947	116.9	1.064	0.57	8.2	75.7	3.11	39.7	0.01			503	
518	5.89	5.84	34.241	26.973	114.6	1.085	0.48	6.9	78.2	3.15	40.2	0.01			521	201

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
29 50.8 N	123 35.9 W	16/09/98	1817 UTC	4052 m	340 10 kn	340 02 06	2	1016.1 mb	19.0 C	17.0 C	35m	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	19.82	19.82	33.718	23.832	406.0	0.000	5.29	101.3	2.2	0.19	0.0	0.00	0.13	0.03	0	
1	19.82	19.82	33.714	23.829	406.4	0.004									1	223
1	19.82	19.82	33.714	23.829	406.4	0.004									1	224
2 A	19.82	19.82	33.718	23.832	406.1	0.008	5.29	101.3	2.2	0.19	0.0	0.00	0.13	0.03	2	222
10 ISL	19.81	19.81	33.715	23.833	406.3	0.041	5.29	101.3	2.2	0.19	0.0	0.00	0.13	0.03	10	
14	19.81	19.81	33.714	23.833	406.5	0.057	5.29	101.3	2.2	0.19	0.0	0.00	0.13	0.03	14	221
20 ISL	19.81	19.81	33.718	23.836	406.5	0.081	5.30	101.5	2.2	0.20	0.1	0.00	0.13	0.03	20	
27 A	19.82	19.82	33.722	23.837	406.6	0.110	5.31	101.7	2.2	0.20	0.1	0.00	0.13	0.04	27	220
30 ISL	19.83	19.82	33.724	23.836	406.8	0.122	5.31	101.7	2.2	0.20	0.1	0.00	0.13	0.04	30	
38	19.84	19.83	33.729	23.837	407.0	0.154	5.31	101.7	2.2	0.19	0.0	0.00	0.14	0.04	38	219
49 A	19.63	19.62	33.734	23.896	401.8	0.199	5.37	102.5	2.2	0.19	0.0	0.00	0.23	0.06	49	218
50 ISL	19.47	19.46	33.734	23.937	397.9	0.203	5.40	102.7	2.2	0.19	0.0	0.00	0.23	0.06	50	
62	17.39	17.38	33.746	24.463	348.1	0.248	5.77	105.5	2.3	0.17	0.0	0.00	0.22	0.08	62	217
75 A	16.72	16.71	33.734	24.612	334.2	0.292	5.77	104.1	2.4	0.18	0.0	0.00	0.24	0.08	75	216
85	16.52	16.51	33.757	24.677	328.4	0.325	5.69	102.3	2.5	0.18	0.0	0.00	0.29	0.16	85	215
95 A	16.49	16.47	33.834	24.743	322.4	0.358	5.63	101.2	2.4	0.18	0.0	0.00	0.25	0.21	95	214
100 ISL	16.41	16.39	33.858	24.780	319.0	0.374	5.59	100.3	2.5	0.19	0.0	0.01	0.22	0.25	100	
104	16.34	16.32	33.885	24.817	315.6	0.386	5.54	99.3	2.7	0.19	0.1	0.01	0.20	0.29	104	213
114	15.54	15.52	33.812	24.942	303.9	0.417	5.38	94.9	3.2	0.27	0.5	0.11	0.18	0.33	114	212
122	15.10	15.08	33.796	25.027	296.0	0.441	5.22	91.2	4.0	0.37	1.9	0.08	0.16	0.34	122	211
125 ISL	14.77	14.75	33.765	25.074	291.5	0.450	5.16	89.6	4.4	0.42	2.6	0.06	0.15	0.30	125	
132 A	13.93	13.91	33.689	25.193	280.2	0.470	5.02	85.6	5.5	0.54	4.3	0.03	0.14	0.20	133	210
148	12.54	12.52	33.638	25.432	257.6	0.513	4.82	79.8	8.2	0.77	7.9	0.02	0.07	0.17	149	209
150 ISL	12.36	12.34	33.635	25.465	254.5	0.518	4.75	78.4	8.8	0.82	8.6	0.02	0.07	0.16	151	
165	11.16	11.14	33.639	25.691	233.0	0.555	4.23	68.0	13.9	1.18	13.9	0.01	0.05	0.08	166	208
194	9.91	9.89	33.736	25.984	205.4	0.619	3.83	60.0	19.9	1.49	18.9	0.01	0.01	0.03	195	207
200 ISL	9.73	9.71	33.764	26.036	200.5	0.631	3.74	58.3	21.2	1.55	19.8	0.01			201	
228	9.09	9.07	33.895	26.243	181.2	0.684	3.29	50.6	27.4	1.81	23.6	0.01			229	206
250 ISL	8.77	8.74	33.984	26.363	170.1	0.723	2.89	44.2	31.6	1.99	25.8	0.01			251	
269	8.55	8.52	34.044	26.445	162.7	0.754	2.57	39.1	35.0	2.13	27.4	0.01			270	205
300 ISL	8.18	8.15	34.092	26.539	154.1	0.804	2.23	33.7	40.0	2.29	29.4	0.01			302	
318	7.97	7.94	34.108	26.583	150.2	0.831	2.06	31.0	43.0	2.37	30.4	0.01			320	204
378	7.35	7.31	34.189	26.736	136.2	0.917	1.22	18.1	54.8	2.73	34.2	0.01			380	203
400 ISL	7.11	7.07	34.202	26.781	132.2	0.946	1.04	15.3	58.7	2.82	35.3	0.01			402	
438	6.70	6.66	34.214	26.846	126.2	0.995	0.81	11.8	65.1	2.94	37.0	0.01			441	202
500 ISL	6.10	6.06	34.234	26.940	117.6	1.071	0.56	8.1	75.0	3.09	39.3	0.01			503	
520	5.90	5.85	34.241	26.971	114.7	1.094	0.48	6.9	78.2	3.14	40.1	0.01			523	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON — CALCOFI CRUISE 9809 — STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 43.6 N	121 33.1 W	27/ 9/98	1837 UTC	25 m		1151 - 1822 PST	1157 PST	1821 PST	642.8 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
1	17.82	33.403	24.094	5.62	103.4	1.7	0.26	0.0	0.00	0.22	0.05	94. A	5.5	5.2	5.4	0.14
9	17.29	33.382	24.206	5.70	103.8	1.3	0.26	0.0	0.00	0.38	0.12					
18	16.53	33.361	24.368	5.84	104.8	1.4	0.28	0.0	0.00	0.46	0.14	33.	13.2	12.0	12.6	0.16
26	16.45	33.376	24.398	5.86	105.0	1.9	0.29	0.0	0.00	0.44	0.15					
34	16.09	33.383	24.486	5.91	105.1	1.8	0.30	0.0	0.00	0.90	0.30	12.	19.0	14.1	16.5	0.12
43	13.61	33.234	24.905	5.65	95.5	3.6	0.54	2.7	0.11	2.78	1.07					
52	12.37	33.330	25.224	5.02	82.7	8.7	0.92	9.0	0.09	0.75	0.73	4.1	4.8	4.8	4.8	0.06
59	12.12	33.414	25.337	4.63	75.9	10.5	1.03	11.0	0.05	0.40	0.60					
67	11.84	33.502	25.458	4.30	70.1	13.3	1.22	13.9	0.04	0.41	0.58	1.6	1.1	1.0	1.1	0.03
81	11.15	33.599	25.660	3.83	61.6	17.0	1.45	17.5	0.02	0.15	0.28					
95	10.67	33.649	25.784	3.68	58.6	18.5	1.52	18.7	0.02	0.09	0.16	0.29	0.02	0.02	0.02	0.02

RV NEW HORIZON — CALCOFI CRUISE 9809 — STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 23.3 N	124 19.7 W	26/ 9/98	1754 UTC	32 m		1205 - 1830 PST	1208 PST	1832 PST	190.0 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
1	18.03	33.131	23.835	5.59	103.1	1.7	0.27	0.1	0.00	0.14	0.03	95. A	2.3	2.2	2.3	0.10
12	17.99	33.128	23.843	5.54	102.1	1.7	0.27	0.1	0.00	0.13	0.04					
25	17.95	33.124	23.850	5.53	101.8	1.6	0.27	0.1	0.00	0.15	0.03	30.	2.7	2.7	2.7	0.10
34	17.81	33.108	23.872	5.62	103.2	1.6	0.27	0.1	0.00	0.17	0.04					
44	16.71	33.098	24.125	5.76	103.5	1.7	0.31	0.1	0.00			12.	2.9	2.8	2.8	0.06
56	16.74	33.468	24.403	5.88	106.0	1.8	0.21	0.1	0.00	0.34	0.15					
67	15.45	33.437	24.672	5.90	103.6	2.0	0.23	0.0	0.00	0.38	0.07	4.0	1.3	1.4	1.4	0.03
78	14.98	33.473	24.802	5.92	103.0	2.2	0.22	0.0	0.00	0.31	0.21					
86	14.66	33.538	24.922	5.96	103.1	2.3	0.22	0.0	0.00	0.26	0.30	1.6	0.55	0.44	0.50	0.01
97	14.28	33.545	25.008	5.86	100.6	2.5	0.25	0.1	0.01	0.24	0.39					
109	13.76	33.555	25.124	5.58	94.8	3.6	0.35	1.1	0.13	0.20	0.35					
119	12.61	33.485	25.299	5.13	85.0	6.3	0.68	6.0	0.03	0.17	0.23	0.33	0.05	0.04	0.05	0.01

RV NEW HORIZON — CALCOFI CRUISE 9809 — STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 49.1 N	121 51.3 W	25/ 9/98	1824 UTC	18 m		1153 - 1826 PST	1157 PST	1828 PST	293.7 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
1	17.82	33.433	24.117	5.56	102.3	1.7	0.26	0.1	0.00	0.27	0.07	92. A	3.5	3.3	3.4	0.15
13	17.82	33.433	24.118	5.59	102.9	1.7	0.26	0.1	0.00	0.29	0.05	33.	6.4	6.6	6.5	0.20
24	17.80	33.433	24.123	5.56	102.3	1.7	0.26	0.1	0.00	0.31	0.08	13.	4.8	4.8	4.8	0.17
37	17.62	33.426	24.161	5.56	101.9	1.8	0.27	0.1	0.00	0.56	0.22	4.3	4.1	4.2	4.2	0.10
48	14.48	33.459	24.898	5.34	92.0	5.5	0.65	4.6	0.19	1.65	0.86	1.7	5.6	5.9	5.8	0.11
58	12.08	33.561	25.458	4.23	69.4	13.4	1.23	13.9	0.07	0.71	0.75					
67	10.59	33.529	25.704	3.92	62.3	17.9	1.50	18.3	0.02	0.13	0.20	0.33	0.02	0.02	0.02	0.03

RV NEW HORIZON — CALCOFI CRUISE 9809 — STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 10.7 N	119 30.6 W	24/ 9/98	1755 UTC	18 m		1144 - 1819 PST	1151 PST	1823 PST	546.4 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
1	19.17	33.396	23.754	5.77	108.9	1.2	0.17	0.1	0.00	1.38	0.12	92. A	14.2	13.3	13.8	0.26
8	19.12	33.394	23.765	5.75	108.5	1.3	0.18	0.1	0.00	1.31	0.17					
14	18.76	33.384	23.849	5.83	109.2	1.3	0.19	0.1	0.00	1.12	0.22	30.	16.3	19.5	17.9	0.27
25	17.32	33.375	24.194	5.75	104.8	2.3	0.28	0.4	0.02	1.51	0.41	12.	16.0	15.4	15.7	0.15
32	15.08	33.400	24.723	5.80	101.1	3.5	0.37	0.4	0.03	0.57	0.28					
37	14.04	33.459	24.990	5.18	88.5	5.1	0.56	2.4	0.22	0.39	0.33	4.3	2.7	2.9	2.8	0.05
48	13.41	33.482	25.137	4.92	82.9	6.9	0.74	6.0	0.11	0.28	0.41	1.7	1.2	0.79	0.99	0.03
57	12.99	33.507	25.240	4.66	77.9	8.5	0.87	8.3	0.06	0.22	0.39					
67	12.39	33.547	25.389	4.38	72.3	10.6	1.03	10.9	0.03	0.16	0.26	0.33	0.05	0.05	0.05	0.03

A) INCUBATION LIGHT INTENSITIES WERE 94, 31, 12, 3.8, 1.5, 0.30 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON — CALCOFI CRUISE 9809 — STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 14.7 N	121 26.4 W	23/ 9/98	1803 UTC	20 m		1157 - 1823 PST	1158 PST	1822 PST	339.3 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
1	17.70	33.439	24.151	5.68U	104.3	1.9	0.27	0.0	0.00	0.29	0.09	93. A	4.7	5.1	4.9	0.15
15	17.60	33.439	24.175	5.56	101.9	1.9	0.26	0.0	0.00	0.34	0.07	32.	7.3	7.7	7.5	0.11
28	17.56	33.429	24.178	5.61	102.7	1.8	0.27	0.0	0.00	0.42	0.09	12.	6.4	6.5	6.4	0.11
42	14.03	33.101	24.716	5.97	101.7	2.4	0.36	0.0	0.00	0.90	0.45	4.0	6.0	6.3	6.2	0.12
48	13.59	33.158	24.850	5.87	99.1	2.8	0.45	1.0	0.25	1.16	0.74					
54	13.19	33.145	24.921	5.66	94.8	3.2	0.53	1.9	0.43	0.84	0.59	1.6	2.0	1.7	1.9	0.05
65	12.19	33.121	25.096	5.26	86.2	6.0	0.72	5.6	0.08	0.29	0.41					
75	11.36	33.318	25.403	4.56	73.5	11.0	1.09	11.9	0.02	0.13	0.24	0.32	0.05	0.05	0.05	0.02

RV NEW HORIZON — CALCOFI CRUISE 9809 — STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 55.0 N	124 9.6 W	22/ 9/98	1802 UTC	42 m		1208 - 1831 PST	1210 PST	1833 PST	224.3 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
1	19.15	33.572	23.893	5.39	101.8	1.9	0.23	0.0	0.00	0.08	0.01	96. A	1.7	1.7	1.7	0.06
17	19.09	33.573	23.910	5.39	101.7	1.9	0.22	0.0	0.00	0.08	0.02					
32	19.09	33.600	23.931	5.40	101.9	1.8	0.21	0.0	0.00	0.10	0.01	31.	2.4	2.3	2.3	0.07
45	19.36	33.830	24.039	5.40	102.6	1.8	0.19	0.0	0.00	0.16	0.03					
58	17.82	33.839	24.430	5.79	106.8	1.9	0.17	0.0	0.00	0.15	0.04	12.	2.0	1.9	2.0	0.08
69	17.11	33.810	24.579	5.86	106.6	2.0	0.18	0.0	0.00	0.17	0.06					
78	16.87	33.848	24.665	5.77	104.5	2.0	0.18	0.0	0.00	0.19	0.09					
88	16.71	33.928	24.764	5.63	101.7	2.0	0.18	0.0	0.00	0.24	0.18	4.0	1.4	1.4	1.4	0.06
97	16.59	33.991	24.840	5.57	100.4	2.2	0.18	0.0	0.00	0.22	0.35					
105	16.55	34.018	24.871	5.53	99.6	2.2	0.18	0.0	0.01	0.21	0.47					
115	16.25	33.997	24.924	5.57	99.7	2.4	0.18	0.0	0.05	0.21	0.40	1.5	1.1	0.99	1.0	0.01
126	16.04	34.001	24.976	5.52	98.4	2.5	0.20	0.0	0.11	0.19	0.36					
136	15.83	34.008	25.029	5.42	96.3	2.7	0.24	0.5	0.11	0.14	0.26					
147	14.89	33.908	25.160	5.22	90.9	3.7	0.39	2.4	0.02	0.11	0.19					
156	14.11	33.839	25.272	5.18	88.8	4.7	0.49	3.8	0.02	0.07	0.18	0.33	0.04	0.04	0.04	0.02

RV NEW HORIZON — CALCOFI CRUISE 9809 — STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 19.5 N	119 40.2 W	20/ 9/98	1835 UTC	22 m		1154 - 1827 PST	1152 PST	1825 PST	461.8 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
1	18.82	33.358	23.813	5.54	103.9	1.9	0.24	0.0	0.00	0.54	0.09	93. A	12.1	12.0	12.0	0.22
9	18.63	33.354	23.858	5.63	105.2	1.8	0.24	0.0	0.00	0.54	0.09					
17	15.98	33.287	24.436	5.84	103.6	2.4	0.29	0.1	0.01	0.86	0.18	31.	18.9	18.8	18.9	0.24
24	14.12	33.388	24.918	5.40	92.3	4.8	0.54	3.2	0.12	0.61	0.38					
30	12.98	33.462	25.207	4.94	82.5	7.5	0.78	7.0	0.11	0.39	0.44	12.	3.9	3.5	3.7	0.04
39	12.49	33.500	25.332	4.71	77.9	9.6	0.93	9.3	0.12	0.32	0.40					
47	12.04	33.535	25.445	4.51	73.9	11.1	1.03	10.9	0.13	0.25	0.34	3.8	1.5	1.5	1.5	0.05
54	11.61	33.574	25.556	4.28	69.5	13.3	1.17	13.2	0.10	0.16	0.24					
59	11.31	33.602	25.633	4.13	66.7	14.6	1.26	14.6	0.08	0.13	0.25	1.6	0.40	0.42	0.41	0.02

RV NEW HORIZON — CALCOFI CRUISE 9809 — STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 19.4 N	121 42.8 W	21/ 9/98	1753 UTC	28 m		1201 - 1830 PST	1200 PST	1834 PST	131.7 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
1	17.87	33.161	23.897	5.50	101.2	1.9	0.25	0.0	0.00	0.14	0.04	95. A	1.8	1.7	1.8	0.16
11	17.84	33.156	23.901	5.53	101.7	1.9	0.25	0.0	0.00	0.13	0.03					
21	17.83	33.153	23.901	5.55	102.0	1.9	0.25	0.0	0.00	0.13	0.04	32.	2.5	2.8	2.6	0.10
30	17.82	33.150	23.902	5.52	101.4	1.9	0.25	0.0	0.00	0.13	0.04					
38	17.82	33.155	23.906	5.55	102.0	1.8	0.25	0.0	0.00	0.15	0.03	12.	1.6	1.5	1.5	0.08
50	17.82	33.152	23.904	5.53	101.6	1.7	0.25	0.0	0.00	0.14	0.04					
60	16.47	33.335	24.363	5.89	105.5	1.9	0.25	0.0	0.00	0.39	0.10	3.7	1.1	1.1	1.1	0.08
67	15.74	33.316	24.514	5.93	104.7	1.9	0.25	0.0	0.00	0.22	0.13					
76	15.45	33.406	24.648	5.83	102.4	2.0	0.25	0.0	0.00	0.25	0.20	1.6	0.56	0.62	0.59	0.02
86	15.27	33.558	24.805	5.67	99.3	2.4	0.26	0.1	0.02	0.25	0.41					
97	14.90	33.652	24.958	5.51	95.8	3.1	0.32	0.5	0.20	0.20	0.34					
104	14.51	33.643	25.035	5.35	92.3	3.7	0.38	1.7	0.18	0.19	0.36	0.33	0.05	0.04	0.05	0.01

A) INCUBATION LIGHT INTENSITIES WERE 94, 31, 12, 3.8, 1.5, 0.30 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON | CALCOFI CRUISE 9809 | STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 29.0 N	117 45.8 W	19/ 9/98	1842 UTC	13 m		1143 - 1838 PST	1145 PST	1818 PST	1092.7 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
1	18.69	33.339	23.831	6.21	116.2	2.6	0.21	0.1	0.00	1.78	0.06	89. A	43.3	41.4	42.3	0.46
9	18.44	33.318	23.878	6.41	119.3	2.8	0.20	0.1	0.00	2.49	0.06	35.	62.4	72.9	67.6	0.43
18	15.97	33.338	24.478	6.05	107.3	2.8	0.27	0.1	0.00	1.47	0.31	12.	21.6	21.2	21.4	0.75
28	14.83	33.317	24.713	5.19	90.0	5.2	0.53	0.2	0.05	2.07	0.42	3.7	9.3	9.5	9.4	0.41
36	14.42	33.456	24.908	5.43	93.4	4.3	0.46	1.4	0.12	0.55	0.33	1.4	1.7	1.8	1.8	0.04
42	14.15	33.478	24.982	5.24	89.7	5.1	0.56	2.6	0.18	0.49	0.36					
48	13.46	33.494	25.136	4.71	79.5	8.3	0.84	6.4	0.21	0.33	0.37	0.35	0.14	0.09	0.12	0.05

RV NEW HORIZON | CALCOFI CRUISE 9809 | STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 24.4 N	119 57.8 W	18/ 9/98	1801 UTC	21 m		1153 - 1822 PST	1153 PST	1826 PST	307.2 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	18.01	33.262	23.940	5.54	102.2	2.0	0.24	0.1	0.00	0.22	0.05	93. A	2.3	2.2	2.2	0.12
16	18.01	33.265	23.943	5.54	102.2	1.9	0.24	0.1	0.00	0.24	0.07	31.	5.3	5.3	5.3	0.14
31	17.44	33.243	24.064	5.65	103.1	2.0	0.26	0.1	0.00	0.34	0.12	10.	5.3	5.4	5.3	0.11
45	15.35	33.243	24.544	5.77	101.0	2.7	0.31	0.3	0.02	0.81	0.58	3.7	6.2	6.3	6.3	0.08
51	14.86	33.256	24.660	5.73	99.4	2.9	0.34	0.5	0.03	0.85	0.61					
58	14.68	33.242	24.688	5.74	99.2	2.9	0.35	0.6	0.04	0.77	0.62	1.4	2.8	2.9	2.8	0.04
68	13.83	33.303	24.914	5.43	92.2	4.2	0.49	2.5	0.13	0.45	0.50					
78	12.94	33.506	25.250	4.86	81.1	7.6	0.78	7.3	0.05	0.20	0.35	0.33	0.09	0.09	0.09	0.02

RV NEW HORIZON | CALCOFI CRUISE 9809 | STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 25.0 N	121 59.6 W	17/ 9/98	1910 UTC	26 m		1210 - 1831 PST	1203 PST	1833 PST	129.2 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	18.08	33.184	23.863	5.47	101.0	2.1	0.25	0.0	0.00	0.11	0.04	94. A	2.0	2.0	2.0	0.12
9	18.07	33.177	23.861	5.47	101.0	1.9	0.25	0.0	0.00	0.13	0.03					
20	18.04	33.176	23.868	5.48	101.1	1.8	0.25	0.0	0.00	0.12	0.03	31.	2.5	2.4	2.5	0.13
36	18.03	33.172	23.868	5.48	101.1	1.9	0.25	0.0	0.00	0.13	0.04	12.	1.6	1.5	1.5	0.12
46	17.95	33.168	23.885	5.51	101.5	1.9	0.25	0.0	0.00	0.19	0.07					
56	16.94	33.160	24.120	5.72	103.3	2.0	0.26	0.0	0.00	0.30	0.12	3.7	1.3	1.3	1.3	0.14
64	16.11	33.212	24.351	5.83	103.6	2.1	0.27	0.0	0.00	0.31	0.20					
70	15.53	33.310	24.556	5.85	102.9	2.0	0.27	0.0	0.00	0.34	0.27	1.6	0.75	0.67	0.71	0.04
80	15.34	33.385	24.656	5.79	101.5	2.1	0.26	0.0	0.00	0.31	0.39					
88	15.17	33.457	24.749	5.72	99.9	2.3	0.26	0.0	0.01	0.24	0.36					
97	14.65	33.598	24.970	5.44	94.1	3.4	0.34	1.1	0.18	0.18	0.29	0.33	0.05	0.06	0.06	0.01

RV NEW HORIZON | CALCOFI CRUISE 9809 | STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 57.4 N	117 18.4 W	13/ 9/98	1821 UTC	20 m		1145 - 1825 PST	1145 PST	1823 PST	977.0 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
1	21.23	33.300	23.140	5.99	117.4	2.5	0.17	0.0	0.00	2.39	0.09	93. A	55.5	61.7	58.6	0.59
8	16.10	33.257	24.386	6.07	107.9	3.1	0.27	0.0	0.00	0.44	0.14					
15	15.10	33.279	24.625	5.78	100.7	3.3	0.35	0.0	0.00	0.53	0.19	32.	14.0	15.6	14.8	0.14
22	14.93	33.320	24.694	5.74	99.7	3.5	0.38	0.0	0.00	0.55	0.24					
27	14.66	33.384	24.801	5.71	98.7	3.6	0.39	0.0	0.01	0.99	0.43	13.	15.6	15.3	15.5	0.16
36	14.52	33.415	24.855	5.60	96.5	3.9	0.41	0.1	0.04	1.10	0.48					
43	14.37	33.472	24.931	5.24	90.1	5.1	0.53	0.9	0.19	1.18	0.42	3.7	6.3	6.7	6.5	0.37
55	14.00	33.496	25.027	4.78	81.6	7.5	0.74	4.4	0.42	0.39	0.35	1.5	1.4	1.3	1.3	0.07

A) INCUBATION LIGHT INTENSITIES WERE 94, 31, 12, 3.8, 1.5, 0.30 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 10.8 N	118 53.7 W	14/ 9/98	1823 UTC	27 m		1150 - 1832 PST	1152 PST	1829 PST	349.8 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
1	20.25	33.475	23.535	5.25	101.2					0.20	0.04	94. A	6.4	5.5	5.9	0.08
11	20.18	33.467	23.547	5.26	101.2					0.21	0.05					
20	19.99	33.456	23.589	5.32	102.0	1.8	0.20	0.1	0.00	0.25	0.06	32.	5.3	5.3	5.3	0.12
38	16.07	33.465	24.553	6.11	108.7	2.2	0.28	0.1	0.00	0.42	0.22	12.	5.5	5.4	5.5	0.11
48	14.82	33.459	24.825	5.67	98.4	3.1	0.38	0.2	0.01	0.57	0.41					
57	14.21	33.480	24.971	5.37	92.0	4.1	0.50	1.3	0.12	0.66	0.50	3.9	3.3	3.7	3.5	0.04
66	13.41	33.459	25.120	5.02	84.6	6.2	0.70	5.6	0.20	0.50	0.50					
74	13.44	33.531	25.170	4.78	80.6	6.6	0.77	6.2	0.27	0.43	0.37	1.5	1.1	1.1	1.1	0.02
83	12.69	33.566	25.346	4.36	72.4	9.5	1.00	10.3	0.14	0.28	0.32					
91	12.08	33.601	25.490	4.10	67.3	11.9	1.18	12.9	0.06	0.20	0.23					
102	11.63	33.633	25.599	3.91	63.5	13.7	1.27	14.6	0.04	0.16	0.19	0.30	0.02	0.02	0.02	0.03

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 10.1 N	120 55.7 W	15/ 9/98	1826 UTC	23 m		1156 - 1834 PST	1159 PST	1838 PST	270.2 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	17.70	33.278	24.027	5.54	101.6	2.3	0.28	0.1	0.00	0.22	0.04	94. A	4.8	5.1	5.0	0.22
18	17.53	33.299	24.085	5.58	102.0	2.2	0.27	0.1	0.00	0.28	0.08	30.	5.2	5.4	5.3	0.11
32	17.22	33.288	24.151	5.59	101.6	2.2	0.29	0.1	0.00	0.43	0.16	12.	5.3	5.5	5.4	0.10
40	16.43	33.239	24.298	5.72	102.3	2.3	0.30	0.1	0.00	0.45	0.27					
48	14.94	33.134	24.549	5.93	102.9	2.4	0.32	0.1	0.01	0.57	0.36	4.1	2.7	2.9	2.8	0.04
56	14.47	33.204	24.703	5.85	100.6	2.6	0.33	0.3	0.08	0.50	0.40					
62	14.73	33.366	24.773	5.75	99.5	2.7	0.28	0.3	0.04	0.35	0.39	1.6	0.85	0.91	0.88	0.01
75	14.40	33.432	24.895	5.76	99.1	2.8	0.26	0.2	0.04	0.26	0.27					
87	13.46	33.400	25.065	5.33	89.9	4.8	0.50	3.4	0.08	0.18	0.24	0.30	0.03	0.03	0.03	0.02

RV NEW HORIZON CALCOFI CRUISE 9809 STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
29 50.8 N	123 35.9 W	16/ 9/98	1817 UTC	35 m		1205 - 1841 PST	1209 PST	1842 PST	183.8 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	19.82	33.718	23.832	5.29	101.3	2.2	0.19	0.0	0.00	0.13	0.03	92. A	2.4	2.5	2.5	0.10
14	19.81	33.714	23.833	5.29	101.3	2.2	0.19	0.0	0.00	0.13	0.03					
27	19.82	33.722	23.837	5.31	101.7	2.2	0.20	0.1	0.00	0.13	0.04	31.	2.4	2.5	2.5	0.07
38	19.84	33.729	23.837	5.31	101.7	2.2	0.19	0.0	0.00	0.14	0.04					
49	19.63	33.734	23.896	5.37	102.5	2.2	0.19	0.0	0.00	0.23	0.06	12.	2.3	2.3	2.3	0.06
62	17.39	33.746	24.463	5.77	105.5	2.3	0.17	0.0	0.00	0.22	0.08					
75	16.72	33.734	24.612	5.77	104.1	2.4	0.18	0.0	0.00	0.24	0.08	3.7	0.82	0.92	0.87	0.02
85	16.52	33.757	24.677	5.69	102.3	2.5	0.18	0.0	0.00	0.29	0.16					
95	16.49	33.834	24.743	5.63	101.2	2.4	0.18	0.0	0.00	0.25	0.21	1.6	0.45	0.45	0.45	0.01
104	16.34	33.885	24.817	5.54	99.3	2.7	0.19	0.1	0.01	0.20	0.29					
114	15.54	33.812	24.942	5.38	94.9	3.2	0.27	0.5	0.11	0.18	0.33					
122	15.10	33.796	25.027	5.22	91.2	4.0	0.37	1.9	0.08	0.16	0.34					
132	13.93	33.689	25.193	5.02	85.6	5.5	0.54	4.3	0.03	0.14	0.20	0.31	0.04	0.03	0.04	0.01

A) INCUBATION LIGHT INTENSITIES WERE 94, 31, 12, 3.8, 1.5, 0.30 PERCENT RESPECTIVELY.

CalCOFI Cruise 9809

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 05.2	120 47.7	09/27	2135	2143	141	67	42	42
77	51	35 01.2	120 55.1	09/27	1918	1939	411	203	119	119
77	55	34 54.2	121 12.0	09/27	1614	1636	382	210	31	31
77	60	34 43.2	121 32.7	09/27	0934	0956	412	201	32	32
77	70	34 23.9	122 15.1	09/27	0444	0505	403	213	62	62
77	80	34 03.2	122 56.8	09/26	2253	2315	417	207	38	38
77	90	33 43.7	123 38.4	09/26	1713	1734	407	213	27	27
77	100	33 22.8	124 19.4	09/26	0845	0907	411	207	17	17
80	51	34 27.1	120 32.6	09/24	1903	1911	162	76	80	80
80	55	34 20.3	120 50.6	09/24	2216	2238	450	199	129	118
80	60	34 08.9	121 09.9	09/25	0211	0233	419	222	33	33
80	70	33 48.7	121 50.6	09/25	0839	0901	458	208	20	20
80	80	33 28.7	122 31.8	09/25	1659	1721	408	211	12	12
80	90	33 08.6	123 13.8	09/25	2234	2256	424	209	45	45
80	100	32 49.8	123 55.2	09/26	0414	0436	415	213	51	31
82	47	34 16.0	120 02.5	09/24	1502	1523	433	213	28	28
83	40.6	34 13.5	119 25.1	09/24	0652	0656	76	21	53	53
83	42	34 10.7	119 30.6	09/24	0757	0811	286	131	28	28
83	51	33 52.5	120 09.1	09/24	0026	0038	262	115	38	38
83	55	33 44.7	120 25.8	09/23	2120	2142	452	208	60	60
83	60	33 35.7	120 45.0	09/23	1739	1800	418	212	29	29
83	70	33 14.4	121 26.0	09/23	0909	0931	446	199	29	29
83	80	32 55.0	122 07.7	09/23	0433	0454	404	214	30	30
83	90	32 35.7	122 49.7	09/22	2239	2300	469	204	23	23
83	100	32 15.6	123 29.9	09/22	1646	1707	457	210	13	13
83	110	31 54.4	124 09.9	09/22	0901	0923	462	204	11	11
87	33	33 53.2	118 29.7	09/19	2022	2028	126	46	48	48
87	35	33 49.1	118 36.9	09/19	2253	2314	447	206	31	31
87	40	33 39.1	118 57.3	09/20	0308	0329	435	202	58	58
87	45	33 30.8	119 17.6	09/20	0722	0742	418	207	26	26
87	50	33 20.2	119 39.7	09/20	1208	1216	166	67	42	42
87	55	33 09.6	120 01.2	09/20	1647	1708	453	214	29	29
87	60	32 59.6	120 21.8	09/20	2047	2109	460	208	35	35
87	70	32 39.7	121 02.8	09/21	0239	0301	474	204	30	30
87	80	32 19.6	121 43.2	09/21	0723	0743	426	214	24	24
87	90	32 00.0	122 24.6	09/21	1647	1709	452	210	13	13
87	100	31 40.0	123 05.4	09/21	2226	2247	456	204	35	35
87	110	31 20.4	123 45.0	09/22	0417	0438	435	209	25	25
90	28	33 28.7	117 46.2	09/19	1125	1131	109	64	110	110
90	30	33 25.0	117 53.7	09/19	1435	1456	411	193	10	10
90	35	33 15.0	118 15.2	09/19	0549	0609	402	216	20	20
90	37	33 11.4	118 24.0	09/19	0252	0313	441	200	52	52
90	35	32 56.4	118 56.9	09/18	2142	2203	444	211	72	72
90	53	32 38.9	119 29.3	09/18	1602	1624	451	208	29	29
90	60	32 25.2	119 57.8	09/18	0704	0726	454	215	26	26
90	70	32 05.2	120 39.7	09/18	0145	0206	475	202	38	38
90	80	31 45.6	121 19.4	09/17	1938	1959	425	216	31	31
90	90	31 25.0	122 01.4	09/17	1329	1350	419	210	14	14
90	100	31 04.9	122 40.1	09/17	0612	0633	434	214	14	14
90	110	30 45.5	123 20.7	09/17	0023	0044	421	208	28	28
90	120	30 25.4	124 00.7	09/16	1844	1904	419	211	17	17
93	26.7	32 57.3	117 19.0	09/13	1159	1220	446	195	16	16
93	28	32 54.7	117 24.2	09/13	1453	1514	407	201	7	7
93	30	32 50.5	117 32.1	09/13	1826	1848	431	208	19	19
93	35	32 41.1	117 53.0	09/13	2216	2237	454	192	40	40
93	40	32 30.6	118 14.7	09/14	0216	0237	436	193	71	71
93	45	32 21.2	118 33.6	09/14	0723	0745	442	204	23	23
93	50	32 11.2	118 53.9	09/14	1257	1318	433	209	37	37
93	55	32 01.3	119 13.8	09/14	1743	1804	438	217	48	48
93	60	31 51.1	119 34.9	09/14	2145	2207	480	198	40	40
93	70	31 30.7	120 15.0	09/15	0339	0400	432	211	42	42
93	80	31 10.3	120 55.2	09/15	0822	0844	450	205	24	24
93	90	30 50.8	121 35.8	09/15	1638	1700	462	216	17	17
93	100	30 30.8	122 16.4	09/15	2211	2233	470	206	19	19
93	110	30 10.8	122 55.6	09/16	0316	0337	448	199	20	20
93	120	29 50.5	123 35.0	09/16	0922	0944	453	204	7	7

FIGURES

Cruise 9810

1. CalCOFI Cruise 9810, track and station positions.

2. Sections along CalCOFI line 90 (vertical exaggeration, 1000): A) potential density and geostrophic velocity (+ = northward); B) temperature; C) salinity; D) oxygen saturation; E) oxygen; F) chlorophyll-*a*; and G) phaeopigments.

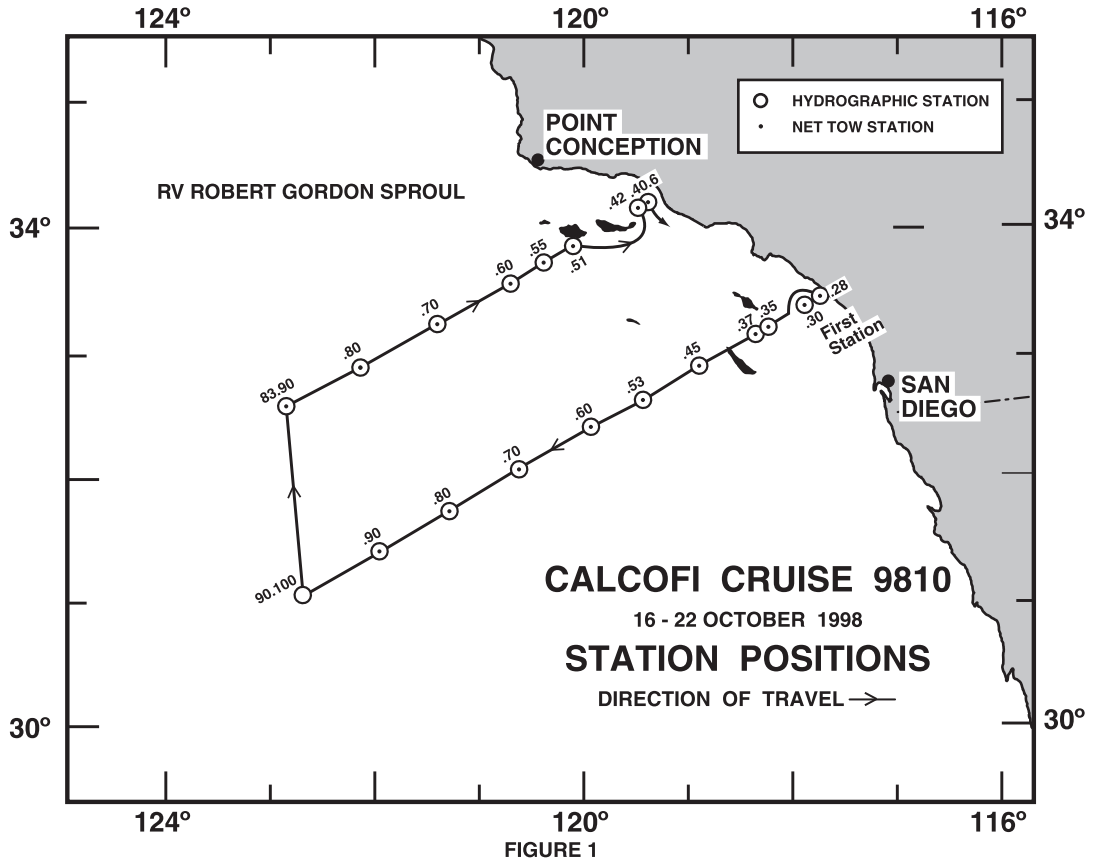

FIGURE 1

CALCOFI CRUISE 9810

16 - 19 OCTOBER 1998

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90
GEOSTROPHIC VELOCITY RELATIVE TO 500m (cm/s)

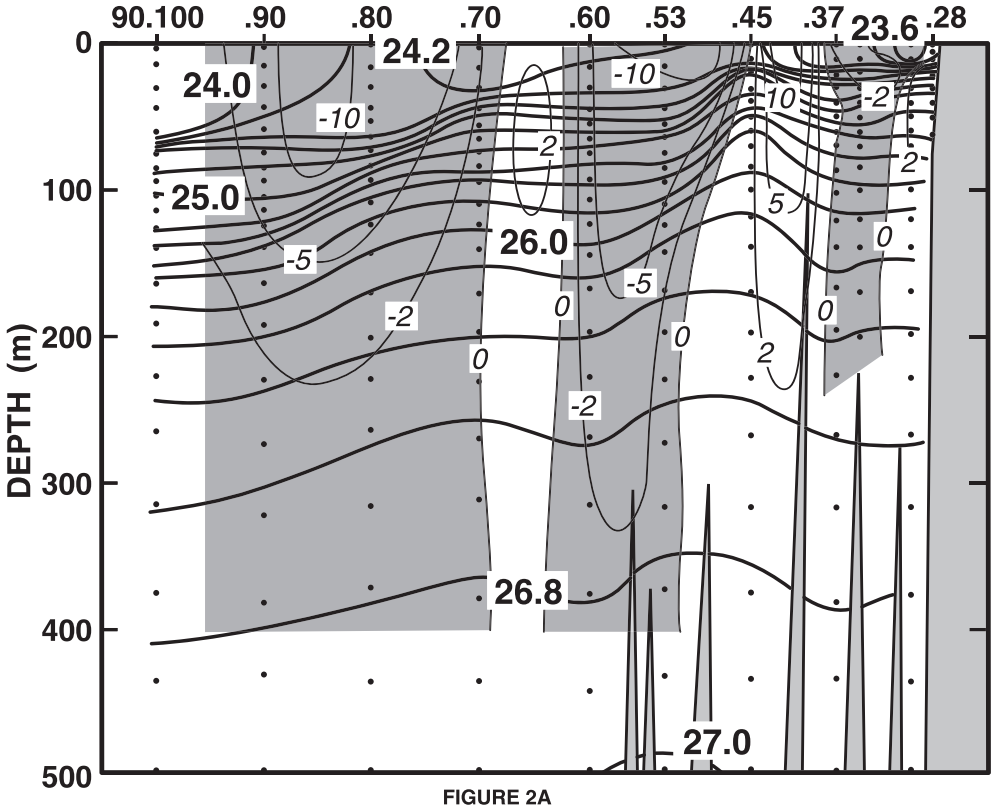

FIGURE 2A

CALCOFI CRUISE 9810

16 - 19 OCTOBER 1998

TEMPERATURE (ºC) ALONG CALCOFI LINE 90

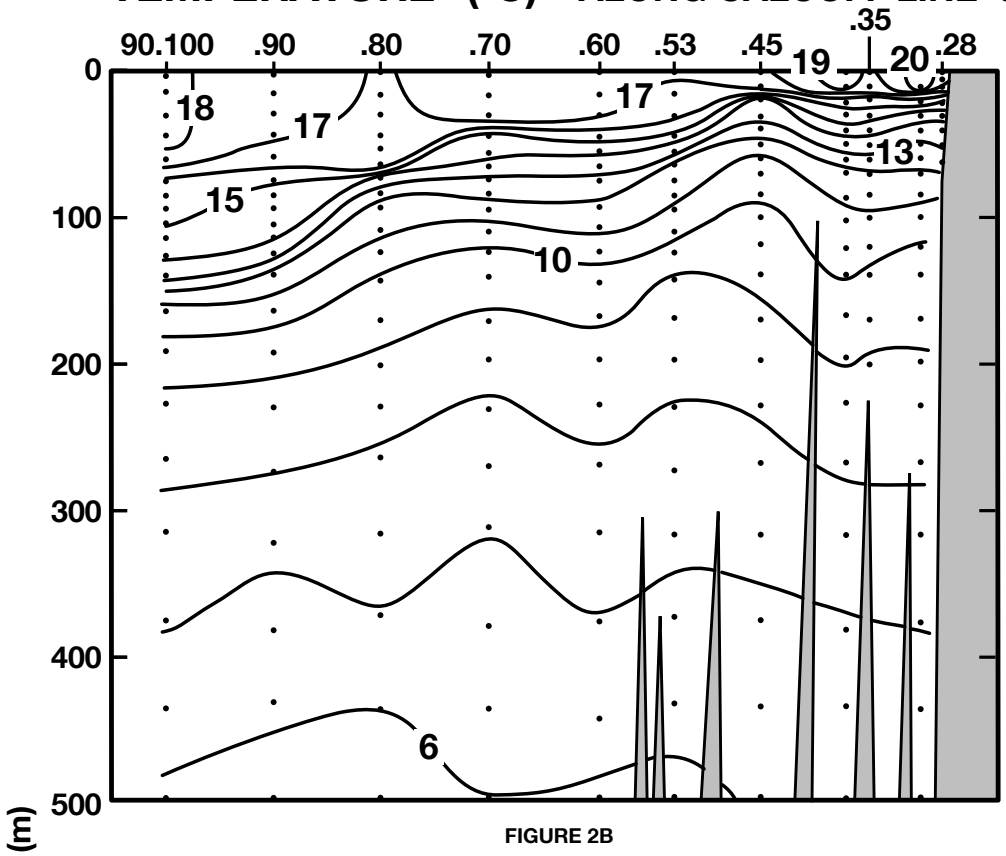

FIGURE 2B

SALINITY ALONG CALCOFI LINE 90

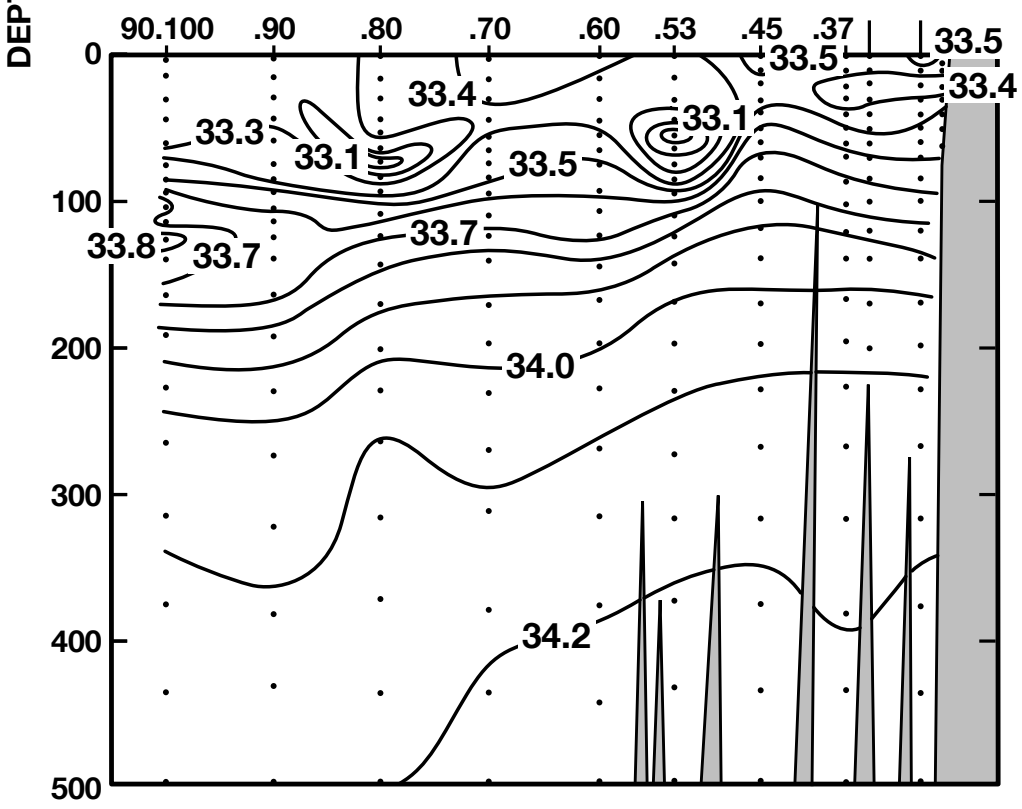

FIGURE 2C

CALCOFI CRUISE 9810

16 - 19 OCTOBER 1998

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

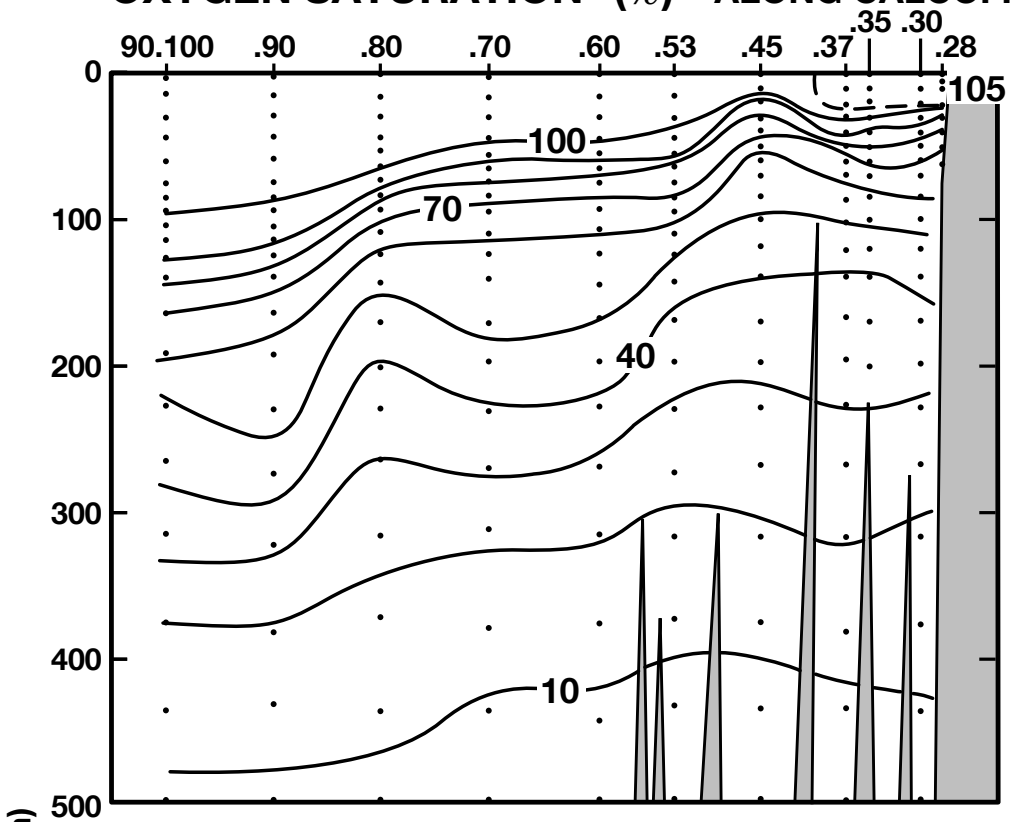

FIGURE 2D

OXYGEN (ml/l) ALONG CALCOFI LINE 90

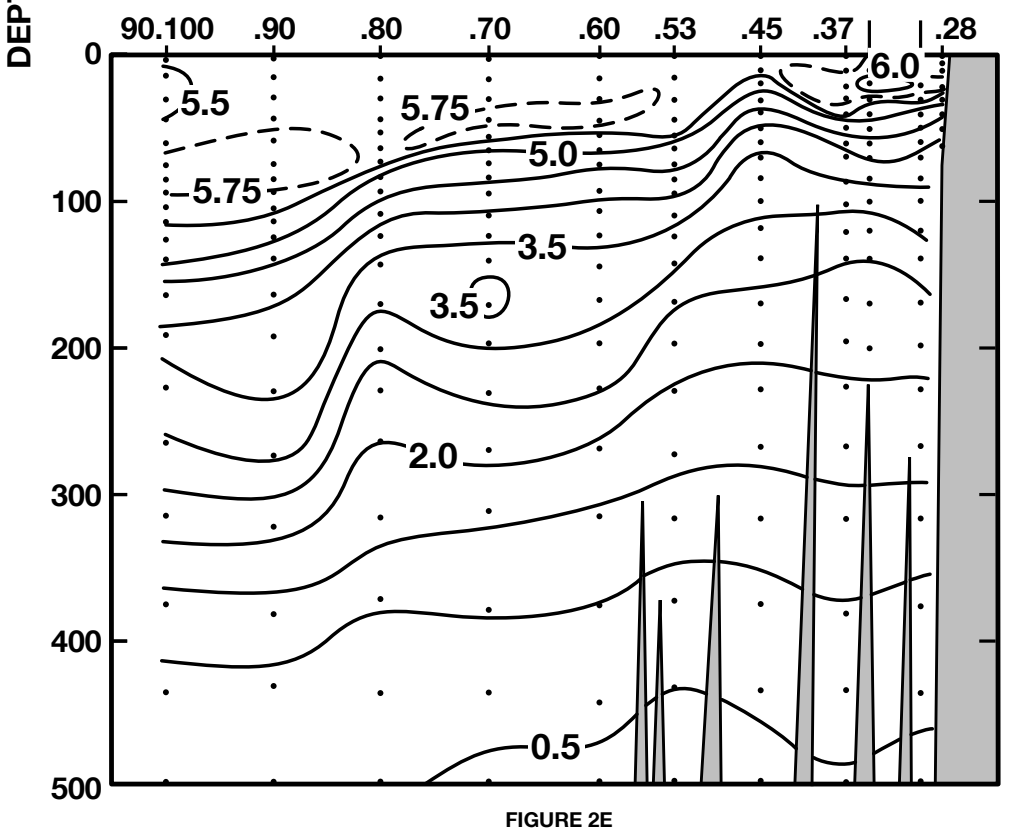

FIGURE 2E

CALCOFI CRUISE 9810

16 - 19 0CTOBER 1998

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

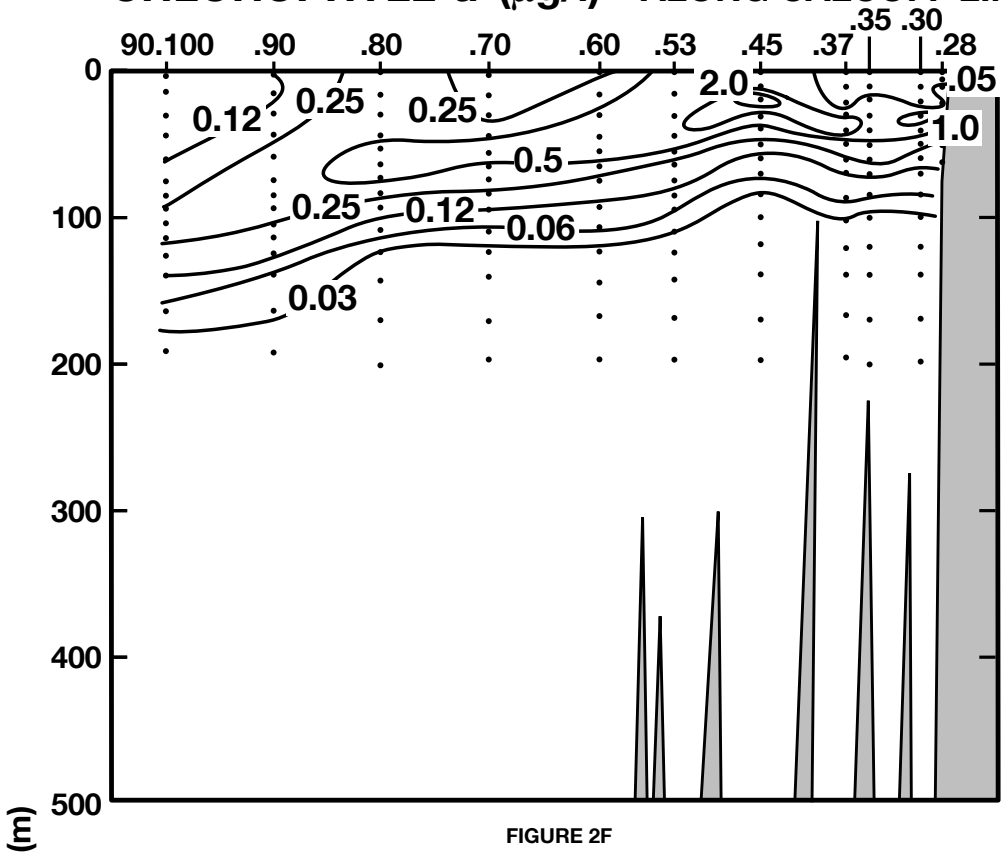

FIGURE 2F

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

DEPTH (m)

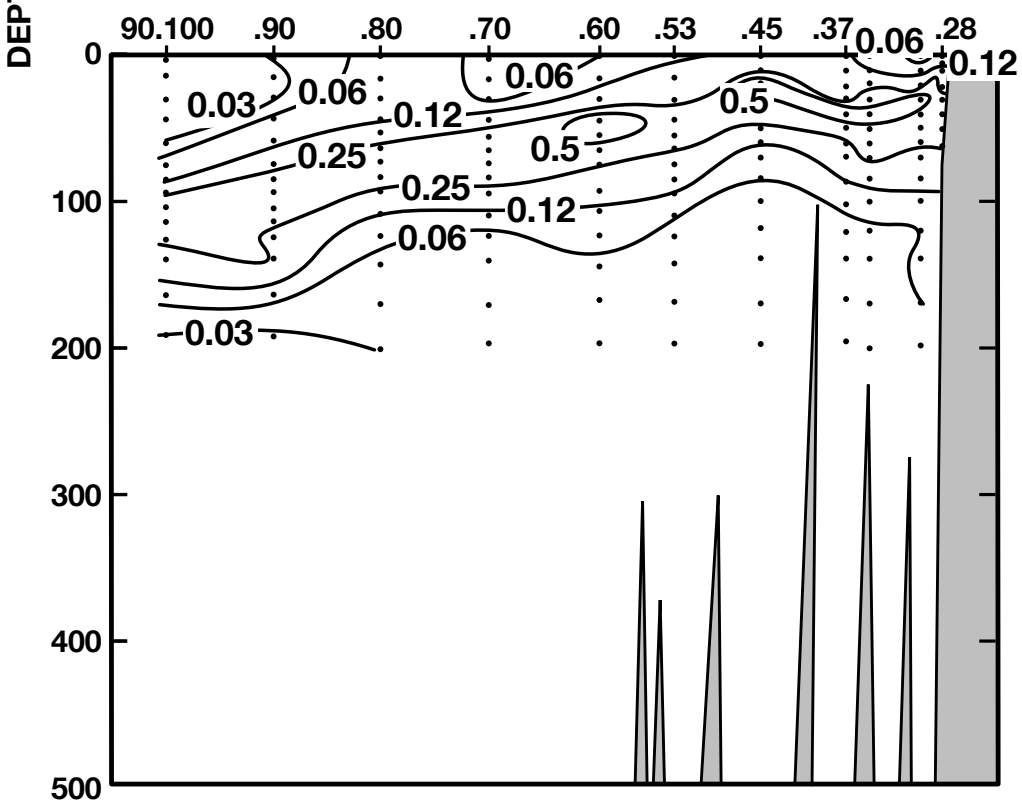

FIGURE 2G

PERSONNEL

CalCOFI Cruise 9810

SHIP'S CAPTAIN

Louis H. Zimm, RV *Robert Gordon Sproul*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

Renger, Edward H. (Chief Scientist)	Staff Research Associate, SIO
Allen, Theodore L.	Volunteer
Baiz, Shad L.	Resident Technician, SIO
Baldwin, Robert F.	Volunteer
Gruber, Dennis W.	Staff Research Associate, SIO
Hays, Amy E.	Fishery Biololgist, NMFS
Hyrenbach, K. David	Graduate Student, SIO
Navarro, Carla A.	Volunteer
Ramirez, Fernando	Staff Research Associate, SIO
Swensen, Daryl L.	Biological Technician, NMFS
Toschiaddi, Ginger S.	Biological Technician, NMFS
Wells, James A.	Marine Technician, SIO

RV ROBERT GORDON SPROUL — CALCOFI CRUISE 9810 — STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 13.4 N	119 24.7 W	21/10/98	1651 UTC	37 m	140 11 kn	140 01 05	1	1015.0 mb	17.3 c	16.1 c		3/8	AS

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	17.34	17.34	33.407	24.212	369.8	0.000	5.75	104.8					0.94	0.22	0	
1	17.34	17.34	33.407	24.213	369.8	0.004	5.75	104.8					0.94	0.22	1	205
6	17.17	17.17	33.416	24.260	365.5	0.022	5.71	103.8					1.07	0.31	6	204
10 ISL	16.81	16.81	33.422	24.349	357.1	0.037	5.70	102.9					1.15	0.41	10	
11	16.70	16.70	33.423	24.376	354.6	0.040	5.70	102.7					1.16	0.43	11	203
20	15.83	15.83	33.432	24.582	335.2	0.071	5.58	98.8					1.21	0.52	20	202
30	14.15	14.15	33.411	24.930	302.3	0.103	5.10	87.3					0.68	0.36	30	201

RV ROBERT GORDON SPROUL — CALCOFI CRUISE 9810 — STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 10.6 N	119 30.4 W	21/10/98	1440 UTC	145 m	130 14 kn	130 01 05	1	1014.0 mb	18.0 c	16.1 c		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	17.48	17.48	33.397	24.171	373.7	0.000	5.79	105.9					0.76	0.15	0	
1	17.48	17.48	33.397	24.171	373.7	0.004	5.79	105.9					0.76	0.15	1	212
9	17.37	17.37	33.396	24.197	371.5	0.034	5.80	105.8					0.82	0.18	9	211
10 ISL	17.27	17.27	33.396	24.221	369.3	0.037	5.78	105.2					0.86	0.19	10	
19	16.20	16.20	33.415	24.485	344.4	0.069	5.62	100.2					1.16	0.31	19	210
20 ISL	16.11	16.11	33.420	24.509	342.2	0.073	5.65	100.6					1.15	0.33	20	
29	15.31	15.31	33.460	24.719	322.4	0.103	5.86	102.7					0.96	0.43	29	209
30 ISL	15.24	15.24	33.461	24.735	320.9	0.106	5.83	102.0					0.95	0.43	30	
40	14.31	14.30	33.470	24.942	301.5	0.137	5.28	90.7					0.82	0.35	40	208
50	12.74	12.73	33.532	25.309	266.7	0.165	4.41	73.3					0.35	0.33	50	207
60	11.86	11.85	33.604	25.533	245.6	0.191	3.97	64.8					0.19	0.26	60	206
69	11.82	11.81	33.607	25.543	244.8	0.213	3.96	64.6					0.18	0.20	69	205
75 ISL	11.30	11.29	33.677	25.693	230.6	0.227	3.63	58.6					0.12	0.17	75	
85	10.34	10.33	33.817	25.972	204.2	0.249	3.00	47.5					0.02	0.12	85	204
99	10.09	10.08	33.874	26.060	196.2	0.277	2.73	43.0					0.01	0.08	99	203
100 ISL	10.07	10.06	33.879	26.067	195.5	0.279	2.71	42.6					0.01	0.08	100	
114	9.77	9.76	33.933	26.160	187.0	0.306	2.55	39.9					0.01	0.10	115	202
125 ISL	9.64	9.63	33.949	26.194	183.9	0.326	2.50	39.0					0.01	0.07	126	
135	9.52	9.50	33.964	26.226	181.1	0.345	2.46	38.3					0.01	0.05	136	201

RV ROBERT GORDON SPROUL — CALCOFI CRUISE 9810 — STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 52.7 N	120 9.0 W	21/10/98	0736 UTC	108 m	300 09 kn			1012.1 mb	17.5 c	16.0 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	17.58	17.58	33.423	24.167	374.1	0.000	5.72	104.8					0.45	0.14	0	
1	17.58	17.58	33.423	24.167	374.1	0.004	5.72	104.8					0.45	0.14	1	210
10 ISL	16.87	16.87	33.417	24.331	358.8	0.037	5.76	104.1					0.66	0.19	10	
11	16.71	16.71	33.417	24.369	355.3	0.040	5.77	103.9					0.70	0.19	11	209
20	14.53	14.53	33.438	24.870	307.7	0.070	5.43	93.7					0.98	0.40	20	208
30 ISL	13.49	13.49	33.480	25.119	284.3	0.100	4.96	83.8					0.89	0.47	30	
31	13.43	13.43	33.484	25.134	282.9	0.103	4.91	82.8					0.88	0.48	31	207
41	12.81	12.80	33.545 U			0.130	4.48 U	74.6 U					0.57	0.39	41	206
50 ISL	12.60	12.59	33.540	25.342	263.5	0.154	4.47	74.1					0.51	0.40	50	
51	12.58	12.57	33.543	25.349	263.0	0.157	4.45	73.8					0.51	0.40	51	205
60	12.10	12.09	33.591	25.478	250.8	0.180	4.18	68.6					0.33	0.35	60	204
70	11.30	11.29	33.688	25.702	229.7	0.204	3.67	59.2					0.17	0.22	70	203
75 ISL	11.14	11.13	33.707	25.746	225.6	0.215	3.63	58.4					0.16	0.21	75	
80	11.06	11.05	33.716	25.767	223.7	0.227	3.58	57.5					0.14	0.20	80	202
90	10.89	10.88	33.732	25.810	219.8	0.249	3.47	55.5					0.11	0.20	90	201

RV ROBERT GORDON SPROUL — CALCOFI CRUISE 9810 — STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 44.6 N	120 24.9 W	21/10/98	0346 UTC	1021 m	320 10 kn			1012.6 mb	17.0 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	16.10	16.10	33.426	24.515	340.9	0.000	5.86	104.3					1.09	0.27	0	
1	16.10	16.10	33.426	24.515	341.0	0.003	5.86	104.3					1.09	0.27	1	220
10	15.82	15.82	33.428	24.580	335.0	0.034	5.85	103.5					1.42	0.43	10	219
20 ISL	15.66	15.66	33.424	24.613	332.2	0.067	5.79	102.1					1.71	0.43	20	
21	15.64	15.64	33.423	24.617	331.9	0.071	5.78	101.9					1.72	0.43	21	218
30	13.70	13.70	33.417	25.027	293.0	0.099	5.11	86.6					1.49	0.67	30	217
39	11.84	11.84	33.522	25.473	250.8	0.123	4.18	68.2							39	216
49	11.43	11.42	33.625	25.629	236.2	0.147	3.88	62.8					0.28	0.35	49	215
50 ISL	11.37	11.36	33.632	25.645	234.6	0.150	3.85	62.2					0.26	0.34	50	
61	10.77	10.76	33.693	25.800	220.1	0.175	3.53	56.3					0.13	0.21	61	214
70	10.47	10.46	33.741	25.890	211.7	0.194	3.36	53.3					0.06	0.16	70	213
75 ISL	10.32	10.31	33.756	25.928	208.2	0.205	3.31	52.3					0.05	0.14	75	
85	10.07	10.06	33.777	25.987	202.8	0.225	3.25	51.1					0.03	0.12	85	212
99	9.89	9.88	33.814	26.047	197.4	0.253	3.12	48.9					0.02	0.09	100	211
100 ISL	9.87	9.86	33.819	26.054	196.7	0.255	3.10	48.5					0.02	0.09	101	
119	9.47	9.46	33.917	26.197	183.5	0.291	2.76	42.9					0.01	0.08	120	210
125 ISL	9.32	9.31	33.942	26.241	179.4	0.302	2.68	41.5					0.01	0.08	126	
139	9.00	8.99	33.991	26.331	171.1	0.327	2.51	38.6					0.01	0.08	140	209
150 ISL	8.86	8.84	34.014	26.371	167.4	0.345	2.41	36.9					0.01	0.08	151	
169	8.69	8.67	34.042	26.420	163.1	0.377	2.25	34.4					0.00	0.07	170	208
199	8.40	8.38	34.100	26.510	155.0	0.425	1.89	28.7					0.00	0.06	200	207
200 ISL	8.39	8.37	34.101	26.513	154.8	0.426	1.88	28.5							201	
228	8.16	8.14	34.122	26.564	150.4	0.469	1.75	26.4							229	206
250 ISL	7.92	7.89	34.151	26.623	145.1	0.501	1.53	23.0							252	
267	7.70	7.67	34.172	26.672	140.7	0.526	1.36	20.3							269	205
300 ISL	7.20	7.17	34.178	26.748	133.7	0.571	1.17	17.3							302	
317	6.98	6.95	34.179	26.779	130.9	0.593	1.09	16.0							319	204
378	6.78	6.74	34.223	26.842	125.8	0.672	0.80	11.7							380	203
400 ISL	6.60	6.56	34.224	26.867	123.6	0.699	0.72	10.5							403	
438	6.25	6.21	34.226	26.914	119.3	0.745	0.61	8.8							441	202
500 ISL	5.89	5.85	34.273	26.998	112.0	0.817	0.43	6.2							504	
510	5.83	5.79	34.281	27.011	110.7	0.828	0.40	5.7							514	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 34.8 N	120 45.0 W	20/10/98	2315 UTC	1277 m	300 05 kn	310 03 08	1	1012.5 mb	17.6 C	16.2 C		3/8	AS

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	17.25	17.25	33.464	24.277	363.6	0.000	5.62	102.3					0.54	0.16	0	
1		17.25	17.25	33.464	24.278	363.6	0.004	5.62	102.3					0.54	0.16	1	219
10		17.17	17.17	33.471	24.302	361.6	0.036	5.62	102.2					0.51	0.17	10	218
20		17.15	17.15	33.474	24.310	361.2	0.072	5.60	101.8					0.62	0.21	20	217
30	ISL	17.11	17.11	33.468	24.315	361.0	0.109	5.59	101.5					0.74	0.22	30	
31		17.11	17.10	33.467	24.314	361.1	0.112	5.59	101.5					0.75	0.22	31	216
41		16.68	16.67	33.468	24.416	351.7	0.148	5.50	99.0					0.67	0.22	41	215
50	ISL	14.37	14.36	33.394	24.871	308.5	0.177	5.03	86.4					0.45	0.29	50	
61		11.70	11.69	33.424	25.423	256.0	0.209	4.36	70.9					0.21	0.34	61	214
69		11.57	11.56	33.510	25.514	247.6	0.229	4.05	65.7					0.19	0.29	69	211
75	ISL	11.24	11.23	33.529	25.589	240.5	0.243	3.96	63.8					0.15	0.23	75	
85		10.65	10.64	33.558	25.717	228.5	0.267	3.82	60.8					0.07	0.13	85	213
100		10.34	10.33	33.720	25.897	211.7	0.300	3.21	50.8					0.05	0.11	100	212
119		9.13	9.12	33.840	26.192	183.9	0.337	3.05	47.0					0.00	0.05	120	210
125	ISL	9.08	9.07	33.883	26.233	180.1	0.348	2.96	45.6					0.00	0.05	126	
139		8.95	8.94	33.933	26.293	174.6	0.373	2.80	43.0					0.00	0.04	140	209
150	ISL	8.77	8.75	33.954	26.338	170.5	0.392	2.88	44.0					0.00	0.04	151	
169		8.40	8.38	33.972	26.409	164.0	0.424	3.04	46.1					0.00	0.04	170	208
199		7.73	7.71	34.019	26.546	151.3	0.471	2.70	40.3					0.00	0.03	200	207
200	ISL	7.72	7.70	34.020	26.548	151.1	0.473	2.69	40.2							201	
229		7.49	7.47	34.042	26.599	146.7	0.516	2.31	34.3							230	206
250	ISL	7.16	7.14	34.042	26.646	142.5	0.546	2.17	32.0							251	
267		6.88	6.86	34.041	26.683	139.0	0.570	2.08	30.5							269	205
300	ISL	6.62	6.59	34.054	26.729	135.1	0.615	1.80	26.2							302	
315		6.53	6.50	34.063	26.748	133.4	0.636	1.65	24.0							317	204
377		5.98	5.95	34.115	26.860	123.3	0.715	0.98	14.1							379	203
400	ISL	5.95	5.92	34.154	26.895	120.3	0.743	0.79	11.3							403	
436		5.92	5.88	34.214	26.947	115.9	0.786	0.57	8.2							439	202
500	ISL	5.51	5.47	34.249	27.025	108.9	0.858	0.38	5.4							503	
515		5.41	5.37	34.258	27.044	107.2	0.874	0.34	4.8							519	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 14.7 N	121 26.6 W	20/10/98	1612 UTC	3802 m	320 19 kn	320 04 05	1	1014.4 mb	16.7 C	15.7 C		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	17.18	17.18	33.510	24.329	358.6	0.000	5.56	101.1					0.53	0.22	0	
2		17.18	17.18	33.510	24.329	358.7	0.007	5.56	101.1					0.53	0.22	2	220
10	ISL	17.18	17.18	33.510	24.330	359.0	0.036	5.57	101.3					0.54	0.23	10	
15		17.18	17.18	33.510	24.330	359.1	0.054	5.57	101.3					0.55	0.23	15	219
20	ISL	17.18	17.18	33.510	24.330	359.2	0.072	5.57	101.3					0.53	0.22	20	
30	ISL	17.18	17.18	33.510	24.331	359.5	0.108	5.56	101.1					0.48	0.20	30	
31		17.18	17.17	33.510	24.331	359.6	0.111	5.56	101.1					0.48	0.20	31	218
44		17.17	17.16	33.512	24.335	359.6	0.158	5.55	100.9					0.48	0.18	44	217
50	ISL	16.39	16.38	33.494	24.503	343.7	0.179	5.44	97.4					0.52	0.27	50	
55		15.36	15.35	33.494	24.735	321.7	0.196	5.17	90.7					0.54	0.35	55	216
66		11.88	11.87	33.659	25.572	242.0	0.227	3.64	59.5					0.37	0.44	66	215
75		10.85	10.84	33.711	25.801	220.4	0.248	3.10	49.6					0.18	0.32	75	214
85		10.50	10.49	33.750	25.892	211.8	0.269	2.92	46.3					0.12	0.22	85	213
95		10.03	10.02	33.818	26.026	199.3	0.290	2.72	42.7					0.05	0.13	95	212
100	ISL	9.89	9.88	33.842	26.068	195.3	0.300	2.66	41.7					0.04	0.11	100	
111		9.66	9.65	33.881	26.137	189.0	0.321	2.58	40.2					0.02	0.08	112	211
125	ISL	9.39	9.38	33.921	26.213	182.1	0.347	2.53	39.2					0.01	0.07	126	
126		9.37	9.36	33.924	26.219	181.5	0.349	2.53	39.2					0.01	0.07	127	210
144		9.13	9.11	33.972	26.295	174.6	0.381	2.48	38.2					0.01	0.08	145	209
150	ISL	9.06	9.04	33.985	26.317	172.7	0.391	2.44	37.6					0.01	0.08	151	
168		8.88	8.86	34.022	26.374	167.5	0.422	2.30	35.3					0.01	0.06	169	208
196		8.61	8.59	34.083	26.465	159.4	0.467	2.01	30.6					0.00	0.05	197	207
200	ISL	8.54	8.52	34.089	26.480	158.0	0.474	1.98	30.1							201	
227		8.03	8.01	34.116	26.579	148.9	0.515	1.76	26.5							228	206
250	ISL	7.69	7.67	34.131	26.641	143.3	0.549	1.60	23.9							251	
267		7.49	7.46	34.141	26.677	140.0	0.573	1.47	21.9							269	205
300	ISL	7.23	7.20	34.179	26.744	134.1	0.618	1.14	16.8							302	
318		7.10	7.07	34.198	26.778	131.1	0.642	0.97	14.3							320	204
375		6.48	6.45	34.222	26.881	121.8	0.714	0.67	9.7							377	203
400	ISL	6.14	6.10	34.218	26.922	118.0	0.744	0.59	8.5							403	
435		5.70	5.66	34.212	26.972	113.3	0.784	0.51	7.3							438	202
500	ISL	5.29	5.25	34.229	27.035	107.7	0.856	0.40	5.6							503	
515		5.19	5.15	34.233	27.050	106.3	0.872	0.37	5.2							519	201

RV ROBERT GORDON SPROUL | CALCOFI CRUISE 9810 | STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 54.2 N	122 7.9 W	20/10/98	0858 UTC	4188 m	330 14 kn			1014.3 mb	15.3 C	13.9 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	16.19	16.19	33.207	24.327	358.9	0.000	5.75	102.4					0.23	0.08	0	
2	16.19	16.19	33.207	24.327	359.0	0.007	5.75	102.4					0.23	0.08	2	220
10 ISL	16.19	16.19	33.206	24.326	359.3	0.036	5.76	102.6					0.23	0.06	10	
15	16.19	16.19	33.206	24.326	359.4	0.054	5.77	102.7					0.23	0.05	15	219
20 ISL	16.18	16.18	33.212	24.333	358.9	0.072	5.76	102.5					0.23	0.06	20	
30	16.16	16.16	33.224	24.348	357.9	0.108	5.75	102.3					0.22	0.09	30	218
44	16.08	16.07	33.223	24.365	356.6	0.158	5.79	102.9					0.28	0.08	44	217
50 ISL	15.27	15.26	33.152	24.491	344.7	0.179	5.88	102.8					0.31	0.20	50	
54	14.69	14.68	33.109	24.583	336.0	0.192	5.93	102.4					0.33	0.28	54	216
64	13.93	13.92	33.099	24.735	321.8	0.225	5.84	99.3					0.37	0.29	64	215
75	13.32	13.31	33.170	24.914	304.9	0.260	5.61	94.2					0.44	0.38	75	214
84	12.67	12.66	33.260	25.113	286.3	0.286	5.17	85.7					0.26	0.32	84	213
95	12.23	12.22	33.385	25.294	269.2	0.317	4.90	80.5					0.16	0.31	95	212
100 ISL	11.81	11.80	33.421	25.401	259.1	0.330	4.70	76.6					0.13	0.25	100	
109	10.98	10.97	33.483	25.601	240.2	0.353	4.33	69.3					0.08	0.14	109	211
123	10.07	10.06	33.610	25.858	215.9	0.384	3.88	60.9					0.03	0.05	124	210
125 ISL	10.00	9.99	33.627	25.883	213.6	0.389	3.83	60.1					0.03	0.05	126	
144	9.55	9.53	33.773	26.072	195.9	0.428	3.45	53.6					0.01	0.02	145	209
150 ISL	9.41	9.39	33.814	26.127	190.8	0.439	3.27	50.7					0.01	0.02	151	
169	8.98	8.96	33.921	26.280	176.5	0.474	2.88	44.2					0.00	0.03	170	208
199	8.42	8.40	33.989	26.420	163.6	0.525	3.40	51.6					0.00	0.02	200	207
200 ISL	8.40	8.38	33.990	26.424	163.2	0.527	3.40	51.6							201	
228	7.87	7.85	33.999	26.510	155.3	0.571	3.12	46.8							229	206
250 ISL	7.56	7.54	34.004	26.559	150.9	0.605	2.94	43.7							251	
269	7.36	7.33	34.012	26.594	147.8	0.633	2.75	40.7							271	205
300 ISL	7.18	7.15	34.050	26.650	142.9	0.678	2.18	32.2							302	
317	7.10	7.07	34.072	26.678	140.5	0.703	1.86	27.4							319	204
378	6.51	6.48	34.107	26.786	130.8	0.785	1.26	18.3							380	203
400 ISL	6.35	6.31	34.130	26.825	127.2	0.814	1.06	15.3							403	
440	6.07	6.03	34.171	26.894	121.1	0.863	0.76	10.9							443	202
500 ISL	5.61	5.57	34.203	26.977	113.6	0.934	0.53	7.5							503	
526	5.41	5.37	34.218	27.013	110.3	0.963	0.43	6.1							530	201

RV ROBERT GORDON SPROUL | CALCOFI CRUISE 9810 | STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 34.2 N	122 48.7 W	20/10/98	0120 UTC	4290 m	330 16 kn	360 06 10	1	1014.2 mb	16.1 C	14.8 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	17.22	17.22	33.166	24.056	384.7	0.000	5.59	101.5					0.11	0.04	0	
2	17.22	17.22	33.166	24.056	384.8	0.008	5.59	101.5					0.11	0.04	2	220
10 ISL	17.22	17.22	33.166	24.057	385.0	0.038	5.56	101.0					0.11	0.04	10	
15	17.22	17.22	33.166	24.057	385.1	0.058	5.55	100.8					0.12	0.04	15	219
20 ISL	17.20	17.20	33.164	24.060	385.0	0.077	5.56	101.0					0.13	0.04	20	
30	17.13	17.13	33.162	24.076	383.8	0.115	5.60	101.5					0.15	0.04	30	218
44	16.99	16.98	33.177	24.120	380.0	0.169	5.61	101.4					0.14	0.04	44	217
50 ISL	16.91	16.90	33.173	24.136	378.7	0.192	5.63	101.6					0.18	0.05	50	
59	16.72	16.71	33.170	24.179	374.9	0.226	5.67	102.0					0.25	0.07	59	216
75	16.09	16.08	33.218	24.360	358.1	0.284	5.78	102.7					0.34	0.15	75	215
82	15.28	15.27	33.279	24.588	336.5	0.309	5.94	103.9					0.34	0.18	82	214
93	14.32	14.31	33.200	24.733	322.9	0.345	5.87	100.6					0.38	0.27	93	213
100 ISL	13.62	13.61	33.223	24.896	307.5	0.367	5.64	95.3					0.35	0.32	100	
103	13.31	13.30	33.236	24.968	300.6	0.376	5.51	92.5					0.33	0.33	103	212
113	12.39	12.38	33.211	25.129	285.4	0.405	5.07	83.5					0.25	0.26	113	211
123	11.32	11.30	33.437	25.504	249.8	0.432	4.46	71.9					0.09	0.15	124	210
125 ISL	11.22	11.20	33.466	25.545	245.9	0.437	4.44	71.4					0.09	0.14	126	
139	10.86	10.84	33.596	25.711	230.4	0.470	4.29	68.5					0.06	0.09	140	209
150 ISL	10.48	10.46	33.668	25.833	218.9	0.495	4.20	66.6					0.04	0.07	151	
162	10.04	10.02	33.730	25.957	207.3	0.521	4.09	64.2					0.03	0.05	163	208
195	8.91	8.89	33.886	26.264	178.5	0.584	3.51	53.8					0.00	0.03	196	207
200 ISL	8.80	8.78	33.904	26.295	175.6	0.593	3.43	52.5							201	
228	8.34	8.32	33.979	26.425	163.6	0.641	3.03	45.9							229	206
250 ISL	8.06	8.03	34.018	26.498	157.0	0.676	2.72	40.9							251	
265	7.89	7.86	34.037	26.538	153.4	0.699	2.51	37.6							266	205
300 ISL	7.48	7.45	34.073	26.626	145.4	0.751	2.02	30.0							302	
315	7.32	7.29	34.084	26.657	142.6	0.773	1.83	27.1							317	204
375	6.74	6.71	34.111	26.759	133.5	0.856	1.34	19.6							377	203
400 ISL	6.48	6.44	34.121	26.801	129.7	0.889	1.19	17.3							402	
440	6.12	6.08	34.142	26.865	123.9	0.940	0.97	14.0							443	202
500 ISL	5.86	5.82	34.196	26.940	117.3	1.012	0.64	9.2							503	
512	5.81	5.77	34.207	26.955	116.0	1.026	0.58	8.3							515	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 29.1 N	117 46.3 W	17/10/98	0237 UTC	74 m	310 14 kn			1013.2 mb	19.5 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	19.76	19.76	33.463	23.653	423.1	0.000	5.60	107.0					0.31	0.08	0	
1		19.76	19.76	33.463	23.654	423.1	0.004	5.60	107.0					0.31	0.08	1	208
5		19.71	19.71	33.461	23.665	422.2	0.021	5.60	106.8					0.38	0.08	5	207
10		18.93	18.93	33.450	23.856	404.1	0.042	5.63	105.9					0.62	0.23	10	206
20	ISL	16.16	16.16	33.356	24.449	347.9	0.079	5.93	105.6					0.47	0.20	20	
21		15.87	15.87	33.353	24.512	341.9	0.083	5.94	105.2					0.45	0.19	21	205
30		14.21	14.21	33.454	24.950	300.4	0.112	5.13	87.9					0.70	0.44	30	204
40		13.59	13.58	33.512	25.124	284.2	0.141	4.61	78.0					0.41	0.41	40	203
50		13.04	13.03	33.558	25.270	270.5	0.169	4.18	70.0					0.24	0.30	50	202
62		12.67	12.66	33.588	25.366	261.6	0.201	3.94	65.4					0.17	0.24	62	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 25.2 N	117 54.3 W	16/10/98	2313 UTC	622 m	240 08 kn	240 02 07	0	1012.2 mb	20.9 C	20.1 C		0/8

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	20.83	20.83	33.539	23.429	444.5	0.000	5.50	107.2					0.30	0.05	0	
1		20.83	20.83	33.539	23.429	444.5	0.004	5.50	107.2					0.30	0.05	1	220
10		20.20	20.20	33.486	23.557	432.7	0.044	5.64	108.6					0.30	0.08	10	219
20		16.13	16.13	33.338	24.442	348.6	0.083	5.99	106.6					0.36	0.15	20	218
30		14.27	14.27	33.412	24.905	304.7	0.116	5.63	96.6					1.01	0.61	30	217
40		13.48	13.47	33.475	25.117	284.7	0.145	4.84	81.7					0.55	0.44	40	216
49		12.89	12.88	33.512	25.264	271.0	0.170	4.51	75.2					0.26	0.34	49	215
50	ISL	12.85	12.84	33.515	25.274	270.0	0.173	4.49	74.8					0.25	0.33	50	
59		12.47	12.46	33.539	25.367	261.4	0.197	4.34	71.8					0.18	0.29	59	214
69		11.85	11.84	33.597	25.530	246.1	0.222	3.95	64.5					0.09	0.18	69	213
75	ISL	11.56	11.55	33.616	25.599	239.7	0.237	3.86	62.6					0.08	0.16	75	
84		11.20	11.19	33.644	25.686	231.5	0.258	3.76	60.5					0.06	0.14	84	212
99		10.70	10.69	33.733	25.845	216.7	0.292	3.34	53.2					0.03	0.09	99	211
100	ISL	10.66	10.65	33.738	25.856	215.7	0.294	3.32	52.9					0.03	0.09	100	
120		9.95	9.94	33.825	26.046	198.0	0.335	3.08	48.3					0.01	0.06	121	210
125	ISL	9.87	9.86	33.847	26.076	195.2	0.345	3.00	47.0					0.01	0.06	126	
139		9.73	9.71	33.906	26.146	188.8	0.372	2.77	43.3					0.00	0.07	140	209
150	ISL	9.60	9.58	33.949	26.201	183.8	0.392	2.60	40.5					0.00	0.07	151	
169		9.36	9.34	34.012	26.290	175.7	0.426	2.37	36.7					0.00	0.06	170	208
199		8.89	8.87	34.075	26.415	164.3	0.477	2.20	33.8					0.00	0.05	200	207
200	ISL	8.88	8.86	34.077	26.418	164.0	0.479	2.19	33.6							201	
229		8.61	8.59	34.119	26.494	157.3	0.526	1.93	29.4							230	206
250	ISL	8.38	8.35	34.136	26.542	153.0	0.558	1.81	27.5							251	
268		8.16	8.13	34.147	26.584	149.2	0.585	1.72	26.0							270	205
300	ISL	7.72	7.69	34.170	26.668	141.6	0.632	1.45	21.7							302	
318		7.49	7.46	34.183	26.711	137.7	0.657	1.29	19.2							320	204
378		7.03	6.99	34.215	26.801	129.8	0.737	0.89	13.1							380	203
400	ISL	6.83	6.79	34.230	26.841	126.3	0.765	0.77	11.3							403	
438		6.51	6.47	34.258	26.906	120.4	0.812	0.60	8.7							441	202
500	ISL	6.14	6.10	34.300	26.988	113.2	0.885	0.37	5.3							503	
516		6.04	5.99	34.311	27.009	111.3	0.903	0.31	4.5							520	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 15.6 N	118 14.7 W	17/10/98	0801 UTC	225 m	020 05 kn			1015.1 mb	18.5 C	16.5 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	18.60	18.60	33.418	23.914	398.3	0.000	5.75	107.4					0.35	0.11	0	
2		18.60	18.60	33.418	23.914	398.3	0.008	5.75	107.4					0.35	0.11	2	214
10		18.58	18.58	33.415	23.917	398.3	0.040	5.77	107.7					0.36	0.12	10	213
19		16.72	16.72	33.337	24.305	361.6	0.074	6.02	108.4					0.51	0.16	19	212
20	ISL	16.57	16.57	33.336	24.339	358.4	0.078	6.01	107.9					0.55	0.18	20	
30		15.27	15.27	33.371	24.659	328.1	0.112	5.74	100.4					0.91	0.37	30	211
40		14.09	14.08	33.464	24.983	297.5	0.143	5.21	89.1					0.71	0.55	40	210
50		13.55	13.54	33.495	25.119	284.9	0.172	4.83	81.7					0.48	0.46	50	209
60		12.88	12.87	33.572	25.313	266.6	0.200	4.32	72.1					0.28	0.31	60	208
70		11.90	11.89	33.604	25.526	246.5	0.226	4.04	66.0					0.13	0.29	70	207
75	ISL	11.60	11.59	33.629	25.601	239.4	0.238	3.87	62.9					0.09	0.24	75	
84		11.26	11.25	33.677	25.701	230.1	0.259	3.58	57.7					0.06	0.15	84	206
100		10.92	10.91	33.757	25.824	218.7	0.295	3.21	51.4					0.02	0.08	100	205
120		10.30	10.29	33.881	26.030	199.6	0.337	2.70	42.7					0.01	0.05	121	204
125	ISL	10.19	10.18	33.903	26.066	196.2	0.346	2.63	41.5					0.01	0.05	126	
139		9.92	9.90	33.953	26.151	188.4	0.373	2.50	39.2					0.00	0.05	140	203
150	ISL	9.75	9.73	33.984	26.204	183.6	0.394	2.41	37.7					0.00	0.05	151	
170		9.47	9.45	34.026	26.283	176.4	0.430	2.28	35.4					0.00	0.05	171	202
200	ISL	8.93	8.91	34.070	26.405	165.3	0.481	2.13	32.7					0.00	0.04	201	
201		8.91	8.89	34.072	26.409	164.9	0.483	2.13	32.7					0.00	0.04	202	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 11.3 N	118 23.6 W	17/10/98	1130 UTC	1181 m	200 04 kn			1014.1 mb	18.9 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	19.62	19.62	33.476	23.700	418.7	0.000	5.51	105.0					0.35	0.15	0	
1		19.62	19.62	33.476	23.700	418.7	0.004	5.51	105.0					0.35	0.15	1	220
10		19.19	19.19	33.454	23.793	410.1	0.041	5.60	105.8					0.41	0.14	10	219
20	ISL	16.72	16.72	33.363	24.325	359.7	0.080	5.91	106.4					0.44	0.14	20	
21		16.45	16.45	33.358	24.384	354.1	0.084	5.94	106.4					0.44	0.14	21	218
29		15.35	15.35	33.370	24.641	329.9	0.111	5.91	103.6					0.55	0.22	29	217
30	ISL	15.30	15.30	33.373	24.654	328.6	0.114	5.88	103.0					0.62	0.26	30	
40		14.71	14.70	33.417	24.816	313.5	0.146	5.62	97.3					1.13	0.62	40	216
49		13.30	13.29	33.517	25.186	278.4	0.173	4.66	78.4					0.45	0.45	49	215
50	ISL	13.18	13.17	33.526	25.217	275.5	0.176	4.59	77.0					0.41	0.43	50	
60		12.25	12.24	33.590	25.449	253.6	0.202	4.10	67.5					0.19	0.23	60	214
69		11.82	11.81	33.619	25.552	243.9	0.225	3.89	63.5					0.12	0.17	69	213
75	ISL	11.56	11.55	33.647	25.623	237.4	0.239	3.75	60.9					0.10	0.15	75	
86		11.16	11.15	33.702	25.738	226.6	0.265	3.50	56.3					0.07	0.12	86	212
100	ISL	10.79	10.78	33.760	25.850	216.3	0.296	3.21	51.3					0.03	0.08	100	
102		10.74	10.73	33.769	25.866	214.8	0.300	3.17	50.6					0.03	0.07	102	211
121		10.27	10.26	33.897	26.047	197.9	0.339	2.67	42.2					0.00	0.04	122	210
125	ISL	10.20	10.19	33.910	26.070	195.9	0.347	2.63	41.5					0.00	0.04	126	
139		10.01	9.99	33.942	26.127	190.7	0.374	2.54	39.9					0.00	0.04	140	209
150	ISL	9.86	9.84	33.972	26.176	186.3	0.395	2.44	38.2					0.00	0.04	151	
167		9.62	9.60	34.015	26.250	179.5	0.426	2.29	35.7					0.00	0.03	168	208
196		9.06	9.04	34.063	26.379	167.8	0.476	2.20	33.9					0.00	0.03	197	207
200	ISL	9.01	8.99	34.071	26.393	166.4	0.483	2.17	33.4							201	
227		8.69	8.67	34.119	26.481	158.5	0.527	1.97	30.1							228	206
250	ISL	8.36	8.33	34.142	26.550	152.2	0.562	1.80	27.3							251	
268		8.10	8.07	34.153	26.598	147.9	0.589	1.68	25.3							270	205
300	ISL	7.76	7.73	34.167	26.660	142.4	0.636	1.49	22.3							302	
318		7.59	7.56	34.172	26.688	139.9	0.661	1.38	20.6							320	204
383		6.96	6.92	34.191	26.792	130.7	0.749	0.97	14.2							385	203
400	ISL	6.79	6.75	34.208	26.829	127.4	0.771	0.90	13.2							403	
436		6.45	6.41	34.248	26.906	120.3	0.816									439	202
500	ISL	6.09	6.05	34.287	26.984	113.5	0.891	0.46	6.6							503	
523		5.96	5.91	34.301	27.011	111.1	0.916	0.36	5.2							527	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 55.3 N	118 56.1 W	17/10/98	1736 UTC	1706 m	040 05 kn	050 02 06	0	1017.8 mb	19.4 C	17.8 C		0/8

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	17.50	17.50	33.510	24.253	365.9	0.000	5.67	103.8					0.75	0.14	0	
1		17.50	17.50	33.510	24.253	365.9	0.004	5.67	103.8					0.75	0.14	1	220
10		17.26	17.26	33.507	24.308	361.0	0.036	5.73	104.4					0.89	0.17	10	219
19		13.87	13.87	33.475	25.037	291.8	0.066	5.18	88.2					3.21	0.99	19	218
20	ISL	13.81	13.81	33.477	25.051	290.5	0.069	5.14	87.4					3.08	0.98	20	
30	ISL	13.22	13.22	33.496	25.185	277.9	0.097	4.77	80.1					0.99	0.56	30	
31		13.16	13.16	33.498	25.199	276.7	0.100	4.74	79.5					0.71	0.49	31	217
39		12.64	12.63	33.525	25.323	265.1	0.122	4.45	73.8					0.37	0.39	39	216
50		11.38	11.37	33.632	25.643	234.8	0.149	3.84	62.1					0.15	0.21	50	215
60		10.73	10.72	33.688	25.803	219.8	0.172	3.61	57.6					0.07	0.12	60	214
70		10.52	10.51	33.717	25.863	214.3	0.193	3.43	54.5					0.06	0.11	70	213
75	ISL	10.36	10.35	33.734	25.904	210.5	0.204	3.43	54.3					0.05	0.09	75	
84		10.06	10.05	33.768	25.982	203.3	0.223	3.43	53.9					0.02	0.06	84	212
100		9.75	9.74	33.840	26.090	193.3	0.254	3.13	48.9					0.01	0.05	101	211
119		9.40	9.39	33.911	26.204	182.8	0.290	2.88	44.7					0.00	0.05	120	210
125	ISL	9.34	9.33	33.924	26.224	181.0	0.301	2.79	43.2					0.00	0.05	126	
139		9.21	9.19	33.948	26.264	177.5	0.326	2.61	40.3					0.00	0.05	140	209
150	ISL	9.07	9.05	33.974	26.307	173.6	0.345	2.52	38.8					0.00	0.05	151	
170		8.80	8.78	34.021	26.386	166.4	0.379	2.39	36.6					0.00	0.04	171	208
198		8.40	8.38	34.068	26.485	157.4	0.425	2.13	32.3					0.00	0.04	199	207
200	ISL	8.38	8.36	34.072	26.491	156.8	0.428	2.11	32.0							201	
229		8.10	8.08	34.118	26.570	149.8	0.472	1.83	27.6							230	206
250	ISL	7.87	7.84	34.133	26.616	145.7	0.503	1.70	25.5							251	
269		7.67	7.64	34.141	26.652	142.6	0.531	1.60	23.9							271	205
300	ISL	7.39	7.36	34.160	26.707	137.7	0.574	1.41	20.9							302	
318		7.25	7.22	34.172	26.736	135.1	0.599	1.29	19.1							320	204
377		6.81	6.77	34.222	26.837	126.2	0.676	0.79	11.6							379	203
400	ISL	6.66	6.62	34.234	26.867	123.6	0.705	0.68	9.9							403	
436		6.45	6.41	34.251	26.908	120.1	0.749	0.56	8.1							439	202
500	ISL	6.09	6.05	34.291	26.987	113.2	0.823	0.38	5.5							503	
513		6.02	5.97	34.299	27.002	111.9	0.838	0.34	4.9							517	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 39.1 N	119 28.6 W	17/10/98	2339 UTC	1307 m	350 09 kn	330 02 08	0	1015.3 mb	17.8 C	16.2 C		0/8	

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	33.359	24.192	371.7	0.000	5.71	103.9					0.83	0.10	0	
1		17.27	17.27	33.359	24.192	371.7	0.004	5.71	103.9					0.83	0.10	1	220
10	ISL	16.88	16.88	33.354	24.281	363.6	0.037	5.72	103.3					0.87	0.14	10	
15		16.60	16.60	33.353	24.345	357.6	0.055	5.73	102.9					0.90	0.17	15	219
20	ISL	16.54	16.54	33.353	24.359	356.5	0.073	5.73	102.8					0.89	0.18	20	
30		16.41	16.41	33.365	24.399	353.0	0.108	5.72	102.4					0.87	0.20	30	218
44		14.95	14.94	33.207	24.603	333.9	0.156	5.68	98.7					0.91	0.32	44	217
50	ISL	14.06	14.05	33.113	24.719	323.0	0.176	5.62	95.8					0.71	0.39	50	
55		13.26	13.25	33.072	24.850	310.5	0.192	5.57	93.4					0.50	0.41	55	216
64		11.84	11.83	33.195	25.219	275.5	0.218	4.90	79.8					0.20	0.26	64	215
75		11.53	11.52	33.271	25.336	264.6	0.248	4.68	75.7					0.16	0.22	75	214
85		11.27	11.26	33.367	25.458	253.2	0.274	4.42	71.2					0.11	0.18	85	213
95		10.80	10.79	33.542	25.678	232.5	0.298	4.07	64.9					0.06	0.12	95	212
100	ISL	10.54	10.53	33.602	25.771	223.8	0.309	3.95	62.7					0.05	0.10	100	
110		10.03	10.02	33.701	25.935	208.2	0.331	3.71	58.3					0.03	0.07	111	211
124		9.47	9.46	33.842	26.138	189.1	0.359	3.23	50.1					0.01	0.04	125	210
125	ISL	9.44	9.43	33.849	26.149	188.2	0.361	3.22	50.0					0.01	0.04	126	
143		8.98	8.96	33.943	26.296	174.4	0.393	3.04	46.7					0.00	0.05	144	209
150	ISL	8.90	8.88	33.967	26.328	171.5	0.405	2.90	44.5					0.00	0.05	151	
169		8.75	8.73	34.011	26.386	166.3	0.438	2.52	38.5					0.01	0.04	170	208
198		8.38	8.36	34.058	26.480	157.9	0.485	2.28	34.6					0.00	0.03	199	207
200	ISL	8.35	8.33	34.061	26.487	157.2	0.488	2.26	34.3							201	
230		7.99	7.97	34.097	26.570	149.8	0.534	1.96	29.5							231	206
250	ISL	7.78	7.76	34.113	26.613	145.9	0.563	1.82	27.2							251	
274		7.56	7.53	34.131	26.660	141.8	0.598	1.65	24.6							276	205
300	ISL	7.36	7.33	34.158	26.710	137.4	0.634	1.39	20.6							302	
318		7.23	7.20	34.176	26.742	134.5	0.659	1.21	17.9							320	204
375		6.70	6.67	34.207	26.840	125.8	0.733	0.84	12.3							377	203
400	ISL	6.51	6.47	34.230	26.883	121.9	0.764	0.68	9.9							403	
434		6.28	6.24	34.261	26.938	117.1	0.804	0.50	7.2							437	202
500	ISL	5.82	5.78	34.289	27.019	109.9	0.879	0.36	5.1							503	
512		5.74	5.70	34.295	27.034	108.5	0.892	0.34	4.9							515	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 25.2 N	119 57.4 W	18/10/98	0509 UTC	872 m	320 17 kn			1016.1 mb	17.1 C	14.7 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		17.83	17.83	33.429	24.112	379.4	0.000	5.54	102.0					0.22	0.05	0	220
10	ISL	17.46	17.46	33.407	24.184	372.8	0.038	5.60	102.3					0.28	0.07	10	
16		17.24	17.24	33.395	24.228	368.9	0.060	5.64	102.6					0.31	0.08	16	219
20	ISL	17.18	17.18	33.391	24.239	367.9	0.075	5.65	102.7					0.38	0.10	20	
30		17.03	17.03	33.380	24.266	365.7	0.111	5.67	102.7					0.60	0.15	30	218
45		15.39	15.38	33.378	24.639	330.6	0.163	5.82	102.1					0.92	0.52	45	217
50	ISL	14.80	14.79	33.407	24.790	316.3	0.180	5.67	98.3					0.84	0.55	50	
55		14.27	14.26	33.439	24.927	303.3	0.195	5.48	94.0					0.71	0.58	55	216
65		13.73	13.72	33.469	25.062	290.7	0.225	5.13	87.0					0.47	0.48	65	215
75		12.75	12.74	33.504	25.286	269.6	0.253	4.60	76.5					0.21	0.27	75	214
84		12.24	12.23	33.558	25.426	256.4	0.277	4.28	70.4					0.16	0.23	84	213
93		11.75	11.74	33.587	25.541	245.6	0.299	4.13	67.3					0.11	0.16	93	212
100	ISL	11.44	11.43	33.617	25.622	238.1	0.316	3.97	64.2					0.09	0.13	100	
107		11.16	11.15	33.647	25.696	231.1	0.332	3.82	61.5					0.07	0.11	107	211
124		10.41	10.40	33.698	25.868	215.0	0.370	3.70	58.6					0.00	0.10	125	210
125	ISL	10.37	10.36	33.703	25.879	214.0	0.373	3.68	58.2					0.00	0.10	126	
145		9.59	9.57	33.818	26.100	193.2	0.413	3.24	50.4					0.01	0.04	146	209
150	ISL	9.46	9.44	33.841	26.140	189.5	0.423	3.24	50.3					0.01	0.04	151	
168		9.10	9.08	33.909	26.251	179.2	0.456	3.26	50.2					0.01	0.03	169	208
198		8.63	8.61	33.994	26.392	166.3	0.508	2.90	44.2					0.00	0.04	199	207
200	ISL	8.60	8.58	33.996	26.398	165.8	0.511	2.88	43.9							201	
229		8.20	8.18	34.023	26.480	158.3	0.558	2.57	38.8							230	206
250	ISL	8.05	8.02	34.065	26.536	153.4	0.591	2.27	34.2							251	
270		7.93	7.90	34.105	26.586	149.0	0.621	1.97	29.6							272	205
300	ISL	7.62	7.59	34.138	26.657	142.6	0.665	1.61	24.0							302	
317		7.44	7.41	34.151	26.693	139.3	0.689	1.43	21.2							319	204
378		6.98	6.94	34.195	26.792	130.6	0.771	1.00	14.7							380	203
400	ISL	6.81	6.77	34.209	26.827	127.5	0.800	0.86	12.6							403	
445		6.44	6.40	34.236	26.898	121.2	0.856	0.61	8.9							448	202
500	ISL	5.97	5.93	34.274	26.988	112.9	0.920	0.42	6.0							503	
510		5.89	5.85	34.281	27.004	111.5	0.931	0.38	5.4							513	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 5.3 N	120 38.9 W	18/10/98	1237 UTC	3799 m	300 20 kn			1014.9 mb	16.2 C	14.4 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	17.98	17.98	33.443	24.086	381.9	0.000	5.51	101.7					0.22	0.05	0	
3		17.98	17.98	33.443	24.086	382.0	0.011	5.51	101.7					0.22	0.05	3	220
10	ISL	17.98	17.98	33.446	24.089	382.0	0.038	5.51	101.7					0.23	0.05	10	
16		17.99	17.99	33.449	24.089	382.1	0.061	5.50	101.6					0.24	0.05	16	219
20	ISL	17.99	17.99	33.447	24.087	382.4	0.076	5.49	101.4					0.24	0.05	20	
30		17.99	17.98	33.443	24.085	383.0	0.115	5.48	101.2					0.23	0.05	30	218
44		14.81	14.80	33.321	24.721	322.7	0.164	5.89	102.1					0.28	0.14	44	217
50	ISL	14.44	14.43	33.383	24.848	310.7	0.183	5.77	99.3					0.46	0.25	50	
56		14.25	14.24	33.452	24.941	302.0	0.201	5.52	94.7					0.61	0.34	56	216
65		13.49	13.48	33.484	25.123	284.9	0.228	5.00	84.4					0.48	0.34	65	215
74		12.77	12.76	33.445	25.236	274.3	0.253	4.85	80.7					0.35	0.39	74	214
75	ISL	12.70	12.69	33.446	25.251	272.9	0.256	4.83	80.2					0.33	0.39	75	
84		12.14	12.13	33.481	25.386	260.2	0.280	4.60	75.5					0.21	0.33	84	213
95		11.38	11.37	33.584	25.607	239.3	0.307	4.19	67.7					0.12	0.19	95	212
100	ISL	11.07	11.06	33.611	25.684	232.1	0.319	4.11	66.0					0.09	0.15	100	
110		10.51	10.50	33.658	25.820	219.3	0.342	3.99	63.3					0.05	0.10	110	211
124		9.92	9.91	33.752	25.994	203.0	0.371	3.63	56.9					0.02	0.05	125	210
125	ISL	9.88	9.87	33.759	26.006	201.9	0.373	3.61	56.5					0.02	0.05	126	
141		9.36	9.34	33.856	26.167	186.7	0.404	3.37	52.2					0.00	0.04	142	209
150	ISL	9.19	9.17	33.885	26.218	182.1	0.421	3.41	52.6					0.00	0.04	151	
171		8.91	8.89	33.922	26.292	175.4	0.458	3.52	54.0					0.00	0.03	172	208
198		8.49	8.47	33.972	26.396	165.9	0.504	3.05	46.3					0.00	0.03	199	207
200	ISL	8.45	8.43	33.976	26.405	165.0	0.508	3.02	45.8							201	
232		7.83	7.81	34.030	26.541	152.5	0.559	2.62	39.2							233	206
250	ISL	7.64	7.62	34.051	26.585	148.5	0.586	2.40	35.8							251	
271		7.47	7.44	34.070	26.624	145.0	0.616	2.14	31.8							273	205
300	ISL	7.19	7.16	34.099	26.687	139.4	0.658	1.75	25.8							302	
313		7.07	7.04	34.111	26.713	137.1	0.676	1.59	23.4							315	204
381		6.58	6.55	34.164	26.822	127.5	0.766	1.02	14.8							383	203
400	ISL	6.46	6.42	34.181	26.851	124.9	0.790	0.88	12.8							403	
438		6.26	6.22	34.216	26.905	120.2	0.836	0.64	9.2							441	202
500	ISL	6.00	5.96	34.277	26.987	113.1	0.909	0.41	5.9							503	
515		5.94	5.89	34.292	27.007	111.4	0.925	0.36	5.2							518	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 44.5 N	121 19.1 W	18/10/98	1938 UTC	3613 m	330 18 kn	340 06 04	1	1016.0 mb	16.8 C	15.9 C		5/8	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	16.98	16.98	33.341	24.247	366.5	0.000	5.65	102.3					0.37	0.08	0	
1		16.98	16.98	33.341	24.247	366.5	0.004	5.65	102.3					0.37	0.08	1	220
10	ISL	16.96	16.96	33.341	24.252	366.3	0.037	5.64	102.0					0.36	0.08	10	
16		16.93	16.93	33.341	24.259	365.9	0.059							0.35	0.08	16	219
20	ISL	16.92	16.92	33.341	24.262	365.8	0.073	5.64	102.0					0.37	0.08	20	
30		16.89	16.89	33.339	24.268	365.5	0.110	5.63	101.7					0.44	0.09	30	218
44		16.84	16.83	33.337	24.278	365.0	0.161	5.63	101.6					0.47	0.12	44	217
50	ISL	16.83	16.82	33.336	24.280	365.0	0.183	5.63	101.6					0.53	0.13	50	
53		16.82	16.81	33.336	24.283	364.9	0.194	5.63	101.6					0.56	0.14	53	216
64		16.09	16.08	33.270	24.400	354.0	0.233	5.65	100.4					0.68	0.28	64	215
73		13.64	13.63	33.049	24.756	320.0	0.264	5.74	97.0					0.61	0.46	73	214
75	ISL	13.26	13.25	33.061	24.842	311.8	0.270	5.62	94.2					0.55	0.44	75	
84		12.13	12.12	33.212	25.179	279.9	0.297	4.99	81.7					0.28	0.29	84	213
94		11.82	11.81	33.382	25.369	262.0	0.324	4.71	76.7					0.17	0.23	94	212
100	ISL	11.53	11.52	33.478	25.497	249.9	0.339	4.46	72.3					0.12	0.18	100	
109		11.08	11.07	33.597	25.672	233.5	0.361	4.10	65.8					0.07	0.12	109	211
124		10.57	10.56	33.689	25.834	218.3	0.395	3.77	59.9					0.03	0.07	125	210
125	ISL	10.54	10.53	33.694	25.843	217.5	0.397	3.75	59.5					0.03	0.07	126	
144		9.93	9.91	33.779	26.014	201.5	0.437	3.32	52.0					0.01	0.05	145	209
150	ISL	9.77	9.75	33.805	26.061	197.2	0.449	3.24	50.6					0.01	0.05	151	
171		9.31	9.29	33.890	26.203	184.0	0.489	3.02	46.7					0.00	0.04	172	208
200	ISL	8.80	8.78	33.987	26.360	169.4	0.540	2.62	40.1					0.00	0.03	201	
202		8.77	8.75	33.992	26.369	168.7	0.543	2.59	39.6					0.00	0.03	203	207
231		8.41	8.39	34.054	26.473	159.2	0.591	2.28	34.6							232	206
250	ISL	8.15	8.12	34.084	26.536	153.4	0.621	2.11	31.8							251	
265		7.94	7.91	34.101	26.581	149.4	0.643	2.00	30.0							266	205
300	ISL	7.50	7.47	34.109	26.651	143.0	0.694	1.81	26.9							302	
318		7.31	7.28	34.112	26.681	140.4	0.720	1.70	25.2							320	204
374		6.96	6.92	34.182	26.785	131.2	0.796	1.04	15.3							376	203
400	ISL	6.58	6.54	34.171	26.828	127.3	0.830	0.93	13.5							402	
438		6.00	5.96	34.150	26.886	121.7	0.877	0.85	12.2							441	202
500	ISL	5.56	5.52	34.188	26.971	114.1	0.950	0.57	8.1							503	
515		5.45	5.41	34.198	26.992	112.1	0.967	0.50	7.1							518	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 24.9 N	121 59.4 W	19/10/98	0213 UTC	3862 m	330 18 kn			1015.1 mb	16.0 C	14.8 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	33.204	24.007	389.4	0.000	5.55	101.5					0.12	0.03	0	
2		17.55	17.55	33.204	24.007	389.5	0.008	5.55	101.5					0.12	0.03	2	220
10	ISL	17.55	17.55	33.205	24.008	389.6	0.039	5.57	101.9					0.11	0.02	10	
15		17.55	17.55	33.205	24.008	389.8	0.058	5.58	102.0					0.11	0.02	15	219
20	ISL	17.49	17.49	33.207	24.024	388.4	0.078	5.59	102.1					0.12	0.02	20	
29		17.33	17.33	33.220	24.073	384.1	0.113	5.60	102.0					0.14	0.03	29	218
30	ISL	17.32	17.32	33.223	24.077	383.7	0.116	5.60	101.9					0.14	0.03	30	
43		17.07	17.06	33.277	24.178	374.5	0.166	5.62	101.8					0.22	0.06	43	217
50	ISL	16.91	16.90	33.319	24.248	368.0	0.192	5.71	103.2					0.27	0.08	50	
59		16.53	16.52	33.362	24.370	356.7	0.224	5.83	104.6					0.32	0.11	59	216
75		15.09	15.08	33.368	24.698	325.8	0.279	5.88	102.5					0.29	0.21	75	215
85		14.63	14.62	33.398	24.820	314.4	0.311	5.83	100.7					0.30	0.28	85	214
94		14.71	14.70	33.517	24.895	307.6	0.339	5.73	99.2					0.27	0.27	94	213
100	ISL	14.59	14.58	33.551	24.947	302.8	0.357	5.67	98.0					0.26	0.29	100	
105		14.43	14.41	33.571	24.997	298.2	0.372	5.60	96.4					0.25	0.30	105	212
114		14.07	14.05	33.631	25.119	286.8	0.399	5.42	92.7					0.23	0.27	114	211
125		13.32	13.30	33.631	25.273	272.3	0.429	5.15	86.7					0.19	0.22	126	210
140		11.50	11.48	33.618	25.613	239.9	0.468	4.60	74.5					0.05	0.25	141	209
150	ISL	10.92	10.90	33.639	25.734	228.5	0.491	4.41	70.6					0.05	0.19	151	
164		10.45	10.43	33.684	25.851	217.5	0.522	4.22	66.9					0.04	0.08	165	208
193		9.26	9.24	33.824	26.160	188.5	0.581	3.66	56.5					0.01	0.02	194	207
200	ISL	9.11	9.09	33.855	26.208	184.0	0.594	3.65	56.2							201	
231		8.66	8.64	33.960	26.361	169.9	0.649	3.59	54.8							232	206
250	ISL	8.38	8.35	33.991	26.429	163.7	0.681	3.39	51.4							251	
275		8.00	7.97	34.014	26.504	156.8	0.721	3.01	45.2							276	205
300	ISL	7.57	7.54	34.036	26.584	149.4	0.759	2.54	37.8							302	
324		7.18	7.15	34.056	26.655	142.9	0.794	2.09	30.8							326	204
384		6.60	6.56	34.106	26.773	132.1	0.877	1.35	19.6							386	203
400	ISL	6.45	6.41	34.115	26.800	129.7	0.898	1.20	17.4							402	
434		6.16	6.12	34.134	26.853	124.9	0.941	0.95	13.7							437	202
500	ISL	5.66	5.62	34.176	26.949	116.2	1.021	0.61	8.7							503	
503		5.64	5.60	34.178	26.953	115.9	1.024	0.59	8.4							506	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9810 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 4.8 N	122 39.8 W	19/10/98	0850 UTC	3984 m	340 20 kn			1016.1 mb	17.1 C	14.5 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	18.07	18.07	33.285	23.943	395.5	0.000	5.51	101.8					0.11	0.03	0	
3		18.07	18.07	33.285	23.943	395.6	0.012	5.51	101.8					0.11	0.03	3	220
10	ISL	18.07	18.07	33.285	23.943	395.8	0.040	5.50	101.6					0.12	0.03	10	
14		18.07	18.07	33.285	23.944	395.9	0.055	5.49	101.4					0.12	0.03	14	219
20	ISL	18.07	18.07	33.286	23.945	396.0	0.079	5.49	101.4					0.12	0.03	20	
30		18.07	18.06	33.288	23.947	396.2	0.119	5.49	101.4					0.11	0.03	30	218
44		18.07	18.06	33.285	23.945	396.8	0.174	5.50	101.6					0.11	0.02	44	217
50	ISL	18.02	18.01	33.289	23.960	395.6	0.198	5.51	101.7					0.11	0.02	50	
60		17.94	17.93	33.295	23.985	393.6	0.238	5.53	101.9					0.11	0.03	60	216
75		15.72	15.71	33.431	24.607	334.5	0.292	5.93	104.7					0.19	0.07	75	215
85		15.26	15.25	33.500	24.763	320.0	0.325	5.88	102.9					0.21	0.10	85	214
94		15.17	15.16	33.641	24.891	308.0	0.353	5.77	100.9					0.26	0.24	94	213
100	ISL	15.11	15.09	33.719	24.965	301.2	0.371	5.68	99.3					0.31	0.30	100	
104		15.07	15.05	33.759	25.004	297.6	0.383	5.63	98.3					0.33	0.33	104	212
114		14.49	14.47	33.672	25.062	292.3	0.413	5.55	95.8					0.28	0.40	114	211
125	ISL	14.37	14.35	33.792	25.181	281.3	0.444	5.34	92.0					0.20	0.28	125	
126		14.35	14.33	33.804	25.194	280.1	0.447	5.32	91.6					0.19	0.26	126	210
140		13.10	13.08	33.745	25.405	260.1	0.485	5.03	84.4					0.12	0.17	141	209
150	ISL	12.03	12.01	33.699	25.577	243.7	0.510	4.76	78.0					0.08	0.12	151	
164		10.67	10.65	33.676	25.807	221.8	0.543	4.40	70.0					0.05	0.07	165	208
192		9.56	9.54	33.821	26.109	193.4	0.601	3.94	61.3					0.01	0.03	193	207
200	ISL	9.37	9.35	33.863	26.172	187.5	0.616	3.76	58.2							201	
228		8.89	8.87	33.982	26.343	171.7	0.666	3.17	48.6							229	206
250	ISL	8.54	8.51	34.020	26.427	164.0	0.703	2.98	45.3							251	
266		8.31	8.28	34.033	26.472	159.8	0.729	2.88	43.6							267	205
300	ISL	7.88	7.85	34.062	26.560	152.0	0.782	2.44	36.6							302	
316		7.70	7.67	34.074	26.595	148.7	0.806	2.21	33.0							318	204
377		7.08	7.04	34.140	26.735	136.0	0.893	1.39	20.5							379	203
400	ISL	6.92	6.88	34.166	26.778	132.2	0.924	1.15	16.9							402	
438		6.64	6.60	34.199	26.842	126.5	0.973	0.85	12.4							441	202
500	ISL	5.91	5.87	34.195	26.933	118.0	1.049	0.64	9.2							503	
528		5.58	5.54	34.196	26.975	114.1	1.081	0.55	7.8							531	201

CalCOFI Cruise 9810

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)
83	40.6	34 13.1	119 24.0	10/21	0929	0933	92	28	54	54
83	42	34 10.4	119 29.9	10/21	0739	0752	220	135	27	27
83	51	33 53.3	120 10.8	10/21	0022	0034	281	110	50	50
83	55	33 44.9	120 25.7	10/20	2052	2113	450	210	102	102
83	60	33 35.1	120 45.5	10/20	1640	1701	467	200	32	32
83	70	33 15.6	121 27.0	10/20	0923	0943	450	204	47	47
83	80	32 53.8	122 08.8	10/20	0212	0233	447	208	27	27
83	90	32 34.3	122 49.4	10/19	1822	1843	457	213	20	20
90	28	33 29.3	117 46.8	10/16	2016	2025	200	67	45	45
90	30	33 24.9	117 55.1	10/16	1642	1704	447	210	22	22
90	35	33 15.5	118 15.6	10/17	0111	0131	429	202	56	56
90	37	33 11.8	118 24.7	10/17	0450	0510	443	208	36	36
90	45	32 55.7	118 56.6	10/17	1046	1106	422	213	59	59
90	53	32 39.3	119 28.6	10/17	1646	1708	452	219	35	35
90	60	32 25.6	119 57.6	10/17	2218	2239	457	213	52	52
90	80	31 44.4	121 19.8	10/18	1244	1305	445	213	61	61

PERSONNEL

CalCOFI Cruise 9811

SHIP'S CAPTAIN

Christopher H. Curl, RV *Robert Gordon Sproul*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

Hayward, Thomas L. (Chief Scientist)	Research Oceanographer, SIO
Cummings, Sherry L.	Staff Research Associate, SIO
Griffith, David A.	Fishery Biologist, NMFS
Hays, Amy E.	Fishery Biologist, NMFS
Hyrenbach, K. David	Graduate Student, SIO
McConnico, Laurie A.	Volunteer
Ramirez, Fernando	Staff Research Associate, SIO
Renger, Edward H.	Staff Research Associate, SIO
Swensen, Daryl L.	Biological Technician, NMFS
Wells, James A.	Marine Technician, SIO
Wilson, Robert C.	Resident Technician, SIO
Wolgast, David M.	Staff Research Associate, SIO

FIGURES

Cruise 9811

1. CalCOFI Cruise 9811, track and station positions.

2. Sections along CalCOFI line 90 (vertical exaggeration, 1000): A) potential density and geostrophic velocity (+ = northward); B) temperature; C) salinity; D) oxygen saturation; E) oxygen; F) chlorophyll-*a*; and G) phaeopigments.

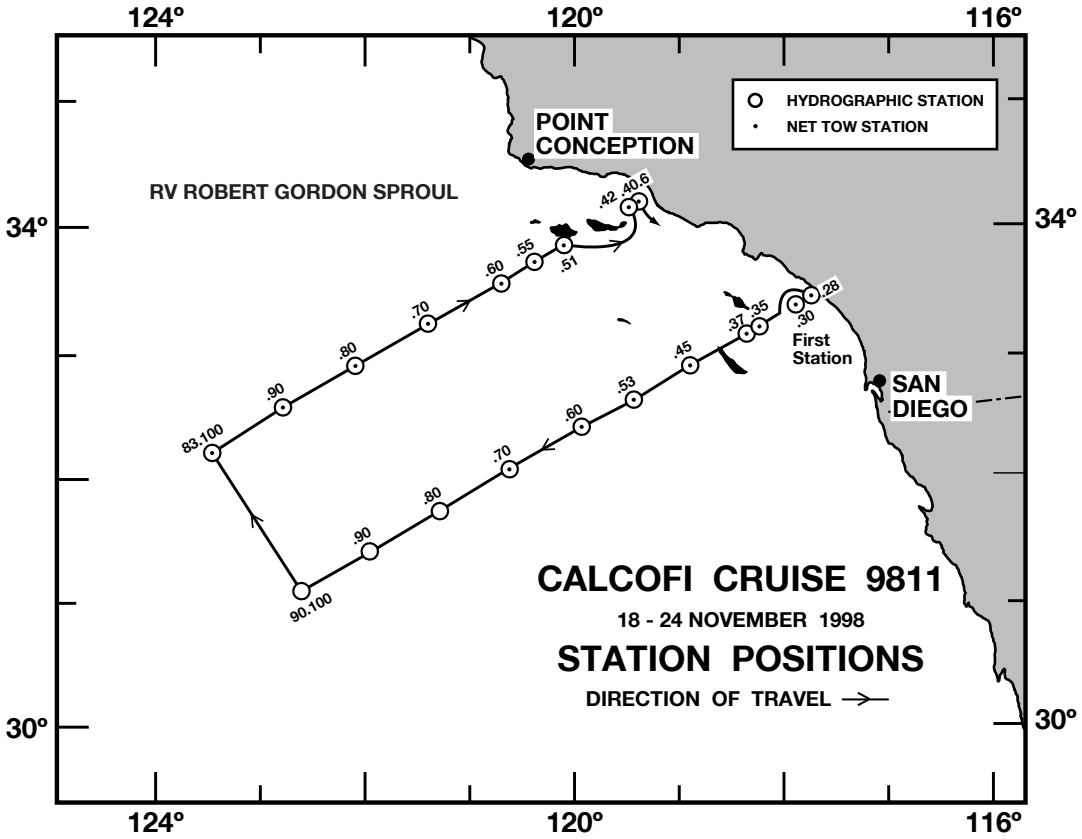

FIGURE 1

CALCOFI CRUISE 9811

18 - 21 NOVEMBER 1998

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90
GEOSTROPHIC VELOCITY RELATIVE TO 500m (cm/s)

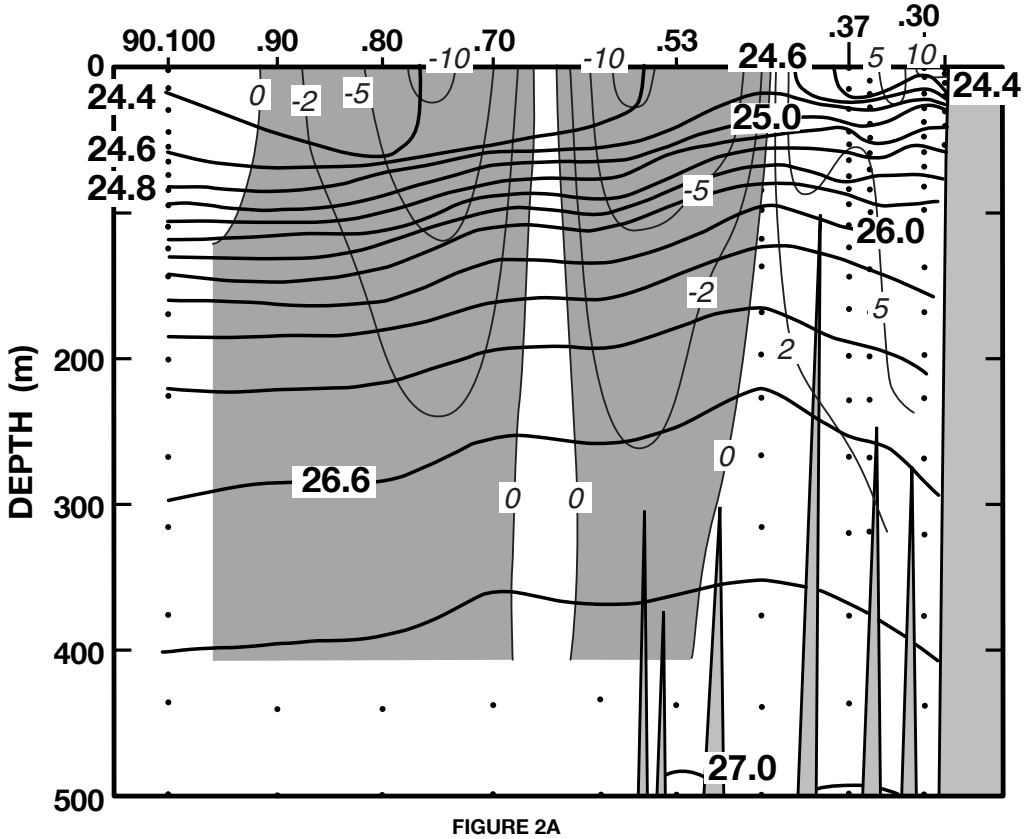

FIGURE 2A

CALCOFI CRUISE 9811

18 - 21 NOVEMBER 1998

TEMPERATURE (ºC) ALONG CALCOFI LINE 90

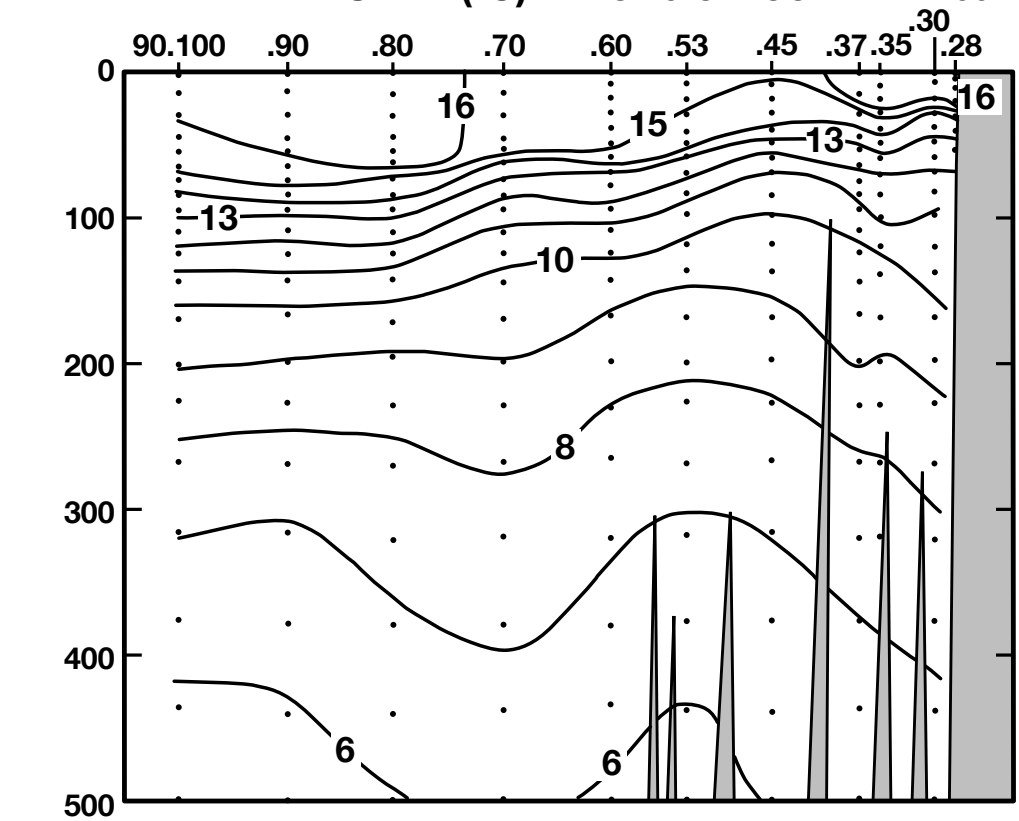

FIGURE 2B

SALINITY ALONG CALCOFI LINE 90

DEPTH (m)

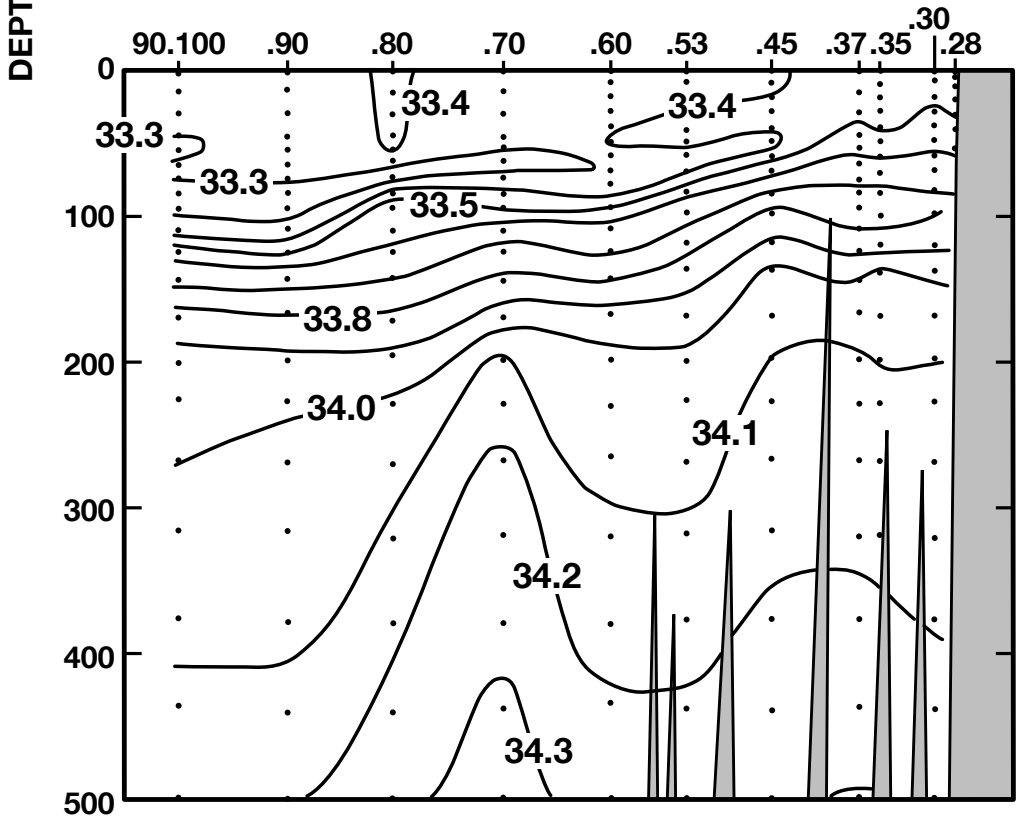

FIGURE 2C

CALCOFI CRUISE 9811

18 - 21 NOVEMBER 1998

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

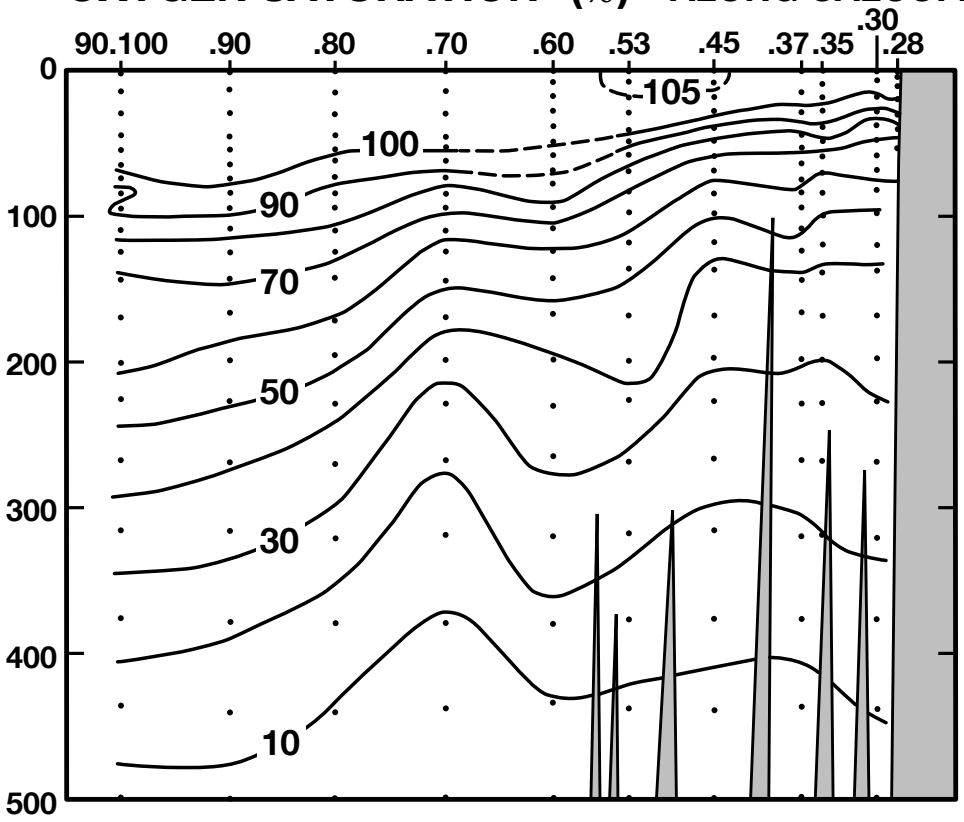

FIGURE 2D

OXYGEN (ml/l) ALONG CALCOFI LINE 90

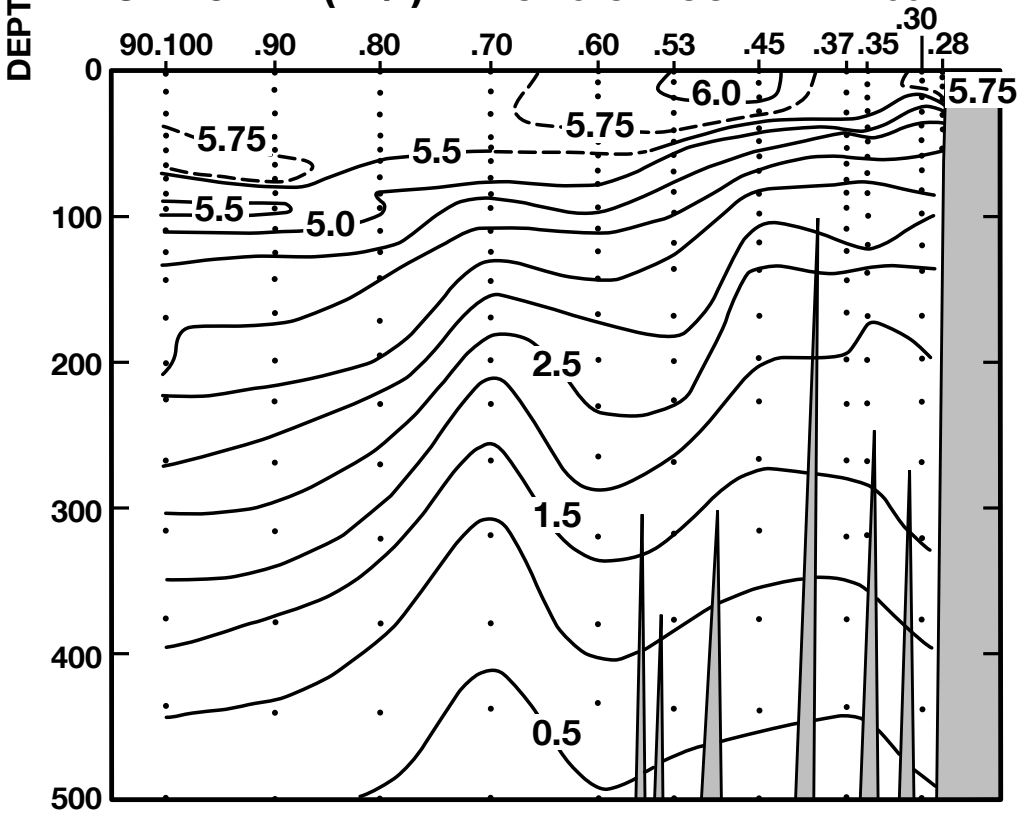

FIGURE 2E

CALCOFI CRUISE 9811

18 - 21 NOVEMBER 1998

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

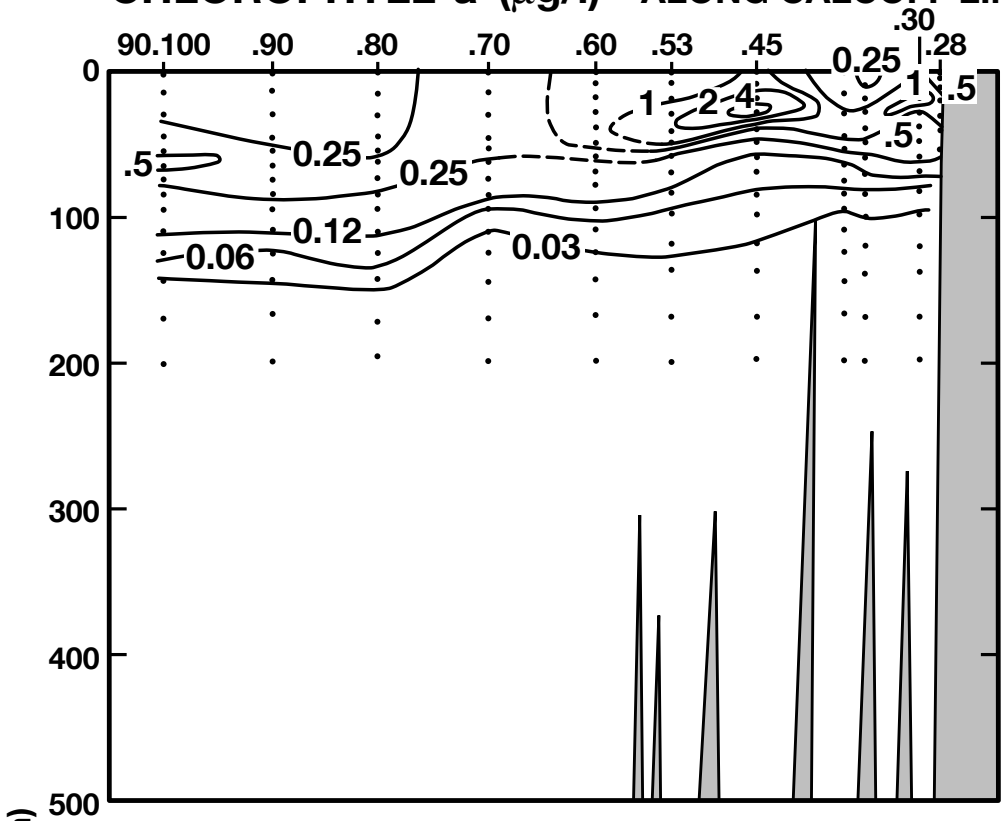

FIGURE 2F

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

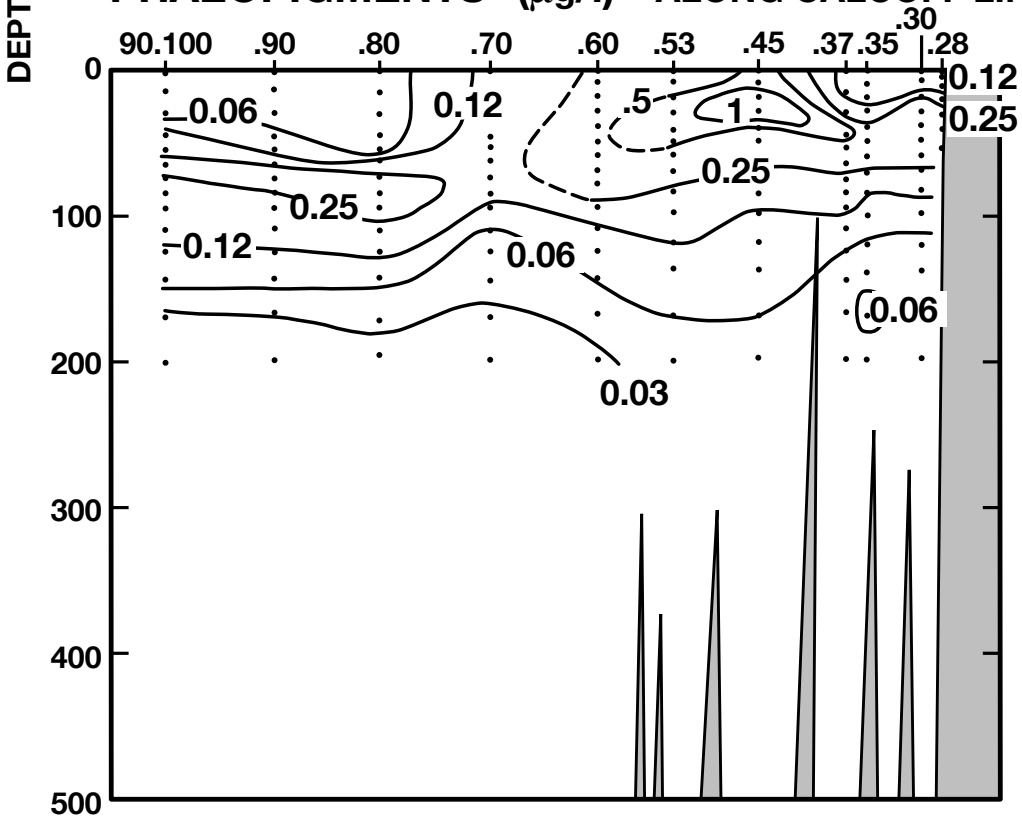

FIGURE 2G

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 13.5 N	119 24.8 W	23/11/98	2117 UTC	36 m	300 08 kn	300 02 07	1	1020.0 mb	16.9 C	15.0 C		3/8	CI

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	15.47	15.47	33.463	24.685	324.8	0.000	6.13	107.8					4.12	0.23	0	
1		15.47	15.47	33.463	24.685	324.8	0.003	6.13	107.8					4.12	0.23	1	205
6		15.33	15.33	33.462	24.715	322.1	0.019	6.11	107.1					3.32	0.38	6	204
10		15.22	15.22	33.462	24.740	319.9	0.032	6.10	106.7					2.52	0.39	10	203
20		14.38	14.38	33.459	24.918	303.2	0.063	5.26	90.5					3.29	0.68	20	202
30		13.71	13.71	33.487	25.079	288.1	0.093	4.52	76.7					1.76	0.58	30	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 10.8 N	119 31.0 W	23/11/98	1859 UTC	143 m	240 06 kn	300 03 06	1	1021.0 mb	16.3 C	14.9 C		2/8	CI

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	15.62	15.62	33.469	24.656	327.5	0.000	5.75	101.4					1.09	0.24	0	
1		15.62	15.62	33.469	24.656	327.5	0.003	5.75	101.4					1.09	0.24	1	212
10		15.11	15.11	33.480	24.777	316.3	0.032	5.52	96.4					1.19	0.41	10	211
20	ISL	13.54	13.54	33.526	25.144	281.6	0.062	4.53	76.6					0.71	0.38	20	
21		13.38	13.38	33.533	25.182	278.1	0.065	4.42	74.5					0.65	0.38	21	210
30	ISL	12.90	12.90	33.582	25.316	265.6	0.089	3.85	64.3					0.36	0.32	30	
31		12.88	12.88	33.586	25.323	264.9	0.092	3.81	63.6					0.34	0.31	31	209
41		12.56	12.55	33.599	25.396	258.2	0.118	3.79	62.8					0.34	0.33	41	208
50	ISL	12.27	12.26	33.628	25.474	251.0	0.141	3.66	60.3					0.26	0.27	50	
51		12.24	12.23	33.632	25.483	250.1	0.144	3.64	59.9					0.25	0.26	51	207
60		12.04	12.03	33.658	25.541	244.8	0.166	3.47	56.9					0.23	0.27	60	206
71		11.93	11.92	33.665	25.568	242.6	0.193	3.44	56.3					0.20	0.27	71	205
75	ISL	11.78	11.77	33.676	25.604	239.2	0.202	3.39	55.3					0.17	0.23	75	
85		11.34	11.33	33.716	25.717	228.7	0.226	3.23	52.2					0.09	0.12	85	204
100		10.89	10.88	33.788	25.854	215.9	0.259	3.00	48.0					0.04	0.11	101	203
115		10.50	10.49	33.860	25.979	204.3	0.291	2.91	46.2					0.02	0.08	116	202
125	ISL	10.43	10.42	33.880	26.007	201.9	0.311	2.74	43.5					0.02	0.09	126	
130		10.40	10.38	33.890	26.020	200.8	0.321	2.66	42.2					0.02	0.09	131	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 52.2 N	120 8.6 W	23/11/98	1151 UTC	145 m	310 18 kn			1018.1 mb	14.0 C	13.5 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	14.33	14.33	33.479	24.943	300.2	0.000	5.39	92.6					1.24	0.37	0	
2		14.33	14.33	33.479	24.944	300.2	0.006	5.39	92.6					1.24	0.37	2	210
10		13.74	13.74	33.512	25.092	286.3	0.029	5.10	86.6					1.40	0.50	10	209
20	ISL	13.34	13.34	33.533	25.190	277.3	0.058	4.91	82.7					1.17	0.50	20	
21		13.31	13.31	33.535	25.197	276.6	0.060	4.89	82.3					1.14	0.50	21	208
30		12.82	12.82	33.561	25.315	265.6	0.085	4.59	76.5					1.03	0.52	30	207
41		11.83	11.82	33.586	25.524	245.9	0.113	4.01	65.4					0.48	0.32	41	206
50	ISL	11.61	11.60	33.615	25.588	240.1	0.135	3.81	61.9					0.34	0.30	50	
51		11.59	11.58	33.620	25.596	239.4	0.137	3.79	61.5					0.33	0.30	51	205
61		10.87	10.86	33.729	25.811	219.1	0.160	3.30	52.8					0.09	0.17	61	204
74		10.61	10.60	33.772	25.890	211.8	0.188	3.13	49.8					0.05	0.12	74	203
75	ISL	10.56	10.55	33.782	25.907	210.3	0.190	3.09	49.1					0.05	0.12	75	
87		10.02	10.01	33.905	26.096	192.5	0.214	2.62	41.2					0.02	0.10	87	202
98		9.86	9.85	33.933	26.145	188.1	0.235	2.56	40.1					0.01	0.08	99	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 44.9 N	120 24.9 W	23/11/98	0726 UTC	1040 m	290 15 kn			1018.5 mb	13.5 C	13.0 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	14.67	14.67	33.448	24.847	309.3	0.000	5.76	99.6					2.10	0.59	0	
2	14.67	14.67	33.448	24.848	309.3	0.006	5.76	99.6					2.10	0.59	2	220
9	14.53	14.53	33.451	24.880	306.5	0.028	5.75	99.2					2.31	0.55	9	219
10 ISL	14.50	14.50	33.452	24.887	305.8	0.031	5.75	99.1					2.37	0.56	10	
18	14.25	14.25	33.461	24.947	300.4	0.055	5.75	98.6					2.63	0.67	18	218
20 ISL	14.20	14.20	33.461	24.958	299.4	0.061	5.73	98.2					2.57	0.66	20	
29	13.79	13.79	33.461	25.043	291.5	0.088	5.36	91.1					1.85	0.60	29	217
30 ISL	13.62	13.62	33.468	25.083	287.7	0.091	5.25	88.9					1.69	0.57	30	
38	12.19	12.19	33.537	25.418	255.9	0.112	4.41	72.5					0.51 A	0.33 A	38	216
49	11.52	11.51	33.557	25.559	242.8	0.140	4.13	66.9					0.26	0.26	49	215
50 ISL	11.48	11.47	33.557	25.567	242.1	0.142	4.11	66.6					0.25	0.25	50	
59	11.08	11.07	33.580	25.657	233.7	0.164	3.93	63.1					0.16	0.21	59	214
70	10.16	10.15	33.712	25.921	208.8	0.188	3.43	54.0					0.05	0.15	70	213
75 ISL	10.15	10.14	33.775	25.972	204.0	0.198	3.24	51.0					0.04	0.13	75	
85	10.14	10.13	33.845	26.028	198.9	0.218	2.90	45.7					0.02	0.09	85	212
100 ISL	9.77	9.76	33.945	26.169	185.8	0.247	2.50	39.1					0.01	0.07	101	
102	9.71	9.70	33.955	26.187	184.1	0.251	2.46	38.4					0.01	0.07	103	211
119	9.44	9.43	33.994	26.262	177.3	0.282	2.34	36.3					0.00	0.07	120	210
125 ISL	9.34	9.33	34.006	26.288	175.0	0.292	2.30	35.6					0.00	0.07	126	
137	9.14	9.13	34.028	26.337	170.5	0.313	2.22	34.2					0.00	0.07	138	209
150 ISL	8.91	8.89	34.053	26.394	165.3	0.335	2.12	32.5					0.00	0.07	151	
167	8.66	8.64	34.082	26.456	159.7	0.362	2.01	30.7					0.00	0.06	168	208
200	8.47	8.45	34.104	26.503	155.8	0.414	1.95	29.6					0.00	0.06	201	207
226	8.20	8.18	34.125	26.561	150.7	0.454	1.75	26.4							227	206
250 ISL	8.01	7.98	34.143	26.603	147.0	0.490	1.59	23.9							252	
265	7.91	7.88	34.153	26.626	145.0	0.512	1.51	22.7							267	205
300 ISL	7.73	7.70	34.167	26.664	142.0	0.562	1.38	20.6							302	
318	7.64	7.61	34.173	26.682	140.6	0.588	1.32	19.7							320	204
381	7.18	7.14	34.205	26.773	132.7	0.674	1.01	14.9							384	203
400 ISL	6.95	6.91	34.214	26.812	129.1	0.699	0.89	13.1							403	
438	6.47	6.43	34.235	26.893	121.6	0.746	0.67	9.7							441	202
500 ISL	5.96	5.92	34.273	26.989	112.9	0.819	0.44	6.3							504	
511	5.87	5.83	34.280	27.006	111.3	0.831	0.40	5.7							515	201

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

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 34.7 N	120 45.7 W	23/11/98	0222 UTC	1510 m	300 18 kn			1017.6 mb	14.1 C	13.7 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	14.86	14.86	33.417	24.783	315.5	0.000	5.92	102.8					0.84	0.29	0	
1	14.86	14.86	33.417	24.783	315.5	0.003	5.92	102.8					0.84	0.29	1	220
9	14.86	14.86	33.417	24.783	315.7	0.028	5.88	102.1					0.84	0.29	9	219
10 ISL	14.86	14.86	33.417	24.783	315.7	0.032	5.88	102.1					0.84	0.29	10	
19	14.86	14.86	33.417	24.783	316.0	0.060	5.89	102.3					0.88	0.29	19	218
20 ISL	14.86	14.86	33.417	24.783	316.0	0.063	5.89	102.3					0.88	0.29	20	
30	14.79	14.79	33.418	24.800	314.8	0.095	5.89	102.1					0.90	0.32	30	217
39	14.68	14.67	33.431	24.833	311.8	0.123	5.85	101.2					0.77	0.36	39	216
50	13.86	13.85	33.441	25.014	294.9	0.156	5.40	91.9					0.30	0.24	50	215
57	12.19	12.18	33.447	25.349	263.0	0.176	4.40	72.3					0.11	0.22	57	214
69	11.28	11.27	33.519	25.574	241.8	0.206	4.32	69.6					0.06	0.16	69	213
75 ISL	10.95	10.94	33.570	25.673	232.5	0.220	4.03	64.5					0.04	0.13	75	
84	10.58	10.57	33.644	25.796	221.0	0.241	3.54	56.2					0.03	0.11	84	212
100 ISL	10.30	10.29	33.725	25.908	210.7	0.275	3.24	51.2					0.02	0.15	100	
102	10.27	10.26	33.733	25.919	209.7	0.279	3.22	50.8					0.02	0.15	103	211
122	9.49	9.48	33.808	26.109	191.9	0.320	3.03	47.0					0.01	0.09	123	210
125 ISL	9.44	9.43	33.827	26.132	189.8	0.325	2.96	45.9					0.01	0.09	126	
139	9.25	9.23	33.916	26.232	180.5	0.351	2.67	41.3					0.01	0.07	140	209
150 ISL	9.00	8.98	33.957	26.304	173.8	0.371	2.64	40.6					0.01	0.06	151	
170	8.54	8.52	34.003	26.412	163.8	0.404	2.59	39.4					0.00	0.06	171	208
199	8.18	8.16	34.038	26.495	156.4	0.451	2.43	36.7					0.00	0.05	200	207
200 ISL	8.16	8.14	34.039	26.499	156.1	0.452	2.42	36.5							201	
230	7.65	7.63	34.073	26.601	146.7	0.498	2.10	31.3							231	206
250 ISL	7.41	7.39	34.078	26.639	143.3	0.527	1.97	29.2							251	
271	7.22	7.19	34.078	26.666	141.0	0.557	1.86	27.5							273	205
300 ISL	7.05	7.02	34.087	26.697	138.4	0.597	1.70	25.0							302	
320	6.93	6.90	34.093	26.718	136.6	0.625	1.58	23.2							322	204
381	6.26	6.23	34.103	26.815	127.8	0.705	1.17	16.9							383	203
400 ISL	6.12	6.08	34.120	26.847	125.0	0.729	1.01	14.5							403	
435	5.89	5.85	34.158	26.906	119.7	0.772	0.74	10.6							438	202
500 ISL	5.48	5.44	34.217	27.003	110.9	0.847	0.46	6.5							503	
511	5.41	5.37	34.227	27.020	109.4	0.859	0.41	5.8							515	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 14.7 N	121 26.7 W	22/11/98	1931 UTC	3805 m	330 18 kn	320 04 06	4	1020.2 mb	15.0 C	14.5 C		8/8	

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	14.36	14.36	33.284	24.787	315.1	0.000	5.96	102.3					0.65	0.22	0	
2		14.36	14.36	33.284	24.787	315.1	0.006	5.96	102.3					0.65	0.22	2	220
10	ISL	14.36	14.36	33.285	24.788	315.3	0.032	5.98	102.7					0.69	0.22	10	
11		14.36	14.36	33.285	24.788	315.3	0.035	5.98	102.7					0.70	0.22	11	219
20	ISL	14.36	14.36	33.286	24.789	315.5	0.063	5.95	102.2					0.77	0.28	20	
22		14.36	14.36	33.286	24.789	315.5	0.069	5.94	102.0					0.77	0.29	22	218
29		14.36	14.36	33.286	24.789	315.7	0.091	5.94	102.0					0.67	0.23	29	217
30	ISL	14.35	14.35	33.285	24.791	315.6	0.095	5.94	102.0					0.67	0.23	30	
41		14.23	14.22	33.331	24.851	310.1	0.129	5.88	100.7					0.63	0.26	41	216
50		13.47	13.46	33.287	24.974	298.6	0.156	5.75	96.9					0.25	0.23	50	215
61		12.42	12.41	33.204	25.117	285.2	0.189	5.23	86.2					0.19	0.21	61	214
71		11.78	11.77	33.397	25.388	259.7	0.216	4.46	72.6					0.10	0.18	71	213
75	ISL	11.58	11.57	33.472	25.483	250.7	0.226	4.16	67.5					0.08	0.19	75	
86		11.11	11.10	33.636	25.696	230.6	0.252	3.51	56.4					0.05	0.23	86	212
100	ISL	10.48	10.47	33.710	25.865	214.8	0.284	3.32	52.7					0.04	0.19	100	
102		10.39	10.38	33.714	25.884	213.0	0.288	3.29	52.1					0.04	0.18	102	211
120		9.56	9.55	33.783	26.077	194.9	0.325	3.19	49.6					0.02	0.11	121	210
125	ISL	9.42	9.41	33.805	26.118	191.1	0.334	3.19	49.5					0.02	0.10	126	
136		9.17	9.16	33.851	26.194	184.0	0.355	3.19	49.2					0.01	0.09	137	209
150	ISL	8.94	8.92	33.901	26.270	177.1	0.380	3.30	50.6					0.00	0.07	151	
168		8.68	8.66	33.952	26.351	169.7	0.411	3.37	51.4					0.00	0.06	169	208
200		8.11	8.09	34.010	26.483	157.5	0.464	2.74	41.3					0.00	0.09	201	207
226		7.77	7.75	34.021	26.542	152.2	0.504	2.70	40.4							227	206
250	ISL	7.48	7.46	34.044	26.602	146.8	0.540	2.37	35.2							251	
270		7.25	7.22	34.065	26.651	142.3	0.569	2.03	30.0							272	205
300	ISL	6.92	6.89	34.085	26.713	136.8	0.611	1.66	24.3							302	
318		6.74	6.71	34.095	26.745	133.9	0.635	1.47	21.5							320	204
379		6.20	6.17	34.125	26.840	125.4	0.714	1.04	15.0							381	203
400	ISL	6.05	6.02	34.144	26.875	122.3	0.740	0.89	12.8							403	
439		5.81	5.77	34.184	26.936	116.8	0.787	0.65	9.3							442	202
500	ISL	5.52	5.48	34.238	27.015	109.9	0.856	0.43	6.1							503	
519		5.43	5.39	34.255	27.039	107.7	0.877	0.36	5.1							523	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.3 N	122 8.4 W	22/11/98	1204 UTC	4188 m	320 18 kn			1021.3 mb	16.5 C	15.0 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	17.17	17.17	33.381	24.233	367.9	0.000	5.56	101.0					0.15	0.03	0	
2		17.17	17.17	33.381	24.233	367.9	0.007	5.56	101.0					0.15	0.03	2	220
10	ISL	17.18	17.18	33.382	24.232	368.3	0.037	5.57	101.2					0.16	0.03	10	
15		17.18	17.18	33.383	24.233	368.4	0.055	5.57	101.2					0.16	0.03	15	219
20	ISL	17.18	17.18	33.383	24.233	368.5	0.074	5.57	101.2					0.16	0.03	20	
30	ISL	17.18	17.18	33.382	24.232	368.9	0.111	5.56	101.0					0.15	0.03	30	
31		17.18	17.17	33.382	24.232	368.9	0.114	5.56	101.0					0.15	0.03	31	218
46		17.18	17.17	33.395	24.243	368.4	0.170	5.57	101.2					0.16	0.04	46	217
50	ISL	17.18	17.17	33.394	24.242	368.6	0.184	5.57	101.2					0.15	0.04	50	
57		17.18	17.17	33.391	24.240	369.1	0.210	5.56	101.0					0.14	0.04	57	216
66		17.17	17.16	33.388	24.241	369.3	0.243	5.58	101.4					0.15	0.04	66	215
75	ISL	15.26	15.25	33.262	24.579	337.2	0.275	5.85	102.3					0.32	0.20	75	
77		14.81	14.80	33.243	24.662	329.3	0.282	5.91	102.4					0.35	0.24	77	214
86		14.39	14.38	33.291	24.788	317.4	0.311	5.86	100.7					0.32	0.25	86	213
97		14.14	14.13	33.313	24.858	311.1	0.345	5.82	99.5					0.29	0.21	97	212
100	ISL	14.05	14.04	33.372	24.922	305.0	0.355	5.79	98.8					0.26	0.20	100	
110		13.65	13.63	33.564	25.153	283.3	0.384	5.64	95.6					0.17	0.17	110	211
124		12.73	12.71	33.538	25.317	267.9	0.423	5.24	87.1					0.11	0.13	125	210
125	ISL	12.68	12.66	33.539	25.328	266.9	0.425	5.21	86.5					0.11	0.13	126	
145		11.56	11.54	33.612	25.597	241.6	0.476	4.69	76.1					0.06	0.08	146	209
150	ISL	11.18	11.16	33.645	25.692	232.6	0.488	4.55	73.2					0.05	0.07	151	
170		9.75	9.73	33.797	26.058	197.8	0.531	4.04	63.1					0.01	0.03	171	208
198		8.88	8.86	33.941	26.312	174.1	0.583	3.70	56.7					0.00	0.01	199	207
200	ISL	8.83	8.81	33.946	26.323	172.9	0.587	3.66	56.0							201	
228		8.26	8.24	33.988	26.444	161.8	0.633	3.17	47.9							229	206
250	ISL	7.90	7.87	34.001	26.508	155.9	0.668	3.12	46.8							251	
272		7.57	7.54	34.005	26.559	151.3	0.702	3.06	45.5							273	205
300	ISL	7.16	7.13	34.005	26.617	146.0	0.744	2.80	41.3							302	
321		6.87	6.84	34.005	26.657	142.4	0.774	2.54	37.2							323	204
376		6.14	6.11	34.026	26.770	131.9	0.850	1.82	26.2							378	203
400	ISL	5.96	5.93	34.047	26.809	128.4	0.881	1.52	21.8							402	
437		5.75	5.71	34.084	26.865	123.4	0.927	1.12	16.0							440	202
500	ISL	5.38	5.34	34.143	26.957	115.2	1.003	0.71	10.0							503	
510		5.32	5.28	34.153	26.972	113.8	1.014	0.64	9.0							513	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 34.7 N	122 48.9 W	22/11/98	0427 UTC	4252 m	350	15 kn			1021.5 mb	16.9 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	16.96	16.96	33.256	24.186	372.3	0.000	5.64	102.0					0.15	0.04	0	
1	16.96	16.96	33.256	24.187	372.3	0.004	5.64	102.0					0.15	0.04	1	220
10 ISL	16.96	16.96	33.255	24.186	372.6	0.037	5.63	101.8					0.15	0.04	10	
14	16.96	16.96	33.255	24.186	372.7	0.052	5.62	101.6					0.15	0.04	14	219
20 ISL	16.96	16.96	33.255	24.186	372.9	0.075	5.62	101.6					0.15	0.04	20	
29	16.96	16.96	33.258	24.189	373.0	0.108	5.62	101.6					0.16	0.04	29	218
30 ISL	16.96	16.96	33.258	24.189	373.0	0.112	5.62	101.6					0.16	0.04	30	
45	16.92	16.91	33.258	24.199	372.5	0.168	5.63	101.7					0.19	0.05	45	217
50 ISL	16.92	16.91	33.260	24.201	372.6	0.186	5.63	101.7					0.20	0.05	50	
60	16.92	16.91	33.263	24.203	372.6	0.224	5.62	101.5					0.21	0.06	60	216
75	16.19	16.18	33.210	24.332	360.8	0.279	5.71	101.7					0.33	0.16	75	215
85	14.91	14.90	33.059	24.499	345.0	0.314	5.87	101.8					0.33	0.21	85	214
94	13.82	13.81	33.071	24.737	322.4	0.344	5.79	98.2					0.25	0.23	94	213
100 ISL	13.73	13.72	33.098	24.777	318.8	0.363	5.80	98.2					0.23	0.21	100	
105	13.65	13.64	33.109	24.802	316.6	0.379	5.80	98.0					0.21	0.19	105	212
114	14.70	14.68	33.630	24.985	299.6	0.407	5.76	99.8					0.13	0.14	114	211
125	14.65	14.63	33.747	25.086	290.3	0.439	5.66	98.0					0.12 A	0.15 A	126	210
139	14.30	14.28	33.757	25.169	282.8	0.479	5.57	95.8					0.11	0.16	140	209
150 ISL	13.41	13.39	33.710	25.316	268.9	0.510	5.32	89.8					0.09	0.13	151	
163	12.15	12.13	33.662	25.526	248.9	0.543	4.94	81.2					0.06	0.09	164	208
194	10.06	10.04	33.747	25.968	207.0	0.614	4.13	64.9					0.02	0.04	195	207
200 ISL	9.80	9.78	33.780	26.037	200.5	0.626	4.02	62.8							201	
228	8.92	8.90	33.929	26.296	176.1	0.679	3.63	55.7							229	206
250 ISL	8.47	8.44	33.984	26.409	165.6	0.717	3.42	51.9							251	
267	8.20	8.17	34.004	26.466	160.4	0.744	3.30	49.8							268	205
300 ISL	7.65	7.62	34.011	26.553	152.4	0.796	3.07	45.8							302	
317	7.40	7.37	34.007	26.585	149.4	0.822	2.95	43.7							319	204
377	6.73	6.70	34.017	26.686	140.4	0.909	2.30	33.6							379	203
400 ISL	6.52	6.48	34.033	26.727	136.7	0.940	1.97	28.6							402	
435	6.24	6.20	34.065	26.788	131.1	0.987	1.47	21.2							438	202
500 ISL	5.81	5.77	34.141	26.903	120.7	1.069	0.84	12.0							503	
514	5.72	5.68	34.158	26.928	118.5	1.086	0.71	10.1							517	201

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

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 14.7 N	123 29.5 W	21/11/98	2051 UTC	4135 m	330	16 kn	280 05 09	1	1023.1 mb	17.2 C	15.1 C		5/8	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	17.30	17.30	33.477	24.276	363.8	0.000	5.61	102.3					0.14	0.03	0	
1	17.30	17.30	33.477	24.276	363.8	0.004	5.61	102.3					0.14	0.03	1	220
10 ISL	17.28	17.28	33.480	24.283	363.4	0.036	5.60	102.0					0.14	0.04	10	
15	17.26	17.26	33.482	24.290	363.0	0.055	5.60	102.0					0.14	0.04	15	219
20 ISL	17.26	17.26	33.481	24.289	363.2	0.073	5.59	101.8					0.14	0.04	20	
29	17.23	17.23	33.473	24.290	363.3	0.105	5.59	101.7					0.14	0.04	29	218
30 ISL	17.22	17.22	33.471	24.291	363.3	0.109	5.59	101.7					0.14	0.04	30	
44	17.06	17.05	33.442	24.307	362.2	0.160	5.62	101.9					0.19	0.06	44	217
50 ISL	17.04	17.03	33.441	24.312	362.0	0.182	5.67	102.8					0.19	0.05	50	
54	17.03	17.02	33.440	24.313	362.0	0.196	5.70	103.3					0.19	0.05	54	216
65	15.95	15.94	33.311	24.463	348.0	0.235	5.72	101.4					0.33	0.17	65	215
75 ISL	15.59	15.58	33.277	24.518	343.0	0.270	5.72	100.7					0.30	0.18	75	
76	15.56	15.55	33.278	24.525	342.3	0.273	5.72	100.6					0.30	0.18	76	214
84	14.92	14.91	33.317	24.695	326.3	0.300	5.83	101.3					0.26	0.21	84	213
93	14.49	14.48	33.478	24.912	305.9	0.328	5.75	99.1					0.17	0.15	93	212
100 ISL	14.20	14.19	33.499	24.989	298.7	0.349	5.67	97.1					0.18	0.17	100	
109	13.78	13.76	33.491	25.070	291.2	0.376	5.50	93.4					0.20	0.20	109	211
123	12.77	12.75	33.584	25.345	265.2	0.415	5.03	83.7					0.12	0.14	124	210
125 ISL	12.56	12.54	33.585	25.387	261.3	0.420	4.96	82.2					0.11	0.13	126	
145	10.57	10.55	33.629	25.787	223.2	0.469	4.08	64.8					0.04	0.06	146	209
150 ISL	10.31	10.29	33.686	25.877	214.8	0.480	3.71	58.6					0.03	0.05	151	
169	9.76	9.74	33.914	26.148	189.3	0.518	2.43	38.0					0.01	0.03	170	208
198	9.36	9.34	34.033	26.307	174.7	0.571	2.03	31.5					0.01	0.03	199	207
200 ISL	9.34	9.32	34.038	26.314	174.0	0.574	2.02	31.3							201	
230	9.04	9.01	34.086	26.400	166.4	0.625	1.87	28.8							231	206
250 ISL	8.88	8.85	34.117	26.450	162.0	0.658	1.76	27.0							251	
270	8.74	8.71	34.143	26.493	158.3	0.690	1.65	25.2							271	205
300 ISL	8.54	8.51	34.166	26.542	154.0	0.737	1.53	23.3							302	
323	8.37	8.34	34.175	26.576	151.2	0.772	1.46	22.1							325	204
375	7.90	7.86	34.183	26.653	144.5	0.849	1.33	20.0							377	203
400 ISL	7.67	7.63	34.189	26.691	141.1	0.885	1.23	18.4							402	
441	7.25	7.21	34.196	26.757	135.2	0.941	1.05	15.5							444	202
500 ISL	6.47	6.42	34.184	26.853	126.2	1.018	0.85	12.3							503	
514	6.28	6.23	34.182	26.877	124.0	1.036	0.80	11.6							517	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.2 N	117 46.3 W	19/11/98	0340 UTC	73 m	010	05 kn			1017.1 mb	15.6 C	13.9 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	17.01	17.01	33.461	24.332	358.4	0.000	5.75	104.2					0.31	0.07	0	
1		17.01	17.01	33.461	24.332	358.4	0.004	5.75	104.2					0.31	0.07	1	207
6		16.98	16.98	33.472	24.348	357.1	0.021	5.74	104.0					0.33	0.09	6	206
10	ISL	16.93	16.93	33.467	24.356	356.5	0.036	5.74	103.9					0.32	0.08	10	
12		16.90	16.90	33.464	24.360	356.1	0.043	5.74	103.8					0.32	0.08	12	205
20	ISL	16.17	16.17	33.433	24.505	342.5	0.071	5.78	103.0					0.81	0.19	20	
21		16.03	16.03	33.431	24.536	339.7	0.074	5.78	102.7					0.89	0.21	21	204
30	ISL	14.22	14.22	33.485	24.972	298.3	0.103	5.09	87.3					1.26	0.41	30	
31		14.02	14.02	33.495	25.022	293.6	0.106	4.99	85.2					1.27	0.43	31	203
41		13.18	13.17	33.533	25.222	274.7	0.134	4.31	72.3					0.47	0.34	41	202
50	ISL	12.88	12.87	33.564	25.306	267.0	0.159	4.10	68.4					0.34	0.35	50	
54		12.74	12.73	33.578	25.345	263.4	0.169	4.01	66.7					0.28	0.36	54	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 24.8 N	117 53.5 W	19/11/98	0006 UTC	630 m	270	08 kn	270 02 11	1	1015.8 mb	16.9 C	15.8 C		1/8	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	16.96	16.96	33.472	24.352	356.5	0.000	5.76	104.3					0.33	0.08	0	
1		16.96	16.96	33.472	24.352	356.5	0.004	5.76	104.3					0.33	0.08	1	220
9		16.66	16.66	33.462	24.415	350.8	0.032	5.82	104.8					0.88	0.08	9	219
10	ISL	16.56	16.56	33.459	24.436	348.8	0.035	5.78	103.8					0.97	0.12	10	
19		15.34	15.34	33.448	24.703	323.7	0.066	5.30	92.9					1.38	0.49	19	218
20	ISL	15.17	15.17	33.453	24.744	319.8	0.069	5.24	91.6					1.30	0.49	20	
29		13.84	13.84	33.514	25.073	288.6	0.096	4.74	80.6					0.49	0.38	29	217
30	ISL	13.79	13.79	33.519	25.088	287.3	0.099	4.71	80.0					0.49	0.38	30	
39		13.48	13.47	33.549	25.174	279.3	0.125	4.48	75.7					0.49	0.43	39	216
49		12.81	12.80	33.578	25.331	264.6	0.152	4.19	69.8					0.38	0.34	49	215
50	ISL	12.75	12.74	33.580	25.344	263.4	0.154	4.17	69.4					0.38	0.34	50	
59		12.32	12.31	33.602	25.445	254.0	0.178	4.00	66.0					0.34	0.32	59	214
69		11.98	11.97	33.624	25.526	246.4	0.203	3.84	62.9					0.15	0.22	69	213
75	ISL	11.70	11.69	33.650	25.599	239.7	0.217	3.72	60.6					0.09	0.18	75	
83		11.33	11.32	33.695	25.702	230.0	0.236	3.52	56.9					0.05	0.13	83	212
99		10.85	10.84	33.796	25.867	214.6	0.272	3.04	48.6					0.02	0.07	99	211
100	ISL	10.83	10.82	33.801	25.875	213.9	0.274	3.02	48.3					0.02	0.07	100	
120		10.44	10.43	33.886	26.010	201.5	0.315	2.68	42.5					0.01	0.05	121	210
125	ISL	10.38	10.37	33.908	26.037	199.0	0.325	2.61	41.4					0.01	0.05	126	
138		10.26	10.24	33.963	26.101	193.2	0.351	2.46	38.9					0.00	0.04	139	209
150	ISL	10.14	10.12	34.010	26.158	188.0	0.374	2.31	36.4					0.00	0.03	151	
169		9.91	9.89	34.067	26.242	180.4	0.409	2.12	33.3					0.00	0.03	170	208
198		9.35	9.33	34.098	26.359	169.7	0.460	1.99	30.9					0.00	0.04	199	207
200	ISL	9.31	9.29	34.100	26.368	169.0	0.463	1.99	30.8							201	
228		8.84	8.82	34.120	26.458	160.7	0.509	1.95	29.9							229	206
250	ISL	8.53	8.50	34.131	26.516	155.6	0.544	1.88	28.6							251	
269		8.29	8.26	34.138	26.558	151.8	0.573	1.80	27.3							271	205
300	ISL	7.98	7.95	34.148	26.612	147.0	0.619	1.65	24.8							302	
321		7.79	7.76	34.155	26.646	144.1	0.650	1.52	22.8							323	204
377		7.24	7.20	34.194	26.756	134.3	0.728	1.09	16.1							379	203
400	ISL	7.08	7.04	34.211	26.792	131.1	0.758	0.94	13.8							403	
438		6.83	6.79	34.239	26.848	126.1	0.807	0.72	10.5							441	202
500	ISL	6.29	6.24	34.290	26.960	115.9	0.882	0.45	6.5							503	
527		6.06	6.01	34.313	27.008	111.5	0.913	0.33	4.7							531	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 15.1 N	118 14.7 W	19/11/98	0818 UTC	326 m	090	05 kn			1017.5 mb	15.5 C	13.5 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	16.82	16.82	33.481	24.392	352.7	0.000	5.65	102.0					0.24	0.06	0	
2		16.82	16.82	33.481	24.392	352.8	0.007	5.65	102.0					0.24	0.06	2	217
10	ISL	16.83	16.83	33.489	24.396	352.6	0.035	5.65	102.1					0.25	0.06	10	
11		16.83	16.83	33.49	24.397	352.6	0.039	5.65	102.1					0.25	0.06	11	216
20		16.79	16.79	33.479	24.398	352.8	0.071	5.64	101.8					0.26	0.07	20	215
29		15.08	15.08	33.439	24.753	319.2	0.101	5.65	98.5					0.55	0.18	29	214
30	ISL	14.96	14.96	33.442	24.781	316.5	0.104	5.62	97.8					0.56	0.19	30	
40		14.13	14.12	33.492	24.997	296.3	0.135	5.14	88.0					0.62	0.27	40	213
50		13.47	13.46	33.550	25.177	279.3	0.163	4.47	75.5					0.40	0.33	50	212
60		12.73	12.72	33.593	25.358	262.3	0.190	4.04	67.2					0.22	0.32	60	211
72		11.97	11.96	33.656	25.553	244.0	0.221	3.64	59.6					0.12	0.21	72	210
75	ISL	11.82	11.81	33.670	25.592	240.3	0.228	3.56	58.1					0.10	0.19	75	
85		11.40	11.39	33.715	25.705	229.8	0.252	3.35	54.2					0.06	0.12	85	209
100	ISL	11.04	11.03	33.771	25.814	219.8	0.285	3.09	49.6					0.03	0.08	100	
101		11.02	11.01	33.774	25.820	219.2	0.287	3.08	49.4					0.03	0.08	101	208
120		10.05	10.04	33.835	26.036	198.9	0.327	3.08	48.4					0.01	0.05	121	207
125	ISL	10.01	10.00	33.888	26.085	194.4	0.337	2.91	45.7					0.01	0.05	126	
140		9.90	9.88	34.012	26.200	183.7	0.365	2.33	36.6					0.00	0.04	141	206
150	ISL	9.87	9.85	34.059	26.242	180.0	0.384	2.16	33.9					0.00	0.05	151	
169		9.73	9.71	34.099	26.297	175.1	0.417	2.01	31.4					0.01	0.07	170	205
199		8.93	8.91	34.086	26.417	164.1	0.468							0.00	0.04	200	204
200	ISL	8.91	8.89	34.087	26.421	163.7	0.470	1.90	29.2							201	
229		8.34	8.32	34.128	26.542	152.6	0.516	1.85	28.0							230	203
250	ISL	8.10	8.07	34.146	26.592	148.1	0.547	1.71	25.8							251	
269		7.95	7.92	34.156	26.623	145.5	0.575	1.58	23.7							271	202
300	ISL	7.72	7.69	34.167	26.665	141.8	0.620	1.43	21.4							302	
319		7.58	7.55	34.174	26.691	139.6	0.646	1.34	20.0							321	201

RV ROBERT GORDON SPROUL | CALCOFI CRUISE 9811 | STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 11.2 N	118 22.8 W	19/11/98	1107 UTC	1177 m	070 05 kn			1017.8 mb	16.0 C	14.0 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	16.98	16.98	33.498	24.367	355.0	0.000	5.66	102.5					0.29	0.06	0	
2	16.98	16.98	33.498	24.367	355.1	0.007	5.66	102.5					0.29	0.06	2	220
10 ISL	16.99	16.99	33.498	24.365	355.5	0.036	5.67	102.7					0.30	0.07	10	
16	17.00	17.00	33.497	24.363	356.0	0.057	5.67	102.8					0.31	0.08	16	219
20 ISL	16.44	16.44	33.467	24.470	345.9	0.071	5.66	101.4					0.37	0.10	20	
30 ISL	14.82	14.82	33.428	24.801	314.6	0.104	5.63	97.7					0.51	0.22	30	
31	14.64	14.64	33.427	24.839	311.1	0.107	5.63	97.3					0.53	0.23	31	218
45	13.34	13.33	33.557	25.209	276.1	0.148	4.50	75.8					0.59	0.53	45	217
50 ISL	12.98	12.97	33.570	25.291	268.4	0.162	4.33	72.4					0.44	0.51	50	
54	12.73	12.72	33.576	25.345	263.4	0.172	4.23	70.3					0.31	0.49	54	216
66	12.16	12.15	33.630	25.497	249.2	0.203	3.83	63.0					0.14	0.27	66	215
75 ISL	11.90	11.89	33.645	25.558	243.6	0.225	3.72	60.8					0.11	0.23	75	
76	11.87	11.86	33.648 D	25.566	242.9	0.228	3.70	60.4					0.11	0.23	76	214
85	11.25	11.24	33.723	25.739	226.6	0.249	3.31	53.4					0.05	0.11	85	213
95	10.54	10.53	33.767	25.899	211.5	0.271	3.24	51.5					0.03	0.12	95	212
100 ISL	10.34	10.33	33.777	25.941	207.5	0.281	3.23	51.1					0.02	0.11	100	
110	10.11	10.10	33.799	25.998	202.3	0.302	3.22	50.7					0.01	0.08	111	211
125	9.93	9.92	33.881	26.093	193.6	0.331	2.89	45.3					0.01	0.05	126	210
145	9.88	9.86	33.999	26.194	184.5	0.369	2.38	37.3					0.00	0.05	146	209
150 ISL	9.77	9.75	34.010	26.221	182.0	0.378	2.33	36.4					0.00	0.05	151	
167	9.37	9.35	34.031	26.303	174.4	0.409	2.25	34.9					0.00	0.04	168	208
199	9.05	9.03	34.107	26.415	164.4	0.463	1.99	30.6					0.00	0.04	200	207
200 ISL	9.03	9.01	34.108	26.419	164.0	0.465	1.99	30.6							201	
229	8.52	8.50	34.122	26.510	155.7	0.511	1.92	29.2							230	206
250 ISL	8.20	8.17	34.137	26.570	150.2	0.543	1.76	26.6							251	
268	7.95	7.92	34.151	26.619	145.8	0.570	1.60	24.0							270	205
300 ISL	7.56	7.53	34.170	26.691	139.3	0.615	1.36	20.3							302	
320	7.36	7.33	34.181	26.728	136.0	0.643	1.22	18.1							322	204
377	6.98	6.94	34.223	26.814	128.5	0.718	0.82	12.1							379	203
400 ISL	6.75	6.71	34.239	26.859	124.5	0.747	0.69	10.1							403	
437	6.39	6.35	34.264	26.926	118.3	0.792	0.51	7.4							440	202
500 ISL	6.02	5.98	34.301	27.004	111.6	0.865	0.36	5.2							503	
519	5.91	5.86	34.312	27.026	109.6	0.886	0.31	4.4							523	201

RV ROBERT GORDON SPROUL | CALCOFI CRUISE 9811 | STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 55.2 N	118 56.1 W	19/11/98	1706 UTC	1703 m	340 07 kn	260 03 06		1020.0 mb	15.1 C	14.5 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	15.00	15.00	33.377	24.722	321.3	0.000	6.05	105.3					1.01	0.57	0	
2	15.00	15.00	33.377	24.722	321.3	0.006	6.05	105.3					1.01	0.57	2	220
10	14.94	14.94	33.378	24.736	320.2	0.032	6.06	105.4					1.16	0.64	10	219
20	14.76	14.76	33.412	24.801	314.3	0.064	6.05	104.8					3.64	1.62	20	218
29	14.65	14.65	33.438	24.845	310.4	0.092	5.90	102.0					4.12	1.71	29	217
30 ISL	14.57	14.57	33.437	24.861	308.9	0.095	5.83	100.6					3.84	1.61	30	
41	13.44	13.43	33.415	25.079	288.4	0.128	5.05	85.2					0.49	0.44	41	216
50	12.56	12.55	33.392	25.235	273.7	0.153	4.70	77.8					0.16	0.35	50	215
60	11.54	11.53	33.479	25.495	249.1	0.179	4.21	68.2					0.11	0.29	60	214
70	10.99	10.98	33.545	25.646	234.9	0.204	3.97	63.6					0.08	0.23	70	213
75 ISL	10.81	10.80	33.603	25.724	227.7	0.215	3.81	60.8					0.07	0.20	75	
86	10.46	10.45	33.731	25.885	212.6	0.239	3.47	55.0					0.05	0.15	86	212
99	9.92	9.91	33.820	26.046	197.4	0.266	3.19	50.0					0.03	0.10	99	211
100 ISL	9.90	9.89	33.826	26.054	196.7	0.268	3.17	49.7					0.03	0.10	100	
119	9.58	9.57	33.919	26.180	185.1	0.304	2.76	43.0					0.03	0.08	120	210
125 ISL	9.44	9.43	33.948	26.226	180.8	0.315	2.66	41.3					0.03	0.08	126	
138	9.14	9.12	34.003	26.318	172.3	0.338	2.47	38.1					0.02	0.08	139	209
150 ISL	9.02	9.00	34.033	26.361	168.5	0.359	2.37	36.5					0.02	0.07	151	
169	8.89	8.87	34.061	26.403	164.8	0.390	2.25	34.5					0.01	0.06	170	208
198	8.44	8.42	34.100	26.504	155.6	0.437	2.05	31.1					0.01	0.05	199	207
200 ISL	8.40	8.38	34.103	26.513	154.8	0.440	2.03	30.8							201	
228	7.89	7.87	34.131	26.611	145.8	0.482	1.72	25.8							229	206
250 ISL	7.61	7.59	34.135	26.655	141.9	0.514	1.62	24.1							251	
267	7.44	7.41	34.134	26.679	139.8	0.537	1.56	23.2							269	205
300 ISL	7.13	7.10	34.145	26.731	135.2	0.583	1.36	20.0							302	
317	7.01	6.98	34.155	26.756	133.1	0.606	1.25	18.4							319	204
377	6.78	6.75	34.218	26.838	126.1	0.683	0.84	12.3							379	203
400 ISL	6.64	6.60	34.233	26.869	123.5	0.712	0.72	10.5							403	
439	6.39	6.35	34.254	26.918	119.1	0.759	0.55	8.0							442	202
500 ISL	6.05	6.01	34.289	26.990	112.8	0.830	0.38	5.5							503	
515	5.97	5.92	34.298	27.008	111.3	0.847	0.34	4.9							519	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 38.9 N	119 28.3 W	19/11/98	2310 UTC	1286 m	330 08 kn	340 04 09	1	1019.5 mb	16.1 C	14.6 C		6/8	AS

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	15.28	15.28	33.390	24.671	326.1	0.000	6.00	105.0					0.80	0.37	0	
2		15.28	15.28	33.390	24.671	326.2	0.007	6.00	105.0					0.80	0.37	2	220
10		15.03	15.03	33.388	24.724	321.4	0.032	6.04	105.2					0.81	0.41	10	219
20		14.99	14.99	33.388	24.733	320.8	0.065	6.00	104.4					0.89	0.52	20	218
30		15.00	15.00	33.402	24.742	320.2	0.097	5.97	103.9					1.72	0.82	30	217
41		14.91	14.90	33.445	24.795	315.5	0.132	5.87	102.0					1.99	0.83	41	216
50		14.14	14.13	33.421	24.940	301.9	0.159	5.58	95.5					1.45	0.78	50	215
60		12.33	12.32	33.301	25.209	276.4	0.188	4.89	80.5					0.25	0.34	60	214
70		12.08	12.07	33.399	25.333	264.8	0.215	4.76	78.0					0.18	0.35	70	213
75	ISL	11.75	11.74	33.458	25.441	254.7	0.228	4.61	75.0					0.15	0.30	75	
84		11.10	11.09	33.562	25.640	235.9	0.250	4.32	69.4					0.10	0.20	84	212
98		10.50	10.49	33.670	25.830	218.0	0.282	4.07	64.6					0.06	0.14	98	211
100	ISL	10.43	10.42	33.677	25.848	216.4	0.287	4.03	63.8					0.06	0.14	100	
119		9.85	9.84	33.734	25.991	203.1	0.326	3.65	57.1					0.04	0.12	120	210
125	ISL	9.62	9.61	33.768	26.056	197.0	0.338	3.54	55.1					0.03	0.11	126	
137		9.19	9.18	33.841	26.183	185.1	0.361	3.35	51.7					0.02	0.09	138	209
150	ISL	8.88	8.86	33.901	26.279	176.1	0.385	3.24	49.7					0.02	0.08	151	
169		8.55	8.53	33.963	26.379	166.9	0.417	3.13	47.6					0.01	0.06	170	208
200		8.11	8.09	34.011	26.484	157.4	0.468	2.89	43.5					0.01	0.04	201	207
227		7.84	7.82	34.040	26.547	151.8	0.509	2.53	37.9							228	206
250	ISL	7.58	7.56	34.066	26.605	146.5	0.544	2.20	32.8							251	
269		7.37	7.34	34.085	26.650	142.5	0.571	1.94	28.8							271	205
300	ISL	7.06	7.03	34.099	26.705	137.7	0.615	1.66	24.4							302	
318		6.89	6.86	34.105	26.733	135.2	0.639	1.52	22.3							320	204
377		6.45	6.42	34.143	26.822	127.3	0.717	1.07	15.5							379	203
400	ISL	6.25	6.21	34.168	26.868	123.1	0.745	0.88	12.7							403	
438		5.95	5.91	34.213	26.942	116.4	0.791	0.61	8.7							441	202
500	ISL	5.75	5.71	34.272	27.014	110.2	0.861	0.43	6.1							503	
517		5.70	5.66	34.288	27.033	108.6	0.880	0.38	5.4							521	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 24.9 N	119 57.2 W	20/11/98	0506 UTC	934 m	350 18 kn			1021.2 mb	16.0 C	13.8 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	15.65	15.65	33.325	24.539	338.7	0.000									0	
1		15.65	15.65	33.325 D	24.539	338.7	0.003									1	221
10		15.65	15.65	33.336 D	24.548	338.2	0.034									10	220
20		15.66	15.66	33.336 D	24.546	338.7	0.068									20	219
30		15.66	15.66	33.337 D	24.547	338.9	0.102									30	218
40		15.46	15.45	33.341 D	24.595	334.6	0.135									40	217
50		15.05	15.04	33.396 D	24.727	322.3	0.168									50	216
60		14.29	14.28	33.380 D	24.877	308.2	0.200									60	215
70		12.97	12.96	33.301 D	25.085	288.5	0.229									70	214
75	ISL	12.56	12.55	33.325	25.184	279.2	0.244									75	
79		12.31	12.30	33.357 D	25.257	272.4	0.255									79	213
95		11.83	11.82	33.469	25.435	255.8	0.297	4.64	75.6					0.11	0.22	95	212
100	ISL	11.38	11.37	33.527	25.563	243.7	0.309	4.42	71.4					0.09	0.17	100	
109		10.58	10.57	33.627	25.783	222.8	0.330	4.03	64.0					0.05	0.09	109	211
125		10.15	10.14	33.672	25.892	212.7	0.365	3.78	59.5					0.03	0.09	126	210
143		9.54	9.52	33.788	26.085	194.6	0.402	3.52	54.7					0.02	0.06	144	209
150	ISL	9.34	9.32	33.831	26.151	188.4	0.415	3.42	52.9					0.01	0.05	151	
168		8.90	8.88	33.927	26.297	174.8	0.448	3.13	48.0					0.00	0.03	169	208
199		8.43	8.41	34.022	26.444	161.3	0.500	2.56	38.9					0.00	0.03	200	207
200	ISL	8.42	8.40	34.023	26.447	161.1	0.502	2.56	38.9							201	
231		7.98	7.96	34.038	26.525	154.0	0.551	2.58	38.8							232	206
250	ISL	7.71	7.69	34.047	26.572	149.8	0.579	2.46	36.7							251	
265		7.52	7.49	34.056	26.606	146.7	0.602	2.31	34.3							267	205
300	ISL	7.29	7.26	34.093	26.668	141.3	0.652	1.86	27.5							302	
320		7.19	7.16	34.115	26.700	138.6	0.680	1.61	23.8							322	204
380		6.59	6.56	34.152	26.811	128.5	0.760	1.28	18.6							382	203
400	ISL	6.47	6.43	34.174	26.844	125.6	0.786	1.05	15.2							403	
434		6.30	6.26	34.210	26.895	121.1	0.827	0.67	9.7							437	202
500	ISL	5.85	5.81	34.234	26.972	114.3	0.905	0.49	7.0							503	
517		5.73	5.69	34.241	26.992	112.5	0.924	0.44	6.3							521	201

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LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 5.4 N	120 37.5 W	20/11/98	1214 UTC	3797 m	350 17 kn			1021.1 mb	15.0 C	13.0 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	15.54	15.54	33.318	24.558	336.9	0.000	5.71	100.4					0.41	0.14	0	
2		15.54	15.54	33.318	24.558	336.9	0.007	5.71	100.4					0.41	0.14	2	220
10	ISL	15.55	15.55	33.318	24.556	337.4	0.034	5.70	100.3					0.43	0.15	10	
16		15.55	15.55	33.318	24.556	337.5	0.054	5.70	100.3					0.45	0.15	16	219
20	ISL	15.55	15.55	33.318	24.556	337.6	0.067	5.71	100.5					0.44	0.15	20	
30	ISL	15.55	15.55	33.317	24.556	338.0	0.101	5.73	100.8					0.42	0.14	30	
31		15.55	15.55	33.317	24.556	338.0	0.105	5.73	100.8					0.42	0.14	31	218
46		15.55	15.54	33.317	24.557	338.4	0.155	5.70	100.3					0.43	0.14	46	217
50	ISL	15.54	15.53	33.316	24.558	338.4	0.169	5.71	100.4					0.44	0.14	50	
53		15.54	15.53	33.316	24.558	338.5	0.179	5.71	100.4					0.44	0.14	53	216
63		13.63	13.62	33.253 D	24.916	304.5	0.211	4.66 U	78.8 U					0.15 U	0.19 U	63	215
75		12.71	12.70	33.307	25.141	283.3	0.246	5.03	83.5					0.11	0.18	75	214
85		12.10	12.09	33.436	25.358	262.8	0.274	4.57	74.9					0.15	0.16	85	213
95		11.55	11.54	33.495	25.507	248.9	0.299	4.33	70.2					0.06	0.10	95	212
100	ISL	11.22	11.21	33.547	25.607	239.4	0.312	4.17	67.1					0.05	0.08	100	
111		10.60	10.59	33.663	25.808	220.5	0.337	3.84	61.0					0.03	0.05	112	211
125		10.27	10.26	33.740	25.925	209.6	0.367	3.58	56.5					0.02	0.05	126	210
145		9.73	9.71	33.819	26.078	195.4	0.407	3.26	50.9					0.01	0.03	146	209
150	ISL	9.66	9.64	33.849	26.113	192.1	0.417	3.15	49.1					0.01	0.03	151	
170		9.43	9.41	33.973	26.248	179.7	0.454	2.70	41.9					0.00	0.03	171	208
199		8.99	8.97	34.101	26.419	163.9	0.504	2.21	34.0					0.00	0.02	200	207
200	ISL	8.98	8.96	34.104	26.423	163.5	0.506	2.19	33.7							201	
229		8.72	8.70	34.183	26.527	154.2	0.552	1.71	26.2							230	206
250	ISL	8.40	8.37	34.203	26.592	148.3	0.584	1.52	23.1							251	
268		8.11	8.08	34.211	26.642	143.7	0.610	1.40	21.1							270	205
300	ISL	7.73	7.70	34.235	26.717	136.9	0.655	1.10	16.5							302	
319		7.55	7.52	34.248	26.754	133.7	0.681	0.93	13.9							321	204
379		7.14	7.10	34.275	26.833	126.9	0.759	0.65	9.6							381	203
400	ISL	6.98	6.94	34.286	26.865	124.2	0.785	0.55	8.1							403	
438		6.72	6.68	34.309	26.918	119.4	0.831	0.40	5.8							441	202
500	ISL	6.43	6.38	34.346	26.987	113.6	0.904	0.25	3.6							503	
510		6.38	6.33	34.352	26.998	112.7	0.915	0.23	3.3							513	201

RV ROBERT GORDON SPROUL | CALCOFI CRUISE 9811 | STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 44.9 N	121 19.1 W	20/11/98	1918 UTC	3676 m	340 22 kn	270 05 05	0	1023.5 mb	16.6 C	14.1 C		0/8

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	16.78	16.78	33.419	24.354	356.3	0.000	5.62	101.4					0.17	0.05	0	
2		16.78	16.78	33.419	24.354	356.4	0.007	5.62	101.4					0.17	0.05	2	220
10	ISL	16.77	16.77	33.410	24.349	357.1	0.036	5.62	101.3					0.17	0.05	10	
16		16.77	16.77	33.402	24.344	357.8	0.057	5.62	101.3					0.17	0.05	16	219
20	ISL	16.77	16.77	33.402	24.344	358.0	0.071	5.62	101.3					0.17	0.05	20	
30	ISL	16.77	16.77	33.401	24.343	358.3	0.107	5.62	101.3					0.18	0.05	30	
31		16.77	16.76	33.401	24.343	358.3	0.111	5.62	101.3					0.18	0.05	31	218
45		16.76	16.75	33.402	24.347	358.5	0.161	5.68	102.4					0.19	0.05	45	217
50	ISL	16.76	16.75	33.403	24.348	358.5	0.179	5.65	101.8					0.19	0.05	50	
55		16.76	16.75	33.404	24.349	358.6	0.197	5.60	100.9					0.19	0.05	55	216
63		16.29	16.28	33.376 D	24.436	350.5	0.225	5.50	98.2					0.28	0.19	63	215
74		14.28	14.27	33.290 D	24.810	315.0	0.262	5.31 U	91.0 U					0.34	0.29	74	214
75	ISL	14.28	14.27	33.309	24.825	313.6	0.265	5.39	92.4					0.33	0.29	75	
85		14.24	14.23	33.460 D	24.950	302.0	0.296	5.00 U	85.7 U					0.25	0.30	85	213
95		13.42	13.41	33.520	25.166	281.6	0.325	5.13	86.5					0.21	0.32	95	212
100	ISL	13.12	13.11	33.541	25.242	274.5	0.339	5.02	84.1					0.18	0.29	100	
110		12.55	12.54	33.571	25.378	261.7	0.366	4.79	79.3					0.13	0.22	110	211
125		11.48	11.46	33.604	25.605	240.3	0.403	4.47	72.4					0.09	0.13	126	210
143		10.47	10.45	33.692	25.854	216.8	0.444	4.02	63.7					0.04	0.07	144	209
150	ISL	10.17	10.15	33.723	25.929	209.7	0.459	3.96	62.4					0.03	0.06	151	
172		9.46	9.44	33.816	26.120	191.8	0.504	3.84	59.6					0.01	0.03	173	208
196		8.90	8.88	33.917	26.290	176.1	0.548	3.52	54.0					0.00	0.03	197	207
200	ISL	8.82	8.80	33.931	26.313	173.9	0.555	3.43	52.5							201	
229		8.33	8.31	34.010	26.451	161.2	0.603	2.79	42.2							230	206
250	ISL	7.99	7.96	34.034	26.521	154.8	0.636	2.57	38.6							251	
270		7.72	7.69	34.049	26.572	150.1	0.667	2.41	36.0							271	205
300	ISL	7.55	7.52	34.094	26.632	144.9	0.711	1.98	29.5							302	
321		7.46	7.43	34.124	26.669	141.7	0.741	1.68	25.0							323	204
379		6.85	6.81	34.170	26.790	130.7	0.820	1.14	16.7							381	203
400	ISL	6.70	6.66	34.192	26.828	127.3	0.847	0.95	13.9							402	
440		6.44	6.40	34.234	26.896	121.3	0.897	0.65	9.4							443	202
500	ISL	5.99	5.95	34.275	26.987	113.1	0.967	0.48	6.9							503	
512		5.90	5.86	34.284	27.005	111.4	0.981	0.45	6.4							515	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 25.4 N	121 58.9 W	21/11/98	0150 UTC	3910 m	350 20 kn			1022.9 mb	15.2 C	14.0 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	16.26	16.26	33.324	24.401	351.9	0.000	5.71	101.9					0.19	0.05	0	
2	16.26	16.26	33.324	24.401	351.9	0.007	5.71	101.9					0.19	0.05	2	220
10 ISL	16.26	16.26	33.323	24.400	352.2	0.035	5.70	101.7					0.20	0.05	10	
14	16.26	16.26	33.323	24.400	352.3	0.049	5.70	101.7					0.20	0.05	14	219
20 ISL	16.26	16.26	33.323	24.401	352.5	0.070	5.69	101.5					0.20	0.05	20	
30	16.27	16.27	33.324	24.399	353.0	0.106	5.67	101.2					0.19	0.05	30	218
46	16.27	16.26	33.322	24.398	353.6	0.162	5.70	101.7					0.22	0.07	46	217
50 ISL	16.24	16.23	33.323	24.406	352.9	0.176	5.70	101.7					0.23	0.08	50	
55	16.20	16.19	33.323	24.415	352.2	0.194	5.69	101.4					0.26	0.09	55	216
65	15.64	15.63	33.335	24.551	339.6	0.229	5.78	101.9					0.43	0.25	65	215
75	15.16	15.15	33.329 D	24.652	330.2	0.262	5.78	100.9					0.41	0.28	75	214
85	14.29	14.28	33.279 D	24.800	316.3	0.294	5.43 U	93.1 U					0.28	0.24	85	213
95	13.33	13.32	33.252	24.976	299.6	0.325	5.53	92.9					0.18	0.21	95	212
100 ISL	12.98	12.97	33.268	25.058	291.9	0.340	5.36	89.4					0.16	0.20	100	
109	12.43	12.42	33.325	25.210	277.6	0.366	5.03	83.0					0.13	0.17	109	211
125	11.45	11.43	33.469	25.505	249.7	0.408	4.52	73.1					0.06	0.10	126	210
143	10.87	10.85	33.668	25.765	225.4	0.451	4.44	71.0					0.04	0.08	144	209
150 ISL	10.57	10.55	33.713	25.853	217.1	0.466	4.35	69.1					0.03	0.06	151	
167	9.85	9.83	33.792	26.037	199.7	0.501	4.10	64.2					0.01	0.03	168	208
199	8.97	8.95	33.914	26.276	177.4	0.562	3.76	57.7					0.00	0.02	200	207
200 ISL	8.95	8.93	33.917	26.282	176.9	0.564	3.75	57.6							201	
227	8.35	8.33	33.986	26.429	163.3	0.610	3.34	50.6							228	206
250 ISL	7.95	7.92	34.013	26.510	155.8	0.646	3.00	45.0							251	
269	7.65	7.62	34.021	26.560	151.2	0.675	2.75	41.0							270	205
300 ISL	7.15	7.12	34.021	26.631	144.7	0.721	2.50	36.8							302	
316	6.92	6.89	34.021	26.663	141.8	0.744	2.37	34.7							318	204
378	6.37	6.34	34.076	26.780	131.2	0.829	1.48	21.4							380	203
400 ISL	6.20	6.16	34.092	26.814	128.1	0.857	1.27	18.3							402	
440	5.93	5.89	34.122	26.873	122.9	0.908	0.96	13.8							443	202
500 ISL	5.59	5.55	34.190	26.969	114.3	0.979	0.60	8.5							503	
517	5.49	5.45	34.209	26.996	111.8	0.998	0.50	7.1							520	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9811 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 5.3 N	122 39.3 W	21/11/98	0909 UTC	4030 m	050 20 kn			1023.9 mb	15.0 C	13.5 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	16.38	16.38	33.347	24.391	352.8	0.000	5.66	101.3					0.17	0.04	0	
3	16.38	16.38	33.347	24.391	352.9	0.011	5.66	101.2					0.17	0.04	3	220
10 ISL	16.39	16.39	33.348	24.390	353.2	0.035	5.66	101.3					0.16	0.04	10	
15	16.39	16.39	33.348	24.390	353.4	0.053	5.67	101.4					0.16	0.04	15	219
20 ISL	16.34	16.34	33.345	24.399	352.6	0.071	5.68	101.5					0.18	0.04	20	
30	16.15	16.15	33.334	24.434	349.6	0.106	5.69	101.3					0.21	0.05	30	218
44	15.68	15.67	33.304	24.517	342.1	0.154	5.79	102.1					0.38	0.13	44	217
50 ISL	15.49	15.48	33.291	24.550	339.2	0.175	5.78	101.5					0.43	0.17	50	
55	15.35	15.34	33.286	24.577	336.7	0.191	5.78	101.2					0.47	0.20	55	216
65	15.13	15.12	33.306	24.641	330.9	0.225	5.76	100.5					0.54	0.27	65	215
74	14.83	14.82	33.327 D	24.722	323.4	0.254	5.43 U	94.1 U					0.32	0.22	74	214
75 ISL	14.74	14.73	33.318	24.735	322.3	0.258	5.69	98.5					0.30	0.21	75	
85	13.81	13.80	33.235 D	24.866	310.0	0.289	5.14 U	87.2 U					0.14	0.15	85	213
95	13.23	13.22	33.262	25.004	297.0	0.319	5.54	92.9					0.14	0.18	95	212
100 ISL	12.98	12.97	33.280	25.068	291.0	0.334	5.38	89.8					0.14	0.17	100	
110	12.52	12.51	33.346	25.209	277.7	0.363	5.03	83.1					0.13	0.16	110	211
125	11.77	11.75	33.557	25.515	248.9	0.402	4.69	76.4					0.07	0.10	126	210
144	10.60	10.58	33.688	25.828	219.3	0.447	4.33	68.8					0.03	0.07	145	209
150 ISL	10.32	10.30	33.726	25.906	212.0	0.460	4.24	67.0					0.02	0.06	151	
170	9.61	9.59	33.838	26.113	192.5	0.500	4.02	62.6					0.01	0.02	171	208
200 ISL	9.06	9.04	33.959	26.297	175.5	0.555	4.04	62.2					0.00	0.02	201	
201	9.05	9.03	33.962	26.301	175.1	0.557	4.04	62.2					0.00	0.02	202	207
226	8.46	8.44	33.993	26.418	164.3	0.599	3.50	53.2							227	206
250 ISL	8.04	8.01	34.000	26.487	158.0	0.638	3.22	48.4							251	
268	7.77	7.74	33.999	26.526	154.5	0.666	3.07	45.9							269	205
300 ISL	7.25	7.22	34.009	26.608	147.0	0.714	2.66	39.3							302	
316	7.01	6.98	34.015	26.646	143.5	0.738	2.45	36.0							318	204
376	6.31	6.28	34.036	26.756	133.4	0.821	1.75	25.3							378	203
400 ISL	6.11	6.07	34.068	26.807	128.7	0.852	1.46	21.0							402	
436	5.88	5.84	34.124	26.880	122.1	0.897	1.06	15.2							439	202
500 ISL	5.58	5.54	34.200	26.978	113.4	0.973	0.57	8.1							503	
516	5.50	5.46	34.219	27.003	111.2	0.991	0.45	6.4							519	201

CalCOFI Cruise 9811

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)
83	40.6	34 13.6	119 24.9	11/23	1346	1349	75	27	13	13
83	42	34 11.1	119 31.7	11/23	1130	1144	273	115	33	33
83	51	33 52.3	120 09.7	11/23	0437	0458	504	192	18	18
83	55	33 45.3	120 25.6	11/23	0038	0100	488	203	53	53
83	60	33 34.6	120 46.6	11/22	1933	1955	497	204	191	157
83	70	33 14.9	121 26.8	11/22	1223	1246	521	206	59	59
83	80	32 54.7	122 09.5	11/22	0510	0532	474	214	38	38
83	90	32 34.5	122 49.3	11/21	2136	2157	414	206	53	53
83	100	32 15.5	123 31.0	11/21	1423	1446	462	211	24	24
90	28	33 29.3	117 47.3	11/18	2030	2051	444	206	34	34
90	30	33 25.2	117 54.6	11/18	1756	1817	411	212	32	32
90	35	33 15.0	118 15.0	11/19	0110	0131	452	204	75	75
90	37	33 11.1	118 23.3	11/19	0406	0428	463	207	61	61
90	45	32 55.5	118 56.4	11/19	1005	1027	478	210	59	59
90	53	32 38.7	119 28.2	11/19	1616	1638	458	215	55	55

PERSONNEL

CalCOFI Cruise 9812

SHIP'S CAPTAIN

Wesley J. Hill, RV *Robert Gordon Sproul*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

Wilkinson, James R. (Chief Scientist)	Programmer/Analyst, SIO
Cummings, Sherry L.	Staff Research Associate, SIO
Dotson, Ronald C.	Fishery Biologist, NMFS
Gruber, Dennis W.	Staff Research Associate, SIO
Hays, Amy E.	Fishery Biologist, NMFS
Lipsky, Jessica D.	Volunteer
Rebstock, Ginger A.	Graduate Student, SIO
Rusk, Steven W.	Marine Technician
Swensen, Daryl L.	Biological Technician, NMFS
Wilson, Robert C.	Resident Technician, SIO
Wolgast, David M.	Staff Research Associate, SIO

FIGURES

Cruise 9812

1. CalCOFI Cruise 9812, track and station positions.

2. Sections along CalCOFI line 90 (vertical exaggeration, 1000): A) potential density and geostrophic velocity (+ = northward); B) temperature; C) salinity; D) oxygen saturation; E) oxygen; F) chlorophyll-*a*; and G) phaeopigments.

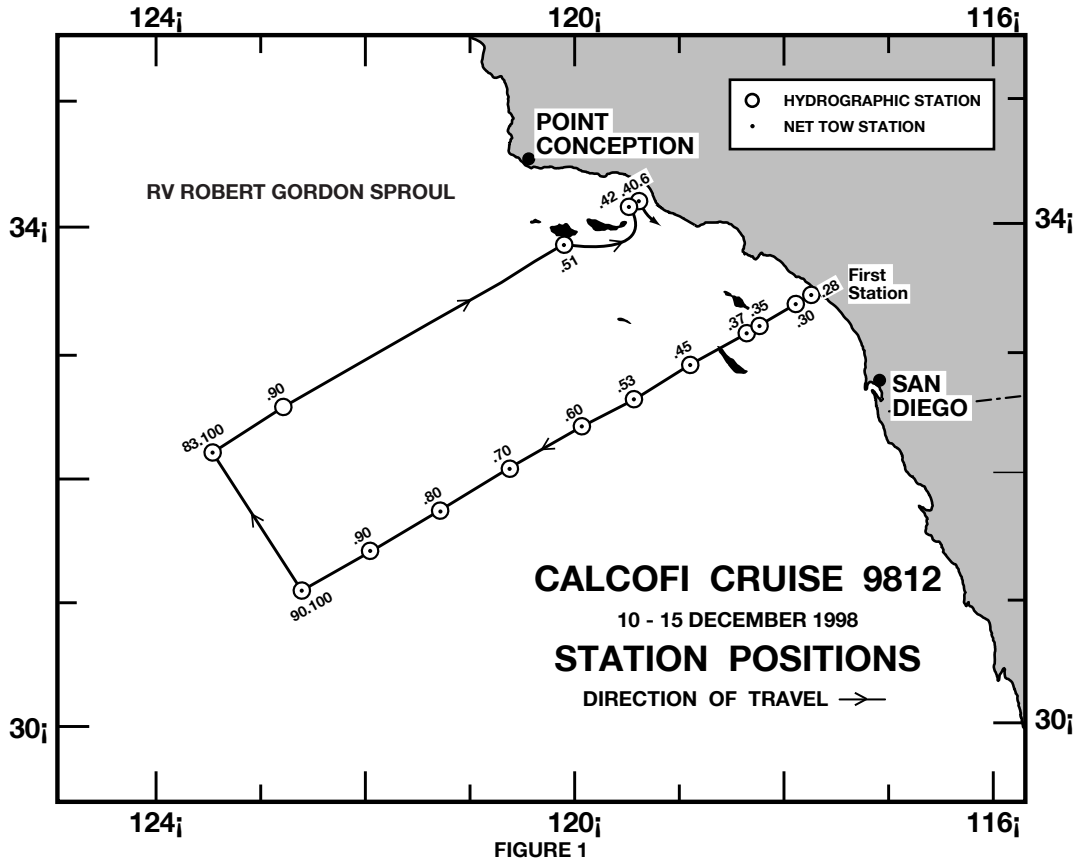


FIGURE 1

CALCOFI CRUISE 9812

10 - 13 DECEMBER 1998

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90
GEOSTROPHIC VELOCITY RELATIVE TO 500m (cm/s)

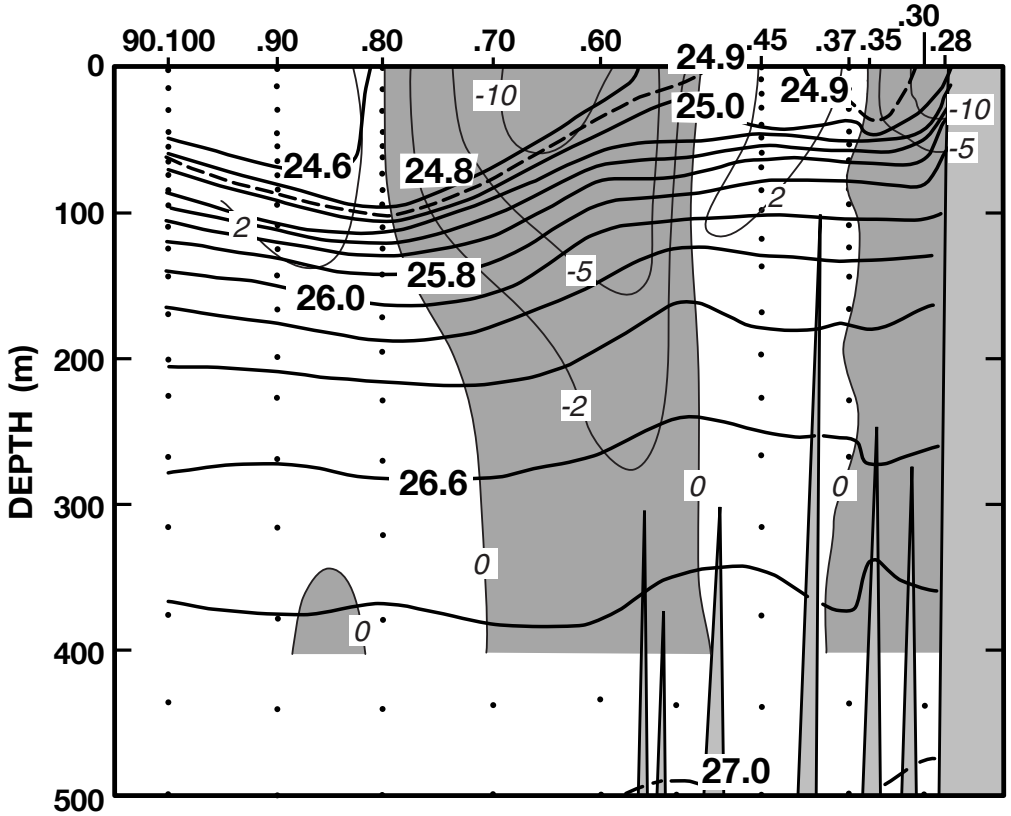


FIGURE 2A

CALCOFI CRUISE 9812

10 - 13 DECEMBER 1998

TEMPERATURE (ºC) ALONG CALCOFI LINE 90

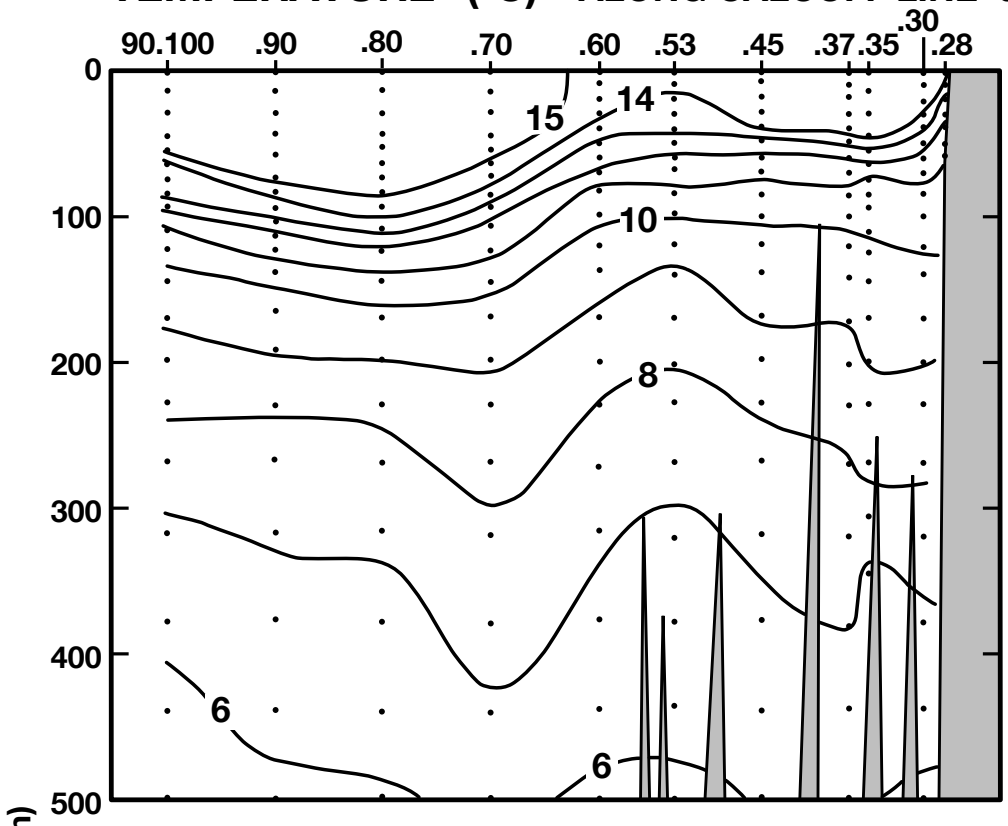


FIGURE 2B

SALINITY ALONG CALCOFI LINE 90

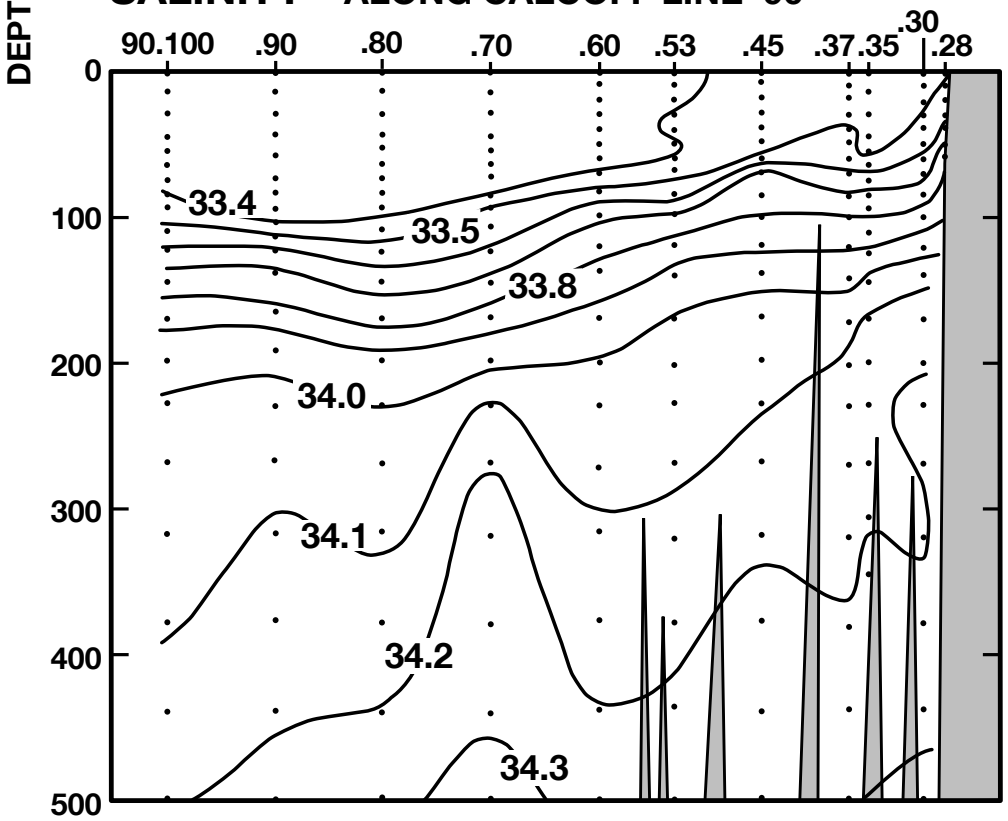


FIGURE 2C

CALCOFI CRUISE 9812

10 - 13 DECEMBER 1998

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

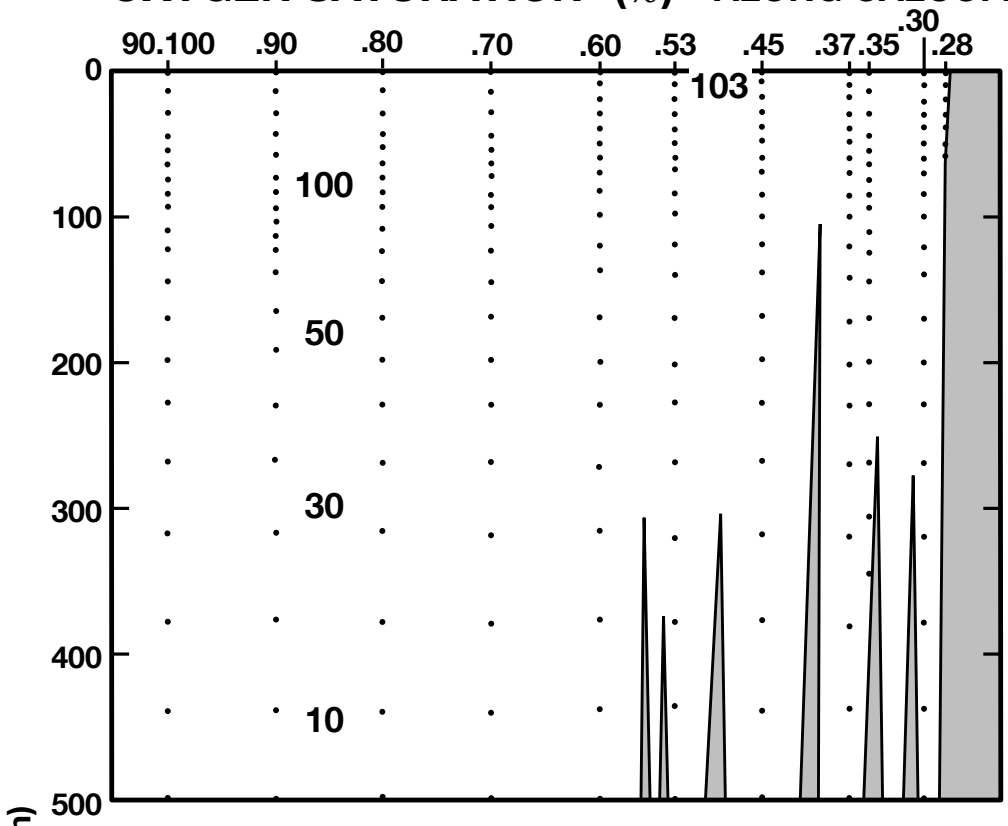


FIGURE 2D

OXYGEN (ml/l) ALONG CALCOFI LINE 90

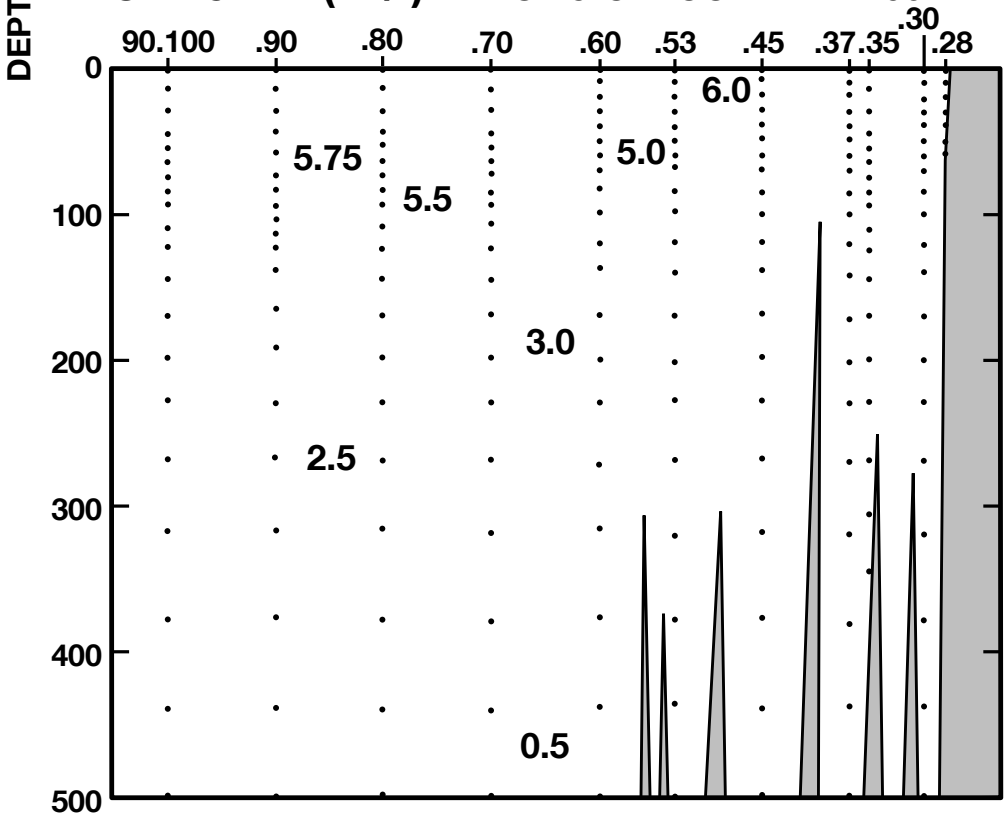


FIGURE 2E

CALCOFI CRUISE 9812

10 - 13 DECEMBER 1998

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

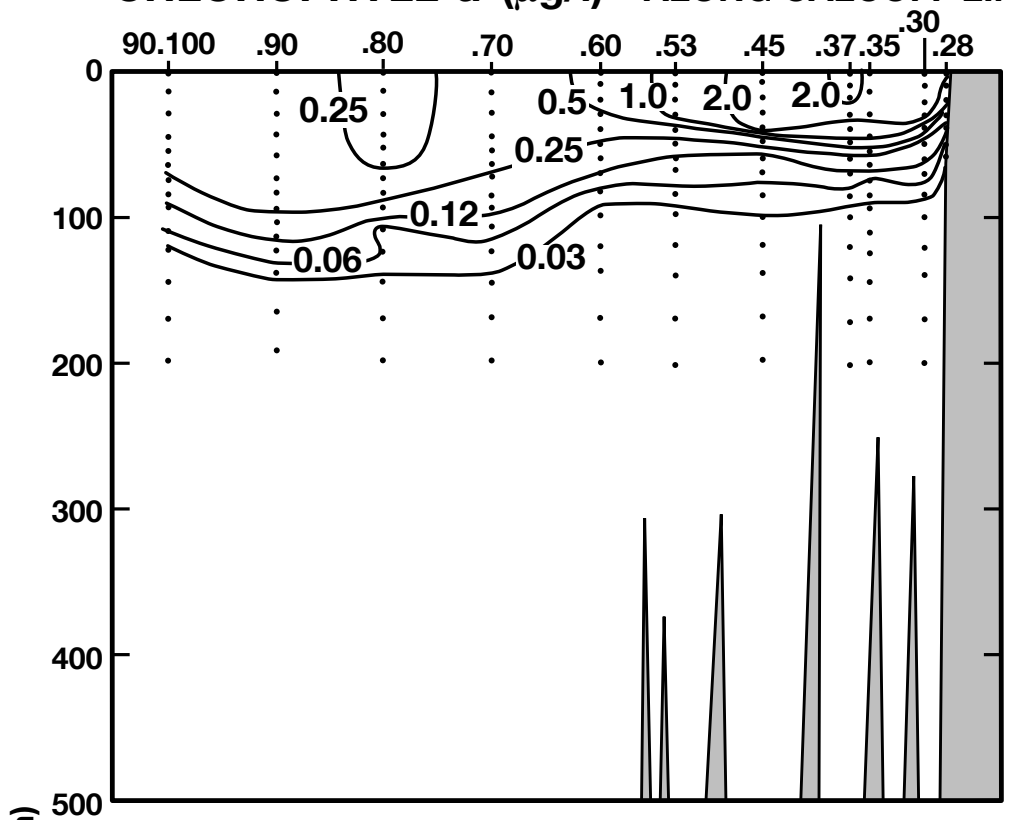


FIGURE 2F

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

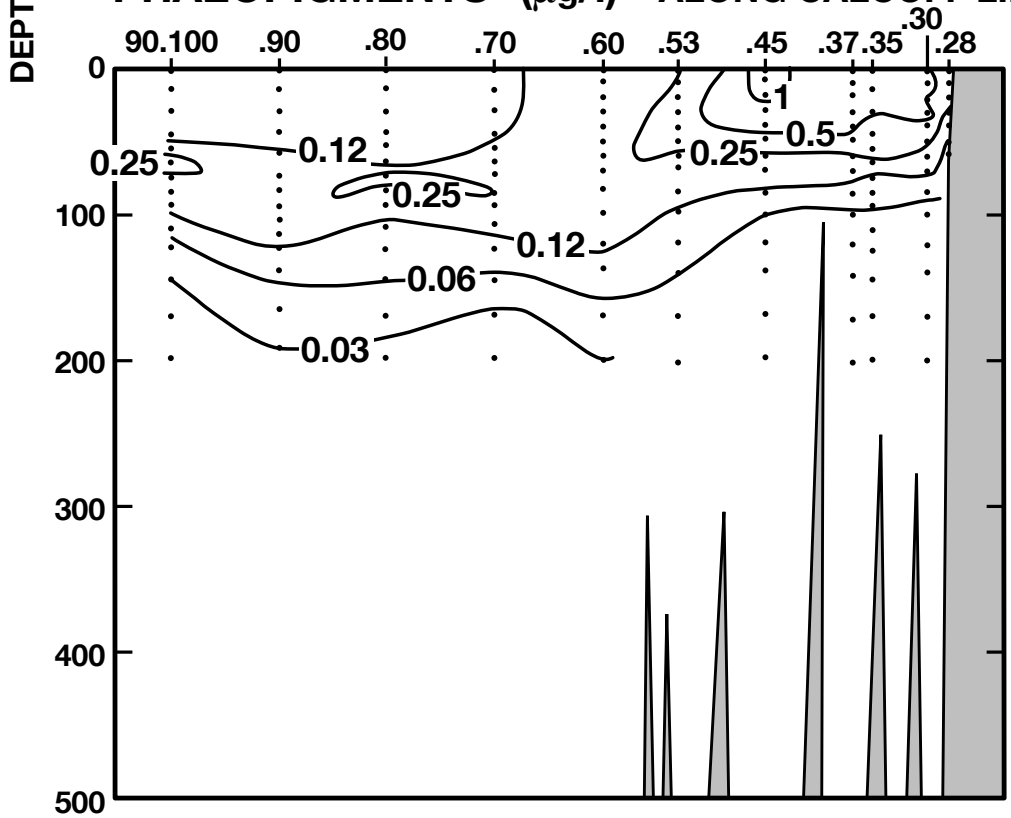


FIGURE 2G

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 13.6 N	119 24.8 W	15/12/98	1315 UTC	35 m	100 05 kn			1019.5 mb	12.9 C	10.6 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	13.40	13.40	33.555	25.194	276.3	0.000	5.72	96.5					1.44	0.41	0	
1	13.40	13.40	33.555	25.194	276.3	0.003	5.72	96.5					1.44	0.41	1	205
5	13.41	13.41	33.557	25.194	276.5	0.014	5.70	96.1					1.36	0.40	5	204
10	13.41	13.41	33.558	25.195	276.5	0.028	5.70	96.1					1.37	0.40	10	203
20 ISL	12.23	12.23	33.650	25.498	247.9	0.054	4.05	66.7					0.42	0.30	20	
21	12.10	12.10	33.661	25.531	244.8	0.056	3.87	63.5					0.32	0.29	21	202
30 ISL	12.06	12.06	33.673	25.548	243.4	0.078	3.94	64.6					0.29	0.35	30	
31	12.06	12.06	33.674	25.549	243.3	0.081	3.95	64.8					0.29	0.36	31	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 10.7 N	119 30.4 W	15/12/98	1056 UTC	130 m	340 17 kn			1019.0 mb	13.3 C	11.3 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	13.03	13.03	33.585	25.292	267.0	0.000	5.60	93.7					2.77	0.65	0	
2	13.03	13.03	33.585	25.292	267.1	0.005	5.60	93.7					2.77	0.65	2	211
10	12.95	12.95	33.591	25.312	265.3	0.027	5.41	90.4					2.60	0.65	10	210
20	12.47	12.47	33.621	25.429	254.4	0.053	4.20	69.5					0.55	0.32	20	209
28	12.15	12.15	33.645	25.510	247.0	0.073	3.81	62.6					0.38	0.26	28	208
30 ISL	12.09	12.09	33.649	25.524	245.7	0.078	3.75	61.6					0.34	0.24	30	
39	11.79	11.79	33.669	25.596	239.0	0.099	3.55	57.9					0.20	0.19	39	207
49	11.32	11.31	33.723	25.725	227.0	0.123	3.28	53.0					0.10	0.17	49	206
50 ISL	11.29	11.28	33.732	25.738	225.8	0.125	3.25	52.5					0.09	0.17	50	
59	10.95	10.94	33.812	25.861	214.3	0.145	2.95	47.3					0.05	0.12	59	205
67	10.50	10.49	33.853	25.972	203.8	0.162	2.77	44.0					0.03	0.10	67	204
75 ISL	10.13	10.12	33.911	26.081	193.6	0.177	2.55	40.2					0.03	0.08	75	
84	9.84	9.83	33.970	26.177	184.7	0.194	2.35	36.8					0.02	0.07	84	203
99	9.74	9.73	33.997	26.215	181.4	0.222	2.26	35.3					0.01	0.06	100	202
100 ISL	9.73	9.72	33.998	26.217	181.2	0.224	2.25	35.2					0.01	0.06	101	
125 ISL	9.43	9.42	34.023	26.286	175.1	0.268	2.11	32.8					0.01	0.07	126	
126	9.42	9.41	34.024	26.289	174.9	0.270	2.10	32.6					0.01	0.07	127	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 52.7 N	120 8.0 W	15/12/98	0342 UTC	100 m	350 18 kn			1021.5 mb	12.9 C	9.0 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	12.21	12.21	33.638	25.492	248.0	0.000	4.62	76.0					0.87	0.27	0	
2	12.21	12.21	33.638	25.492	248.0	0.005	4.62	76.0					0.87	0.27	2	210
10 ISL	12.19	12.19	33.639	25.497	247.7	0.025	4.55	74.8					0.84	0.27	10	
11	12.18	12.18	33.638	25.498	247.7	0.027	4.53	74.5					0.84	0.27	11	209
20	12.09	12.09	33.649	25.524	245.4	0.049	4.35	71.4					0.69	0.27	20	208
30	11.99	11.99	33.656	25.548	243.4	0.074	4.23	69.3					0.56	0.26	30	207
39	11.29	11.29	33.722	25.729	226.3	0.095	3.43	55.4					0.12	0.15	39	206
49	10.65	10.64	33.822	25.922	208.3	0.117	2.99	47.6					0.07	0.12	49	205
50 ISL	10.62	10.61	33.827	25.931	207.4	0.119	2.98	47.4					0.07	0.12	50	
60	10.44	10.43	33.847	25.978	203.1	0.139	2.90	46.0					0.05	0.10	60	204
71	10.37	10.36	33.858	25.999	201.4	0.162	2.83	44.8					0.05	0.10	71	203
75 ISL	10.32	10.31	33.866	26.014	200.1	0.170	2.80	44.3					0.05	0.10	75	
84	10.17	10.16	33.888	26.057	196.2	0.187	2.73	43.1					0.04	0.11	84	202
95	9.94	9.93	33.922	26.123	190.1	0.209	2.60	40.8					0.02	0.09	96	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 34.6 N	122 48.6 W	14/12/98	0324	UTC	4270 m	350	20 kn			1024.3 mb	15.5 C	13.4 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	16.09	16.09		33.334	24.447	347.4	0.000									0	
1		16.09	16.09		33.334	24.447	347.5	0.003									1	1
10		16.09	16.09		33.342	24.453	347.1	0.035									10	1
20		16.10	16.10		33.343	24.452	347.6	0.069									20	1
30		16.10	16.10		33.344	24.453	347.8	0.104									30	1
40		16.19	16.18		33.391	24.469	346.6	0.139									40	1
50		16.24	16.23		33.410	24.473	346.6	0.174									50	1
60		16.26	16.25		33.442	24.493	345.0	0.208									60	1
75		16.03	16.02		33.462	24.562	338.9	0.259									75	1
100		13.45	13.44		33.321	25.006	297.0	0.339									100	1
125		13.13	13.11		33.543	25.242	275.1	0.410									126	1
150		11.82	11.80		33.629	25.562	245.1	0.476									151	1
175		10.94	10.92		33.793	25.851	218.0	0.533									176	1
193		9.58	9.56		33.884	26.155	189.1	0.570	4.19	65.2							194	207
200	ISL	9.29	9.27		33.904	26.217	183.2	0.583	4.07	62.9							201	
229		8.64	8.62		33.947	26.354	170.5	0.634	3.55	54.1							230	206
250	ISL	8.33	8.30		33.983	26.430	163.6	0.669	3.38	51.2							251	
266		8.13	8.10		34.003	26.476	159.4	0.695	3.30	49.7							267	205
300	ISL	7.59	7.56		34.008	26.559	151.8	0.748	3.06	45.6							302	
315		7.35	7.32		34.005	26.591	148.9	0.771	2.93	43.4							317	204
375		6.51	6.48		34.016	26.714	137.5	0.857	2.21	32.1							377	203
400	ISL	6.17	6.13		34.020	26.761	133.1	0.890	1.92	27.6							402	
436		5.75	5.71		34.037	26.828	126.9	0.937	1.53	21.8							439	202
500	ISL	5.51	5.47		34.126	26.928	118.1	1.016	0.91	12.9							503	
521		5.43	5.39		34.155	26.960	115.1	1.040	0.71	10.1							524	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 14.7 N	123 29.5 W	13/12/98	2003	UTC	4158 m	280	10 kn	310 04 05	1	1023.6 mb	16.8 C	13.8 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	16.51	16.51		33.539	24.508	341.6	0.000	5.68	102.0					0.16	0.04	0	
2		16.51	16.51		33.539	24.508	341.7	0.007	5.68	102.0					0.16	0.04	2	220
10	ISL	16.50	16.50		33.540	24.512	341.6	0.034	5.69	102.1					0.16	0.04	10	
14		16.50	16.50		33.541	24.513	341.6	0.048	5.69	102.1					0.16	0.04	14	219
20	ISL	16.50	16.50		33.542	24.514	341.7	0.068	5.68	102.0					0.16	0.04	20	
29		16.50	16.50		33.542	24.514	342.0	0.099	5.67	101.8					0.17	0.05	29	218
30	ISL	16.50	16.50		33.542	24.514	342.0	0.103	5.67	101.8					0.17	0.05	30	
45		16.51	16.50		33.548	24.517	342.3	0.154	5.67	101.8					0.17	0.05	45	217
50	ISL	16.55	16.54		33.563	24.519	342.2	0.171	5.67	101.9					0.18	0.05	50	
60		16.65	16.64		33.596	24.522	342.3	0.205	5.67	102.1					0.20	0.05	60	216
75	ISL	16.70	16.69		33.616	24.526	342.4	0.257	5.63	101.5					0.20	0.06	75	
76		16.70	16.69		33.617	24.527	342.3	0.260	5.63	101.5					0.20	0.06	76	215
85		16.72	16.71		33.619	24.524	342.9	0.291	5.63	101.5					0.21	0.06	85	214
92		16.75	16.74		33.662	24.551	340.6	0.315	5.65	102.0					0.21	0.08	92	213
100	ISL	16.14	16.12		33.786	24.787	318.3	0.341	5.72	102.1					0.22	0.16	100	
103		15.79	15.77		33.820	24.892	308.4	0.350	5.73	101.6					0.22	0.18	103	212
114		14.37	14.35		33.676	25.091	289.5	0.383	5.58	96.0					0.15	0.15	114	211
124		13.73	13.71		33.609	25.172	281.9	0.412	5.44	92.4					0.11	0.12	125	210
125	ISL	13.69	13.67		33.606	25.178	281.4	0.415	5.43	92.1					0.11	0.12	126	
137		13.18	13.16		33.597	25.275	272.4	0.448	5.21	87.5					0.08	0.12	138	209
150	ISL	12.04	12.02		33.608	25.505	250.6	0.482	4.74	77.7					0.05	0.09	151	
164		10.76	10.74		33.657	25.776	224.7	0.515	4.22	67.3					0.03	0.05	165	208
195		9.61	9.59		33.817	26.097	194.6	0.580	3.77	58.7					0.01	0.02	196	207
200	ISL	9.48	9.46		33.844	26.140	190.6	0.590	3.71	57.6							201	
228		8.89	8.87		33.967	26.331	172.8	0.641	3.36	51.5							229	206
250	ISL	8.55	8.52		34.009	26.417	164.9	0.678	3.01	45.8							251	
267		8.34	8.31		34.025	26.462	160.9	0.706	2.74	41.5							268	205
300	ISL	7.97	7.94		34.058	26.543	153.6	0.757	2.37	35.6							302	
318		7.79	7.76		34.075	26.583	150.0	0.785	2.19	32.8							320	204
382		7.25	7.21		34.155	26.724	137.4	0.877	1.35	20.0							384	203
400	ISL	7.05	7.01		34.158	26.754	134.6	0.901	1.26	18.5							402	
431		6.72	6.68		34.158	26.799	130.5	0.942	1.16	16.9							434	202
500	ISL	6.33	6.28		34.201	26.885	123.1	1.030	0.77	11.1							503	
524		6.20	6.15		34.216	26.914	120.5	1.059	0.64	9.2							527	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.1 N	117 46.1 W	11/12/98	0024	UTC	64 m	340	10 kn	300 01 05	1	1027.1 mb	15.8 C	15.1 C		1/8	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	14.45	14.45		33.496	24.931	301.3	0.000	5.90	101.6					2.20	0.40	0	
2		14.45	14.45		33.496	24.931	301.4	0.006	5.90	101.6					2.20	0.40	2	208
4		14.46	14.46		33.494	24.928	301.8	0.012	5.90	101.7					2.04	0.43	4	207
10		13.48	13.48		33.522	25.153	280.5	0.030	5.11	86.3					1.65	0.39	10	206
20		12.89	12.89		33.550	25.293	267.5	0.057	4.98	83.1					1.23	0.40	20	205
30		12.45	12.45		33.588	25.408	256.7	0.083	4.04	66.8					0.34	0.23	30	204
39		11.80	11.80		33.664	25.590	239.6	0.105	3.65	59.6					0.12	0.14	39	203
50		11.35	11.34		33.729	25.724	227.1	0.131	3.26	52.7					0.05	0.11	50	202
58		11.09	11.08		33.782	25.813	218.9	0.149	3.04	48.9					0.03	0.10	58	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 25.1 N	117 54.3 W	11/12/98	0256 UTC	615 m	360 06 kn		0	1028.0 mb	14.5 C	12.0 C		0/8

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	14.49	14.49	33.482	24.912	303.1	0.000	5.94	102.4					2.97	0.50	0	
2		14.49	14.49	33.482	24.912	303.2	0.006	5.94	102.4					2.97	0.50	2	220
10		14.49	14.49	33.482	24.912	303.4	0.030	5.91	101.9					3.08	0.51	10	219
20	ISL	14.48	14.48	33.482	24.915	303.5	0.061	5.91	101.9					2.95	0.50	20	
21		14.48	14.48	33.482	24.915	303.5	0.064	5.91	101.9					2.94	0.50	21	218
30		13.98	13.98	33.502	25.035	292.3	0.091	5.65	96.4					2.24	0.53	30	217
39		13.37	13.36	33.524	25.177	279.0	0.116	4.77	80.4					0.67	0.40	39	216
50		12.39	12.38	33.591	25.422	255.9	0.146	4.19	69.2					0.23	0.28	50	215
60		11.78	11.77	33.633	25.571	242.0	0.171	3.96	64.6					0.13	0.20	60	214
70		11.38	11.37	33.666	25.670	232.7	0.194	3.77	61.0					0.08	0.13	70	213
75	ISL	11.10	11.09	33.693	25.742	226.0	0.206	3.68	59.2					0.06	0.10	75	
84		10.65	10.64	33.751	25.867	214.3	0.226	3.48	55.4					0.04	0.07	84	212
99		10.46	10.45	33.851	25.979	204.0	0.257	2.96	47.0					0.01	0.05	100	211
100	ISL	10.44	10.43	33.857	25.987	203.2	0.259	2.93	46.5					0.01	0.05	101	
120		10.10	10.09	33.971	26.134	189.6	0.298	2.50	39.4					0.01	0.04	121	210
125	ISL	10.00	9.99	34.003	26.176	185.7	0.308	2.38	37.4					0.01	0.04	126	
139		9.71	9.69	34.085	26.289	175.2	0.333	2.08	32.5					0.00	0.03	140	209
150	ISL	9.53	9.51	34.121	26.347	169.9	0.352	1.94	30.2					0.00	0.03	151	
169		9.27	9.25	34.158	26.419	163.5	0.384	1.80	27.9					0.01	0.03	170	208
199		9.01	8.99	34.197	26.491	157.1	0.432	1.61	24.8					0.01	0.03	200	207
200	ISL	9.00	8.98	34.198	26.494	156.9	0.433	1.60	24.6							201	
228		8.76	8.74	34.210	26.542	152.8	0.477	1.48	22.7							229	206
250	ISL	8.49	8.46	34.208	26.582	149.3	0.510	1.45	22.1							251	
268		8.23	8.20	34.203	26.618	146.1	0.536	1.43	21.6							270	205
300	ISL	7.68	7.65	34.191	26.690	139.5	0.582	1.31	19.6							302	
318		7.39	7.36	34.188	26.729	135.9	0.607	1.21	18.0							320	204
377		6.89	6.85	34.231	26.833	126.7	0.684	0.81	11.9							379	203
400	ISL	6.69	6.65	34.250	26.875	122.9	0.713	0.66	9.6							403	
436		6.38	6.34	34.280	26.940	117.0	0.756	0.46	6.7							439	202
500	ISL	5.93	5.89	34.321	27.031	108.9	0.828	0.31	4.4							503	
531		5.71	5.66	34.342	27.075	104.9	0.862	0.24	3.4							535	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 15.0 N	118 15.1 W	11/12/98	0738 UTC	350 m	020 07 kn		0	1028.6 mb	14.8 C	11.7 C		0/8

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	14.87	14.87	33.481	24.830	311.0	0.000	5.94	103.2					2.14	0.56	0	
2		14.87	14.87	33.481	24.830	311.0	0.006	5.94	103.2					2.14	0.56	2	218
10	ISL	14.88	14.88	33.479	24.827	311.6	0.031	5.92	102.9					2.09	0.55	10	
14		14.88	14.88	33.478	24.826	311.8	0.044	5.91	102.7					2.06	0.54	14	217
20	ISL	14.88	14.88	33.478	24.826	311.9	0.062	5.91	102.7					2.05	0.53	20	
30		14.87	14.87	33.478	24.829	312.0	0.093	5.91	102.7					2.04	0.50	30	216
45		14.18	14.17	33.473	24.972	298.8	0.139	5.35	91.6					1.52	0.44	45	215
50	ISL	13.26	13.25	33.475	25.162	280.8	0.154	4.84	81.3					0.88	0.39	50	
55		12.38	12.37	33.497	25.352	262.8	0.167	4.37	72.1					0.29	0.34	55	214
64		12.00	11.99	33.579	25.488	250.0	0.190	4.12	67.5					0.17	0.23	64	213
75		10.96	10.95	33.692	25.766	223.7	0.217	3.71	59.5					0.06	0.11	75	212
85		10.62	10.61	33.732	25.858	215.2	0.238	3.53	56.2					0.04	0.08	85	211
94		10.40	10.39	33.771	25.926	208.8	0.258	3.30	52.3					0.02	0.07	94	210
100	ISL	10.27	10.26	33.815	25.983	203.5	0.270	3.10	49.0					0.02	0.06	100	
110		10.09	10.08	33.884	26.068	195.7	0.290	2.81	44.2					0.01	0.04	111	209
124		9.94	9.93	33.920	26.121	190.9	0.317	2.71	42.5					0.01	0.04	125	208
125	ISL	9.93	9.92	33.926	26.128	190.3	0.319	2.69	42.2					0.01	0.04	126	
144		9.68	9.66	34.055	26.271	177.1	0.354	2.19	34.2					0.00	0.04	145	207
150	ISL	9.61	9.59	34.077	26.300	174.5	0.364	2.11	32.9					0.00	0.04	151	
169		9.42	9.40	34.119	26.364	168.7	0.397	1.94	30.1					0.00	0.03	170	206
199		9.10	9.08	34.171	26.457	160.4	0.446	1.71	26.4					0.00	0.03	200	205
200	ISL	9.08	9.06	34.172	26.461	160.1	0.448	1.70	26.2							201	
228		8.66	8.64	34.196	26.546	152.3	0.492	1.54	23.5							229	204
250	ISL	8.53	8.50	34.197	26.567	150.7	0.525	1.52	23.1							251	
268		8.40	8.37	34.192	26.584	149.4	0.552	1.50	22.8							270	203
300	ISL	7.68	7.65	34.193	26.692	139.3	0.598	1.27	19.0							302	
305		7.56	7.53	34.194	26.710	137.7	0.605	1.22	18.2							307	202
344		6.94	6.91	34.223	26.820	127.5	0.657	0.81	11.9							346	201

RV ROBERT GORDON SPROUL | CALCOFI CRUISE 9812 | STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 11.1 N	118 23.0 W	11/12/98	1035 UTC	1175 m	090 10 kn			1028.1 mb	15.2 C	11.9 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	14.92	14.92	33.477	24.816	312.3	0.000	5.90	102.6					1.73	0.50	0	
2		14.92	14.92	33.477	24.816	312.3	0.006	5.90	102.6					1.73	0.50	2	220
10		14.93	14.93	33.477	24.814	312.8	0.031	5.91	102.8					1.60	0.52	10	219
19		14.90	14.90	33.478	24.822	312.3	0.059	5.88	102.2					1.60	0.51	19	218
20	ISL	14.85	14.85	33.480	24.834	311.2	0.062	5.86	101.8					1.66	0.52	20	
30		14.30	14.30	33.498	24.965	298.9	0.093	5.59	96.0					2.13	0.63	30	217
40		14.10	14.09	33.503	25.011	294.8	0.123	5.45	93.2					1.65	0.53	40	216
49		13.51	13.50	33.504	25.134	283.4	0.149	5.02	84.8					0.73	0.41	49	215
50	ISL	13.37	13.36	33.504	25.162	280.7	0.152	4.95	83.4					0.66	0.39	50	
60		12.03	12.02	33.540	25.452	253.3	0.178	4.33	70.9					0.17	0.24	60	214
70		11.47	11.46	33.627	25.623	237.2	0.203	4.01	64.9					0.10	0.15	70	213
75	ISL	11.18	11.17	33.659	25.701	229.9	0.214	3.87	62.3					0.07	0.12	75	
85		10.66	10.65	33.715	25.837	217.1	0.237	3.61	57.5					0.04	0.09	85	212
100		10.23	10.22	33.805	25.982	203.6	0.268	3.18	50.2					0.02 A	0.05 A	100	211
120		9.78	9.77	33.896	26.130	190.0	0.308	2.84	44.4					0.01	0.04	121	210
125	ISL	9.69	9.68	33.917	26.161	187.1	0.317	2.77	43.2					0.01	0.04	126	
141		9.43	9.41	33.977	26.251	178.8	0.346	2.58	40.0					0.00	0.04	142	209
150	ISL	9.29	9.27	34.009	26.299	174.4	0.362	2.48	38.4					0.00	0.04	151	
171		9.02	9.00	34.070	26.390	166.1	0.398	2.26	34.8					0.00	0.03	172	208
200	ISL	8.82	8.80	34.115	26.457	160.3	0.445	1.99	30.5					0.00	0.04	201	
201		8.81	8.79	34.116	26.460	160.1	0.447	1.98	30.3					0.00	0.04	202	207
229		8.65	8.63	34.176	26.532	153.7	0.491	1.67	25.5							230	206
250	ISL	8.31	8.28	34.177	26.585	148.9	0.523	1.59	24.1							251	
269		7.97	7.94	34.169	26.630	144.8	0.551	1.55	23.3							271	205
300	ISL	7.59	7.56	34.177	26.692	139.3	0.595	1.33	19.8							302	
318		7.41	7.38	34.185	26.724	136.4	0.619	1.19	17.7							320	204
380		7.01	6.97	34.219	26.807	129.3	0.702	0.85	12.5							382	203
400	ISL	6.83	6.79	34.234	26.844	126.0	0.727	0.73	10.7							403	
436		6.52	6.48	34.262	26.908	120.2	0.772	0.54	7.9							439	202
500	ISL	6.14	6.10	34.299	26.987	113.3	0.846	0.36	5.2							503	
520		6.02	5.97	34.311	27.012	111.1	0.869	0.31	4.5							524	201

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

RV ROBERT GORDON SPROUL | CALCOFI CRUISE 9812 | STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 55.3 N	118 56.3 W	11/12/98	1639 UTC	1694 m	040 03 kn	290 02 07	1	1028.1 mb	14.8 C	13.2 C		1/8 CI

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	14.23	14.23	33.462	24.951	299.4	0.000	6.09	104.4					2.60	1.03	0	
2		14.23	14.23	33.462	24.951	299.4	0.006	6.09	104.4					2.60	1.03	2	220
8		14.19	14.19	33.462	24.960	298.8	0.024	6.07	104.0					2.61	1.10	8	219
10	ISL	14.17	14.17	33.462	24.964	298.5	0.030	6.06	103.8					2.66	1.09	10	
18		14.12	14.12	33.460	24.973	297.8	0.054	6.00	102.6					2.83	1.05	18	218
20	ISL	14.11	14.11	33.460	24.976	297.7	0.060	5.99	102.4					2.81	1.03	20	
29		14.09	14.09	33.458	24.978	297.7	0.087	5.96	101.9					2.70	0.95	29	217
30	ISL	14.09	14.09	33.458	24.979	297.7	0.089	5.95	101.7					2.67	0.95	30	
39		14.05	14.04	33.456	24.985	297.3	0.116	5.90	100.8					2.37	0.93	39	216
49		12.68	12.67	33.459	25.264	271.0	0.145	4.79	79.5					0.29	0.37	49	215
50	ISL	12.55	12.54	33.468	25.296	267.9	0.147	4.69	77.6					0.27	0.35	50	
60		11.55	11.54	33.595	25.584	240.7	0.173	3.87	62.8					0.10	0.23	60	214
69		11.24	11.23	33.700	25.722	227.8	0.194	3.40	54.8					0.07	0.16	69	213
75	ISL	11.02	11.01	33.726	25.782	222.2	0.207	3.34	53.6					0.06	0.13	75	
85		10.65	10.64	33.745	25.862	214.7	0.229	3.25	51.7					0.04	0.10	85	212
100		10.18	10.17	33.815	25.999	202.1	0.260	3.16	49.8					0.03	0.06	101	211
119		9.62	9.61	33.888	26.150	188.0	0.298	2.90	45.2					0.02	0.04	120	210
125	ISL	9.60	9.59	33.922	26.180	185.3	0.309	2.76	43.0					0.02	0.04	126	
138		9.56	9.54	33.981	26.233	180.5	0.333	2.48	38.6					0.01	0.04	139	209
150	ISL	9.41	9.39	34.013	26.282	176.0	0.354	2.37	36.8					0.00	0.04	151	
168		9.10	9.08	34.038	26.352	169.7	0.385	2.31	35.6					0.00	0.04	169	208
197		8.56	8.54	34.053	26.449	160.9	0.433	2.17	33.0					0.01	0.05	198	207
200	ISL	8.51	8.49	34.056	26.459	159.9	0.438	2.16	32.9							201	
228		8.10	8.08	34.092	26.550	151.7	0.481	1.99	30.0							229	206
250	ISL	7.96	7.93	34.130	26.600	147.2	0.514	1.76	26.4							251	
267		7.86	7.83	34.157	26.637	144.1	0.539	1.56	23.4							269	205
300	ISL	7.44	7.41	34.182	26.717	136.8	0.585	1.24	18.4							302	
317		7.22	7.19	34.191	26.755	133.3	0.608	1.09	16.1							319	204
376		6.79	6.76	34.233	26.848	125.1	0.685	0.73	10.7							378	203
400	ISL	6.61	6.57	34.245	26.882	122.2	0.714	0.65	9.5							403	
438		6.35	6.31	34.261	26.929	118.0	0.760	0.56	8.1							441	202
500	ISL	6.03	5.99	34.290	26.994	112.5	0.831	0.40	5.8							503	
539		5.83	5.78	34.309	27.034	109.0	0.875	0.30	4.3							543	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 39.1 N	119 28.9 W	11/12/98	2229 UTC	1315 m	330 13 kn	260 04 07	0	1026.0 mb	14.8 C	12.5 C		0/8

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	14.21	14.21	33.372	24.886	305.6	0.000	6.05	103.6					1.08	0.25	0	
1		14.21	14.21	33.372	24.886	305.6	0.003	6.05	103.6					1.08	0.25	1	220
10		14.19	14.19	33.369	24.888	305.7	0.031	6.05	103.6					1.12	0.26	10	219
20		13.83	13.83	33.395	24.983	296.9	0.061	5.93	100.8					1.23	0.45	20	218
30		13.55	13.55	33.409	25.052	290.7	0.090	5.91	99.9					1.01	0.46	30	217
40		13.08	13.07	33.414	25.150	281.6	0.119	5.43	90.9					0.29	0.25	40	216
50		12.81	12.80	33.397	25.191	278.0	0.147	5.26	87.5					0.20	0.33	50	215
60		11.99	11.98	33.409	25.357	262.3	0.174	4.76	77.8					0.10	0.15	60	214
68		11.55	11.54	33.460	25.479	250.9	0.194	4.56	73.9					0.09	0.14	68	213
75	ISL	11.17	11.16	33.511	25.588	240.7	0.211	4.29	69.0					0.07	0.14	75	
84		10.70	10.69	33.585	25.729	227.4	0.232	3.91	62.3					0.04	0.14	84	212
98		10.02	10.01	33.716	25.948	206.7	0.263	3.38	53.1					0.02	0.11	98	211
100	ISL	9.94	9.93	33.733	25.975	204.2	0.267	3.34	52.4					0.02	0.11	100	
119		9.33	9.32	33.860	26.175	185.5	0.304	3.11	48.1					0.01	0.07	120	210
125	ISL	9.19	9.18	33.885	26.217	181.6	0.315	3.08	47.5					0.01	0.07	126	
140		8.89	8.88	33.932	26.302	173.8	0.342	3.04	46.6					0.00	0.06	141	209
150	ISL	8.63	8.61	33.962	26.366	167.8	0.359	2.98	45.4					0.00	0.05	151	
169		8.20	8.18	34.006	26.466	158.6	0.390	2.86	43.2					0.00	0.04	170	208
200	ISL	8.02	8.00	34.026	26.509	155.0	0.438	2.67	40.2					0.00	0.03	201	
201		8.02	8.00	34.026	26.509	155.0	0.440	2.66	40.0					0.00	0.03	202	207
227		7.66	7.64	34.048	26.579	148.6	0.479	2.37	35.4							228	206
250	ISL	7.39	7.37	34.067	26.633	143.8	0.513	2.12	31.4							251	
268		7.21	7.18	34.082	26.670	140.5	0.539	1.93	28.5							270	205
300	ISL	6.96	6.93	34.111	26.728	135.4	0.583	1.55	22.8							302	
320		6.82	6.79	34.130	26.762	132.4	0.610	1.33	19.5							322	204
377		6.45	6.42	34.180	26.851	124.5	0.683	0.89	12.9							379	203
400	ISL	6.36	6.32	34.193	26.874	122.7	0.711	0.79	11.4							403	
435		6.22	6.18	34.214	26.909	119.8	0.754	0.67	9.7							438	202
500	ISL	5.84	5.80	34.282	27.011	110.6	0.828	0.39	5.6							503	
520		5.72	5.68	34.303	27.042	107.8	0.850	0.30	4.3							524	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 25.1 N	119 57.4 W	12/12/98	0404 UTC	909 m	330 11 kn			1026.3 mb	13.5 C	11.9 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	14.78	14.78	33.323	24.728	320.7	0.000	5.88	101.9					0.58	0.18	0	
1		14.78	14.78	33.323	24.728	320.7	0.003	5.88	101.9					0.58	0.18	1	220
9		14.78	14.78	33.323	24.728	321.0	0.029	5.91	102.4					0.59	0.17	9	219
10	ISL	14.78	14.78	33.323	24.728	321.0	0.032	5.91	102.4					0.59	0.17	10	
20		14.77	14.77	33.322	24.729	321.1	0.064	5.88	101.8					0.59	0.18	20	218
30		14.09	14.09	33.317	24.870	308.0	0.096	5.69	97.2					0.45	0.17	30	217
40		13.59	13.58	33.294	24.955	300.2	0.126	5.72	96.7					0.43	0.21	40	216
50		12.89	12.88	33.329	25.122	284.5	0.155	5.38	89.6					0.24	0.18	50	215
60		12.41	12.40	33.349	25.231	274.3	0.183	5.14	84.8					0.21	0.19	60	214
70		11.72	11.71	33.413	25.411	257.4	0.210	4.68	76.1					0.11	0.20	70	213
75	ISL	11.34	11.33	33.475	25.529	246.3	0.222	4.32	69.7					0.08	0.20	75	
83		10.79	10.78	33.578	25.708	229.4	0.241	3.78	60.3					0.04	0.21	83	212
99		10.20	10.19	33.670	25.882	213.1	0.277	3.49	55.0					0.02	0.17	99	211
100	ISL	10.16	10.15	33.675	25.893	212.1	0.279	3.48	54.8					0.02	0.17	100	
120		9.57	9.56	33.776	26.070	195.5	0.320	3.32	51.6					0.01	0.14	121	210
125	ISL	9.50	9.49	33.798	26.099	192.9	0.329	3.24	50.3					0.01	0.13	126	
137		9.36	9.34	33.846	26.160	187.4	0.352	3.07	47.5					0.01	0.09	138	209
150	ISL	9.18	9.16	33.883	26.218	182.1	0.376	3.11	48.0					0.01	0.06	151	
169		8.90	8.88	33.927	26.297	174.9	0.410	3.21	49.2					0.00	0.04	170	208
199		8.48	8.46	34.004	26.423	163.4	0.461	2.82	42.8					0.00	0.03	200	207
200	ISL	8.46	8.44	34.005	26.427	163.0	0.463	2.81	42.7							201	
229		7.98	7.96	34.031	26.519	154.5	0.509	2.64	39.7							230	206
250	ISL	7.68	7.66	34.038	26.569	150.0	0.541	2.57	38.3							251	
271		7.43	7.40	34.047	26.612	146.2	0.572	2.44	36.2							273	205
300	ISL	7.25	7.22	34.093	26.674	140.7	0.613	1.92	28.4							302	
315		7.17	7.14	34.116	26.703	138.1	0.634	1.63	24.0							317	204
376		6.55	6.52	34.129	26.798	129.7	0.716	1.22	17.7							378	203
400	ISL	6.45	6.41	34.154	26.831	126.8	0.747	1.04	15.1							403	
437		6.32	6.28	34.201	26.886	122.1	0.793	0.78	11.3							440	202
500	ISL	5.87	5.83	34.267	26.995	112.1	0.866	0.45	6.4							503	
520		5.73	5.69	34.289	27.030	109.0	0.889	0.35	5.0							524	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 5.1 N	120 38.3 W	12/12/98	1051 UTC	3787 m	320 14 kn			1024.9 mb	14.1 C	12.2 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	15.42	15.42	33.392	24.641	328.9	0.000	5.75	100.9					0.32	0.10	0	
2	15.42	15.42	33.392	24.641	329.0	0.007	5.75	100.9					0.32	0.10	2	220
10 ISL	15.42	15.42	33.393	24.642	329.1	0.033	5.75	100.9					0.32	0.11	10	
15	15.42	15.42	33.393	24.643	329.3	0.049	5.75	100.9					0.32	0.11	15	219
20 ISL	15.42	15.42	33.393	24.643	329.4	0.066	5.77	101.3					0.31	0.11	20	
29	15.42	15.42	33.393	24.643	329.7	0.095	5.79	101.6					0.31	0.10	29	218
30 ISL	15.42	15.42	33.393	24.643	329.7	0.099	5.79	101.6					0.31	0.10	30	
45	15.41	15.40	33.390	24.644	330.1	0.148	5.76	101.1					0.35	0.11	45	217
50 ISL	15.32	15.31	33.385	24.660	328.7	0.165	5.75	100.7					0.37	0.15	50	
55	15.21	15.20	33.376	24.677	327.2	0.181	5.73	100.1					0.38	0.19	55	216
64	14.98	14.97	33.350	24.707	324.6	0.210	5.71	99.3					0.32	0.16	64	215
73	14.34	14.33	33.320	24.821	313.9	0.239	5.55	95.3					0.21	0.15	73	214
75 ISL	14.19	14.18	33.325	24.856	310.6	0.245	5.50	94.1					0.21	0.17	75	
86	13.39	13.38	33.409	25.086	289.0	0.278	5.21	87.7					0.22	0.25	86	213
94	12.90	12.89	33.512	25.263	272.3	0.301	4.96	82.7					0.16	0.19	94	212
100 ISL	12.45	12.44	33.519	25.356	263.5	0.317	4.79	79.2					0.11	0.17	100	
107	11.94	11.93	33.510	25.446	255.0	0.335	4.60	75.2					0.07	0.15	107	211
124	11.16	11.14	33.620	25.676	233.5	0.377	4.23	68.0					0.05	0.08	125	210
125 ISL	11.11	11.09	33.626	25.689	232.2	0.379	4.21	67.6					0.05	0.08	126	
145	10.23	10.21	33.732	25.926	209.9	0.423	3.85	60.7					0.02	0.05	146	209
150 ISL	10.05	10.03	33.760	25.979	205.0	0.434	3.71	58.3					0.02	0.04	151	
169	9.50	9.48	33.861	26.149	189.1	0.471	3.19	49.6					0.01	0.02	170	208
198	9.09	9.07	33.980	26.309	174.4	0.524	2.81	43.3					0.00	0.02	199	207
200 ISL	9.07	9.05	33.989	26.319	173.4	0.527	2.77	42.6							201	
229	8.79	8.77	34.106	26.455	161.0	0.576	2.13	32.6							230	206
250 ISL	8.63	8.60	34.164	26.526	154.7	0.609	1.79	27.3							251	
268	8.48	8.45	34.198	26.576	150.2	0.636	1.57	23.9							269	205
300 ISL	8.07	8.04	34.220	26.656	143.0	0.683	1.29	19.4							302	
318	7.84	7.81	34.225	26.694	139.6	0.709	1.17	17.5							320	204
379	7.36	7.32	34.269	26.798	130.4	0.791	0.73	10.8							381	203
400 ISL	7.19	7.15	34.277	26.828	127.7	0.818	0.64	9.5							402	
440	6.88	6.84	34.289	26.881	123.1	0.868	0.52	7.6							443	202
500 ISL	6.45	6.40	34.323	26.966	115.6	0.940	0.35	5.1							503	
526	6.27	6.22	34.338	27.001	112.5	0.970	0.27	3.9							530	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 45.1 N	121 19.1 W	12/12/98	1803 UTC	3593 m	340 11 kn	340 05 06	1	1025.4 mb	15.8 C	13.8 C		1/8 CU

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	15.59	15.59	33.394	24.605	332.4	0.000	5.78	101.8					0.20	0.05	0	
2	15.59	15.59	33.394	24.605	332.4	0.007	5.78	101.8					0.20	0.05	2	220
10 ISL	15.58	15.58	33.394	24.608	332.4	0.033	5.77	101.6					0.21	0.06	10	
14	15.57	15.57	33.394	24.610	332.3	0.047	5.77	101.6					0.21	0.06	14	219
20 ISL	15.57	15.57	33.394	24.610	332.5	0.066	5.77	101.6					0.20	0.07	20	
30	15.57	15.57	33.394	24.611	332.8	0.100	5.77	101.6					0.20	0.08	30	218
44	15.57	15.56	33.394	24.611	333.2	0.146	5.76	101.4					0.24	0.08	44	217
50 ISL	15.57	15.56	33.394	24.611	333.3	0.166	5.79	101.9					0.21	0.09	50	
53	15.57	15.56	33.394	24.611	333.4	0.176	5.80	102.1					0.19	0.09	53	216
64	15.57	15.56	33.393	24.611	333.8	0.213	5.75	101.2					0.14	0.07	64	215
74	15.56	15.55	33.393	24.614	333.9	0.246	5.75	101.2					0.43	0.31	74	214
75 ISL	15.55	15.54	33.392	24.615	333.8	0.250	5.75	101.2					0.42	0.30	75	
84	15.32	15.31	33.378	24.655	330.2	0.280	5.70	99.8					0.26	0.17	84	213
94	14.71	14.70	33.378	24.788	317.8	0.312	5.63	97.4					0.24	0.18	94	212
100 ISL	14.20	14.19	33.401	24.914	305.9	0.331	5.48	93.8					0.16	0.14	100	
109	13.35	13.33	33.452	25.128	285.6	0.357	5.19	87.4					0.05	0.07	109	211
124	11.99	11.97	33.543	25.463	253.9	0.398	4.65	76.1					0.06	0.09	125	210
125 ISL	11.91	11.89	33.549	25.483	252.0	0.400	4.61	75.3					0.06	0.09	126	
145	10.65	10.63	33.672	25.807	221.4	0.448	3.94	62.7					0.02	0.06	146	209
150 ISL	10.44	10.42	33.696	25.862	216.2	0.459	3.86	61.2					0.01	0.06	151	
169	9.83	9.81	33.785	26.035	200.0	0.498	3.63	56.8					0.00	0.04	170	208
198	9.00	8.98	33.951	26.300	175.1	0.553	2.98	45.8					0.00	0.02	199	207
200 ISL	8.95	8.93	33.956	26.312	174.0	0.556	2.98	45.7							201	
229	8.28	8.26	34.000	26.450	161.2	0.605	2.92	44.2							230	206
250 ISL	7.93	7.90	34.022	26.520	154.8	0.638	2.75	41.3							251	
269	7.67	7.64	34.038	26.571	150.2	0.667	2.54	37.9							270	205
300 ISL	7.32	7.29	34.069	26.645	143.5	0.712	2.11	31.2							302	
316	7.17	7.14	34.085	26.679	140.4	0.735	1.87	27.6							318	204
378	6.66	6.63	34.156	26.805	129.1	0.819	1.09	15.9							380	203
400 ISL	6.48	6.44	34.174	26.843	125.7	0.847	0.91	13.2							402	
439	6.20	6.16	34.206	26.905	120.2	0.895	0.67	9.7							442	202
500 ISL	5.97	5.93	34.278	26.992	112.6	0.966	0.45	6.5							503	
521	5.89	5.84	34.303	27.022	110.0	0.989	0.37	5.3							524	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 25.1 N	121 59.4 W	13/12/98	0106 UTC	3858 m	340 12 kn	340 07 06	1	1023.0 mb	15.5 C	13.9 C		4/8	CU

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	15.74	15.74	33.373	24.556	337.1	0.000	5.77	101.9					0.31	0.09	0	
2	15.74	15.74	33.373	24.556	337.1	0.007	5.77	101.9					0.31	0.09	2	220
10 ISL	15.75	15.75	33.372	24.553	337.6	0.034	5.76	101.8					0.31	0.10	10	
15	15.75	15.75	33.372	24.553	337.8	0.051	5.76	101.8					0.31	0.10	15	219
20 ISL	15.73	15.73	33.372	24.558	337.5	0.068	5.76	101.7					0.31	0.10	20	
30	15.69	15.69	33.373	24.568	336.9	0.101	5.76	101.6					0.32	0.10	30	218
44	15.68	15.67	33.373	24.571	337.0	0.148	5.85 U	103.2 U					0.33	0.10	44	217
50 ISL	15.68	15.67	33.373	24.571	337.2	0.169	5.75	101.4					0.33	0.11	50	
59	15.68	15.67	33.373	24.571	337.5	0.199	5.74	101.3					0.32	0.13	59	216
74	15.38	15.37	33.348	24.619	333.4	0.249	5.73	100.5					0.32	0.10	74	215
75 ISL	15.26	15.25	33.346	24.644	331.0	0.253	5.73	100.2					0.32	0.10	75	
84	14.16	14.15	33.342	24.876	309.0	0.281	5.69	97.3					0.31	0.10	84	214
95	13.56	13.55	33.375	25.025	295.0	0.315	5.53	93.4					0.26	0.13	95	213
100 ISL	13.26	13.25	33.385	25.094	288.6	0.329	5.43	91.2					0.23	0.15	100	
104	12.97	12.96	33.401	25.164	282.0	0.341	5.31	88.6					0.20	0.16	104	212
114	11.92	11.91	33.526	25.463	253.6	0.367	4.75	77.6					0.14	0.17	114	211
123	11.29	11.27	33.622	25.654	235.6	0.389	4.57	73.7					0.09	0.12	124	210
125 ISL	11.15	11.13	33.639	25.692	231.9	0.394	4.52	72.7					0.08	0.11	126	
139	10.31	10.29	33.740	25.919	210.6	0.425	4.15	65.6					0.04	0.07	140	209
150 ISL	9.90	9.88	33.790	26.027	200.4	0.448	3.87	60.6					0.02	0.05	151	
165	9.52	9.50	33.844	26.133	190.6	0.477	3.47	53.9					0.01	0.04	166	208
192	9.01	8.99	33.977	26.319	173.3	0.526	2.70	41.5					0.00	0.03	193	207
200 ISL	8.83	8.81	33.997	26.363	169.2	0.540	2.69	41.2							201	
230	8.17	8.15	34.033	26.493	157.2	0.589	2.63	39.7							231	206
250 ISL	7.76	7.74	34.032	26.553	151.6	0.620	2.56	38.3							251	
267	7.47	7.44	34.032	26.594	147.8	0.645	2.45	36.4							268	205
300 ISL	7.22	7.19	34.090	26.676	140.5	0.693	1.90	28.1							302	
317	7.14	7.11	34.122	26.712	137.3	0.716	1.60	23.6							319	204
376	6.58	6.55	34.137	26.800	129.4	0.795	1.15	16.7							378	203
400 ISL	6.45	6.41	34.156	26.833	126.6	0.826	0.99	14.4							402	
438	6.27	6.23	34.189	26.883	122.3	0.873	0.77	11.1							441	202
500 ISL	5.83	5.79	34.234	26.974	114.1	0.946	0.51	7.3							503	
519	5.69	5.65	34.248	27.003	111.5	0.968	0.43	6.1							522	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9812 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 5.1 N	122 39.7 W	13/12/98	0810 UTC	4010 m	320 13 kn			1023.3 mb	15.2 C	13.8 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	15.33	15.33	33.307	24.596	333.3	0.000	5.80	101.6					0.26	0.08	0	
2	15.33	15.33	33.307	24.596	333.3	0.007	5.80	101.6					0.26	0.08	2	220
10 ISL	15.34	15.34	33.309	24.595	333.6	0.033	5.80	101.6					0.27	0.09	10	
14	15.35	15.35	33.310	24.594	333.9	0.047	5.80	101.6					0.27	0.09	14	219
20 ISL	15.35	15.35	33.308	24.593	334.2	0.067	5.80	101.6					0.27	0.09	20	
30	15.35	15.35	33.305	24.591	334.7	0.100	5.79	101.4					0.28	0.08	30	218
46	15.34	15.33	33.303	24.592	335.0	0.154	5.79	101.4					0.29	0.10	46	217
50 ISL	15.24	15.23	33.302	24.613	333.1	0.167	5.78	101.0					0.33	0.12	50	
55	15.11	15.10	33.301	24.641	330.6	0.184	5.76	100.4					0.37	0.16	55	216
65	13.75	13.74	33.312	24.937	302.6	0.215	5.62	95.3					0.32	0.33	65	215
75	13.40	13.39	33.363	25.048	292.3	0.245	5.52	93.0					0.23	0.22	75	214
85	13.14	13.13	33.415	25.140	283.7	0.274	5.41	90.6					0.18	0.19	85	213
94	12.33	12.32	33.460	25.333	265.5	0.299	5.04	83.0					0.10	0.13	94	212
100 ISL	11.74	11.73	33.488	25.466	252.9	0.314	4.76	77.5					0.08	0.11	100	
110	10.90	10.89	33.540	25.659	234.6	0.339	4.36	69.7					0.06	0.08	110	211
123	10.39	10.38	33.615	25.807	220.8	0.368	4.11	65.0					0.02	0.04	124	210
125 ISL	10.32	10.31	33.627	25.828	218.8	0.373	4.07	64.3					0.02	0.04	126	
145	9.69	9.67	33.742	26.025	200.4	0.414	3.78	58.9					0.01	0.03	146	209
150 ISL	9.56	9.54	33.771	26.069	196.3	0.424	3.73	58.0					0.01	0.03	151	
170	9.10	9.08	33.874	26.224	181.9	0.462	3.57	55.0					0.00	0.02	171	208
199	8.67	8.65	33.957	26.357	169.7	0.513	3.39	51.7					0.00	0.02	200	207
200 ISL	8.65	8.63	33.959	26.361	169.3	0.515	3.38	51.5							201	
228	8.14	8.12	34.009	26.478	158.5	0.561	2.97	44.8							229	206
250 ISL	7.81	7.79	34.025	26.540	152.9	0.595	2.75	41.2							251	
269	7.54	7.51	34.031	26.584	148.9	0.624	2.58	38.4							270	205
300 ISL	7.09	7.06	34.041	26.655	142.4	0.669	2.23	32.8							302	
318	6.85	6.82	34.047	26.693	138.9	0.694	2.01	29.4							320	204
378	6.20	6.17	34.086	26.809	128.3	0.774	1.31	18.9							380	203
400 ISL	6.01	5.98	34.104	26.848	124.8	0.802	1.11	15.9							402	
439	5.71	5.67	34.137	26.911	119.0	0.850	0.82	11.7							442	202
500 ISL	5.37	5.33	34.188	26.993	111.7	0.920	0.55	7.8							503	
517	5.28	5.24	34.202	27.015	109.8	0.939	0.47	6.6							520	201

CalCOFI Cruise 9812

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)
83	40.6	34 13.7	119 24.9	12/15	0543	0546	73	23	41	41
83	42	34 10.6	119 30.4	12/15	0334	0349	293	130	103	103
83	51	33 52.9	120 08.8	12/14	2025	2034	199	78	30	30
83	100	32 15.3	123 29.9	12/13	1311	1331	434	207	12	12
90	28	33 29.1	117 46.2	12/10	1707	1713	131	56	107	53
90	30	33 25.0	117 54.4	12/10	2010	2030	404	205	109	40
90	35	33 14.8	118 15.2	12/11	0037	0058	437	204	110	78
90	37	33 11.0	118 23.2	12/11	0342	0403	463	191	469	69
90	45	32 55.6	118 55.8	12/11	0939	1001	450	200	56	56
90	53	32 39.1	119 29.3	12/11	1539	1559	409	210	47	47
90	60	32 25.3	119 57.3	12/11	2109	2129	405	210	109	101
90	70	32 05.1	120 38.5	12/12	0410	0432	454	217	35	35
90	80	31 45.2	121 19.3	12/12	1107	1130	473	213	15	15
90	90	31 25.7	121 59.6	12/12	1819	1840	442	206	29	29
90	100	31 05.4	122 40.1	12/13	0128	0153	516	200	83	83

FIGURES

Avifauna Observations

CalCOFI Cruise 9807

CalCOFI Cruise 9809

CalCOFI Cruise 9810

4a. Western Gull distribution.

4b. Black-vented Shearwater distribution.

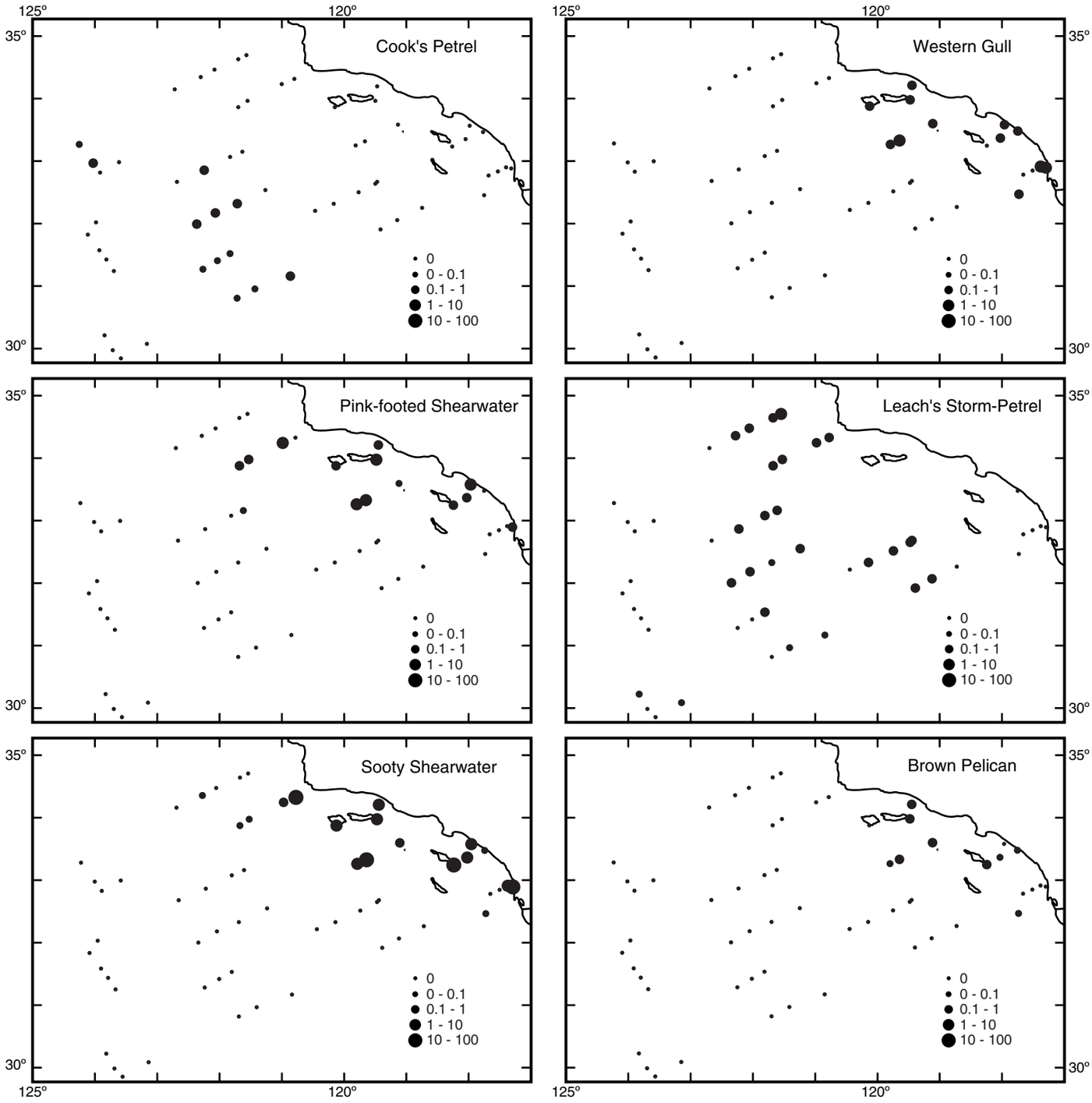
4c. Heermann's Gull distribution.

4d. Sooty Shearwater distribution.

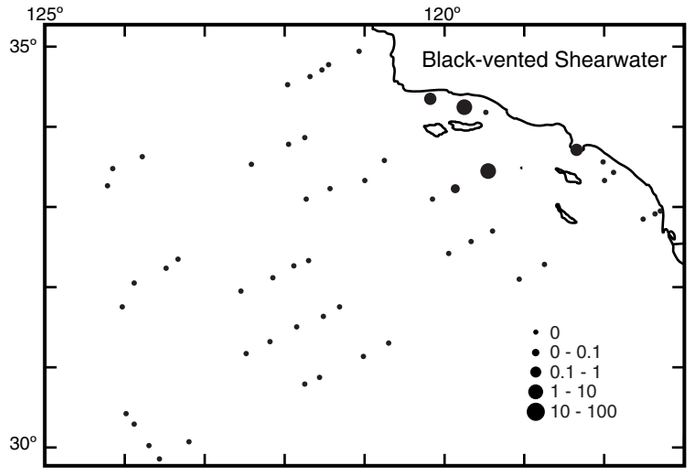
4e. California Gull distribution.

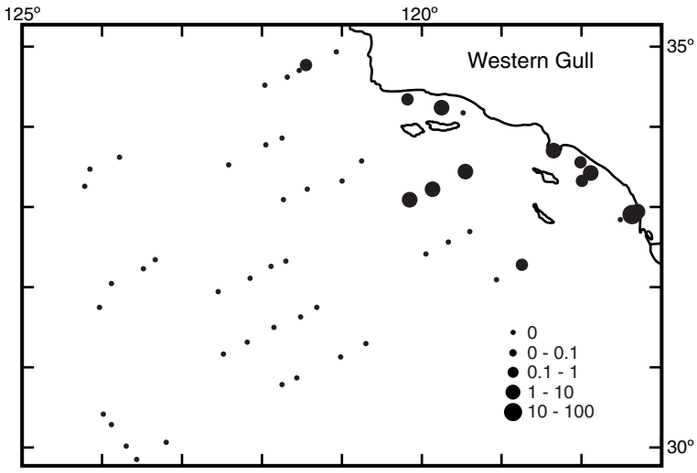
4f. Red and Red-necked Phalarope distribution.

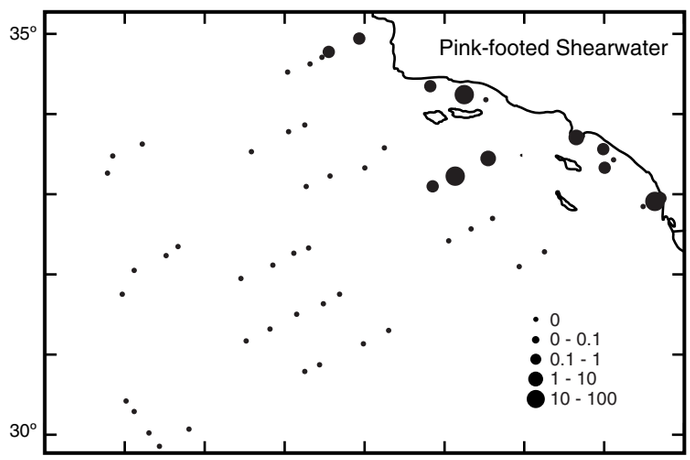
CalCOFI Cruise 9807

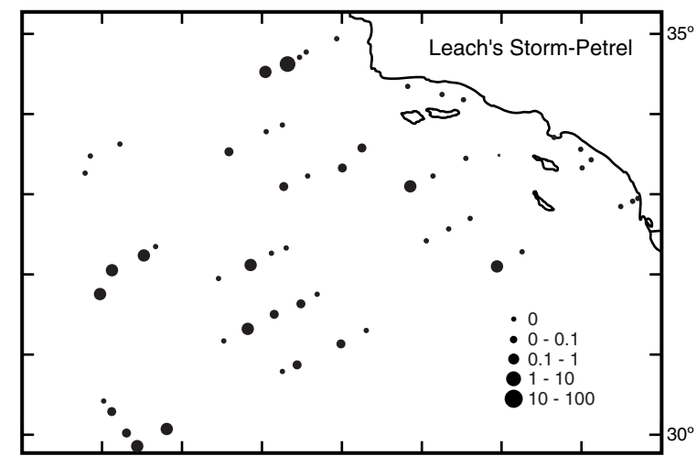


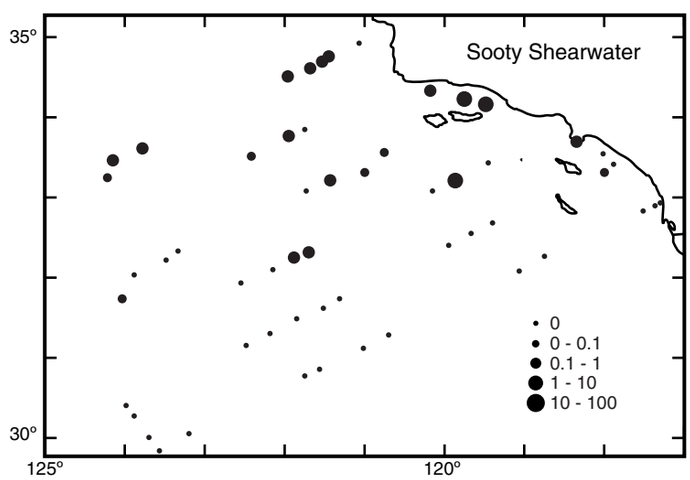
CalCOFI Cruise 9809

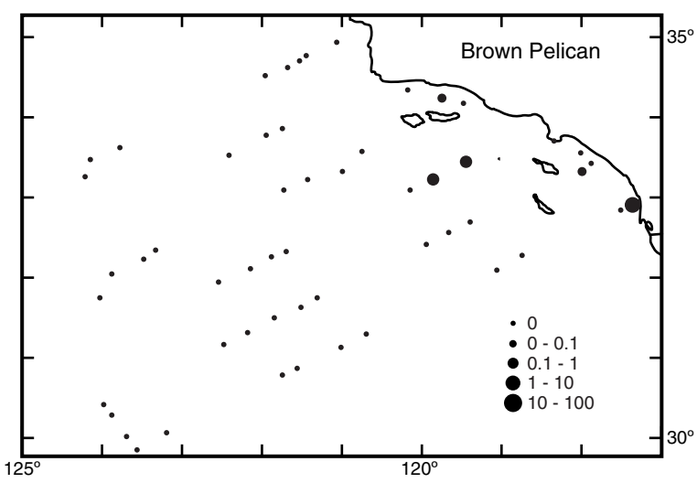




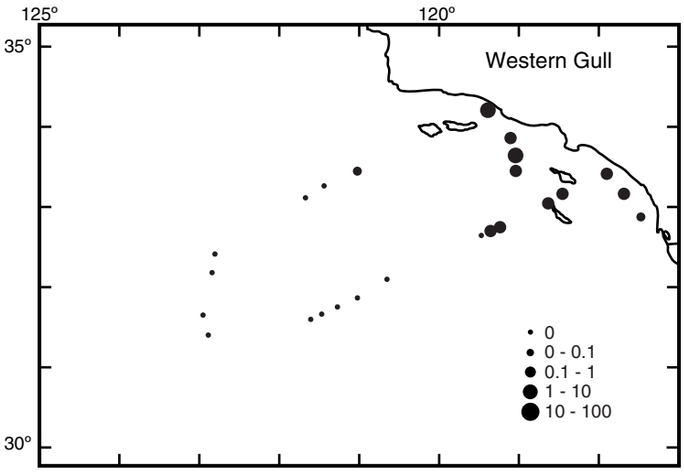


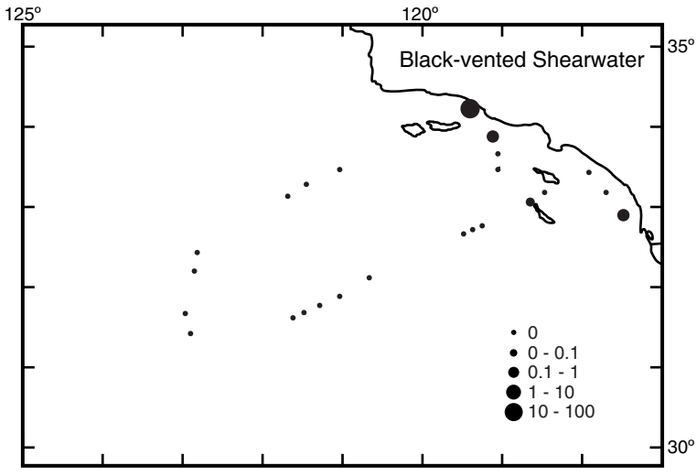


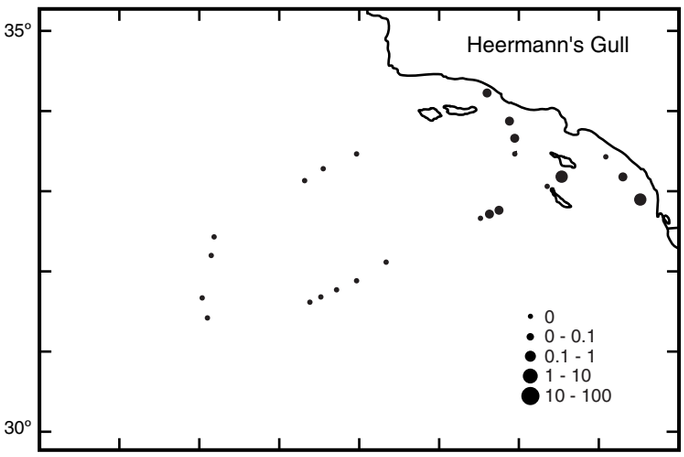


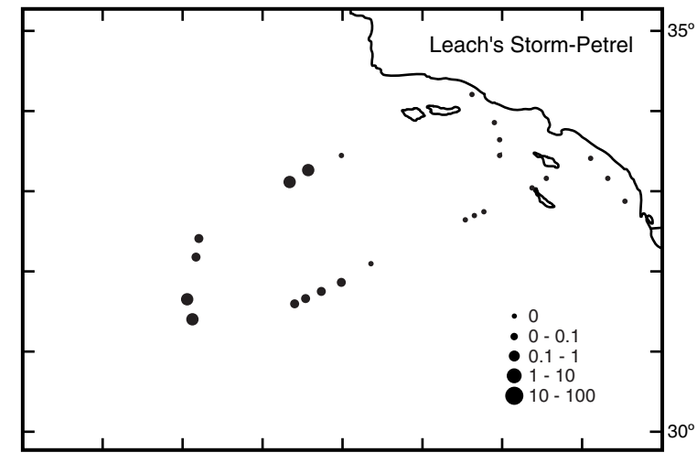


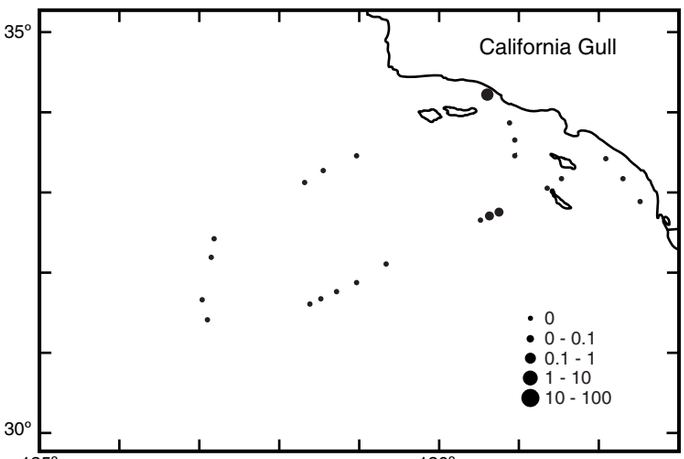
CalCOFI Cruise 9810

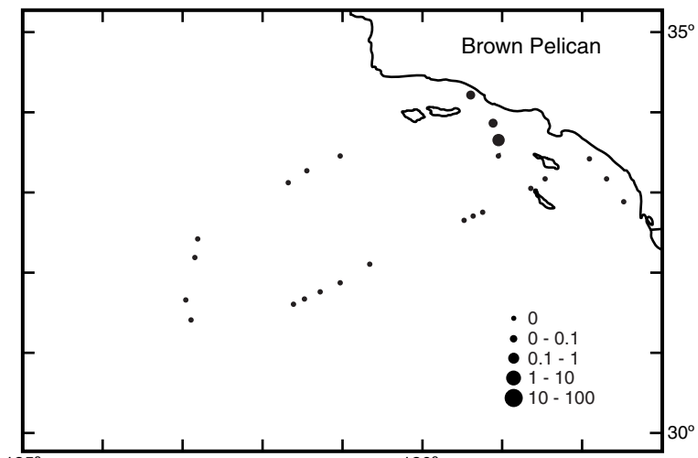












CalCOFI Cruise 9811