UNIVERSITY OF CALIFORNIA, SAN DIEGO

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093-0227

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 9802
23 January – 14 February 1998

CalCOFI Cruise 9803
11 – 17 March 1998

CalCOFI Cruise 9804
2 – 23 April 1998

CalCOFI Cruise 9805
16 – 22 May 1998

CalCOFI Cruise 9806
17 – 23 June 1998

SIO Reference 99-9
14 July 1999

Approved for distribution:

_____
Charles F. Kennel, Director

CONTENTS

INTRODUCTION

The data in this report were collected during cruises 9802*, 9803, 9804, 9805 and 9806 of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the NOAA ship RV *David Starr Jordan* 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 9802 and 9804 were extended north of the normal cruise pattern to include CalCOFI lines 73, 70, and 67. The three lines were added to improve our estimate of the standing biomass of Pacific sardine (Sardinops sagax). On cruise 9802 only underway measurements were made on lines 73, 70 and 67. On 9804 the full suite of CalCOFI work was completed on the three additional lines. Cruises 9803, 9805, and 9806 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 9802 and 9804 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. On cruises 9802 and 9803 IAPSO batch P127 was used for this comparison. On cruises 9804, 9805, and 9806 batch P132 was used. 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 only one determination per sample was obtained, or 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).

On cruises 9802 and 9804 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).

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

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 9802 and 9804 primary productivity samples were taken each day shortly before local apparent noon (LAN). Primary productivity samples were not collected on cruises 9803, 9805 and 9806. 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 9802 and 9804 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

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 9802 and 9804. 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*. Acoustic Doppler Current Profiler data were recorded continuously along the ship's cruise track.

3) *Bio-optics.* On cruises 9802 and 9804 apparent and inherent optical properties of the top 200 meters of the water column were measured daily with a bio-optical profiling package. Daily on deck measurements of polarized sky radiances and above-water ocean surface reflectance were made. Bio-optical profiles from 0 to 50 meters were also completed in coordination with SeaWiFS satellite orbital overpass times. Water samples obtained from the CTD/rosette cast were analyzed for determination of particulate carbon and nitrogen, absorption by particulate and soluble material, and absorption by detrital material. HPLC determination of phytoplankton pigments were done on cruise 9804. Samples were collected for cyanobacteria counts, and determination of phycoerythrin on cruise 9802.

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 and Forel water color scales are also reported for most daylight stations on cruises 9802 and 9804. They were not recorded on cruises 9803, 9805 and 9806.

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.

LITERATURE CITED

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

Atlas, E. L., J. C. Callaway, R. D. Tomlinson, L. I. Gordon, L. Barstow and P. K. Park, 1971. *A Practical Manual for Use of the Technicon™ AutoAnalyzer™ in Sea Water Nutrient Analysis*; Revised. Oregon State University Technical Report 215, Reference No. 71-22.

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

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

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

Holm-Hansen, O., C. J. Lorenzen, R. W. Holmes and J. D. H. Strickland, 1965. Fluorometric determination of chlorophyll. *J. Cons. perm. int. Explor. Mer, 30*: 3-15.

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

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

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

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

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

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

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

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

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

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

Weiss, R. F., 1970. The solubility of nitrogen, oxygen and argon in water and seawater. *Deep-Sea Res., 17:* 721-735.

Yentsch, C. S. and D. W. Menzel, 1963. A method for the determination of phytoplankton, chlorophyll and phaeophytin by fluorescence. *Deep-Sea Res., 10:* 221-231.

FIGURES

Cruise 9802

1. CalCOFI Cruise 9802, 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 9802

23 January - 14 February 1998

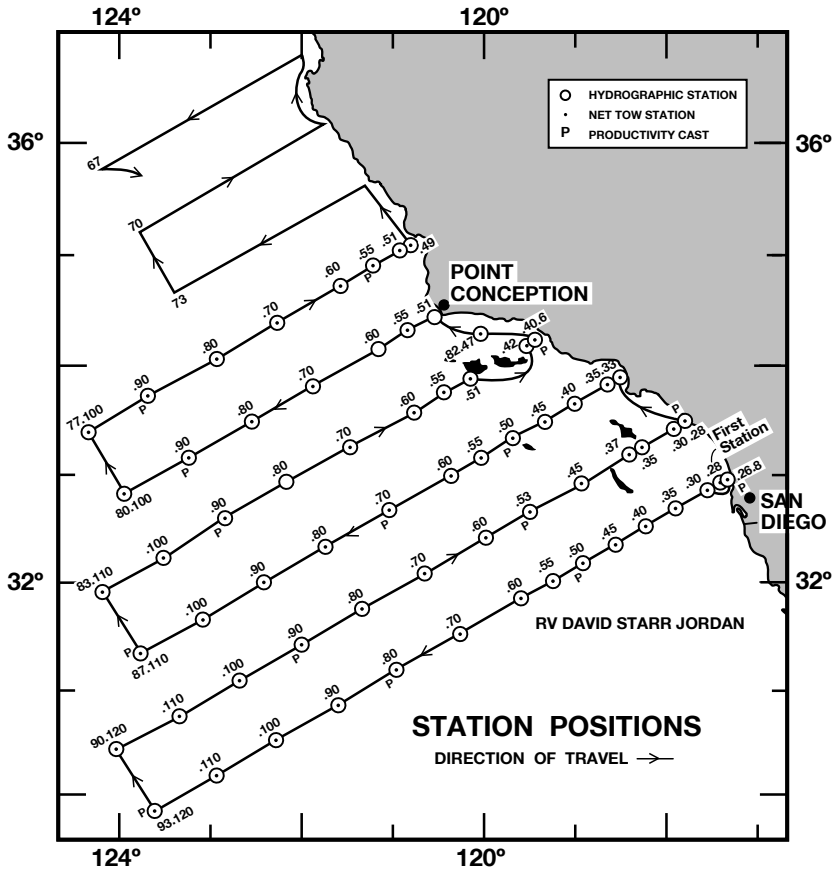


FIGURE 1

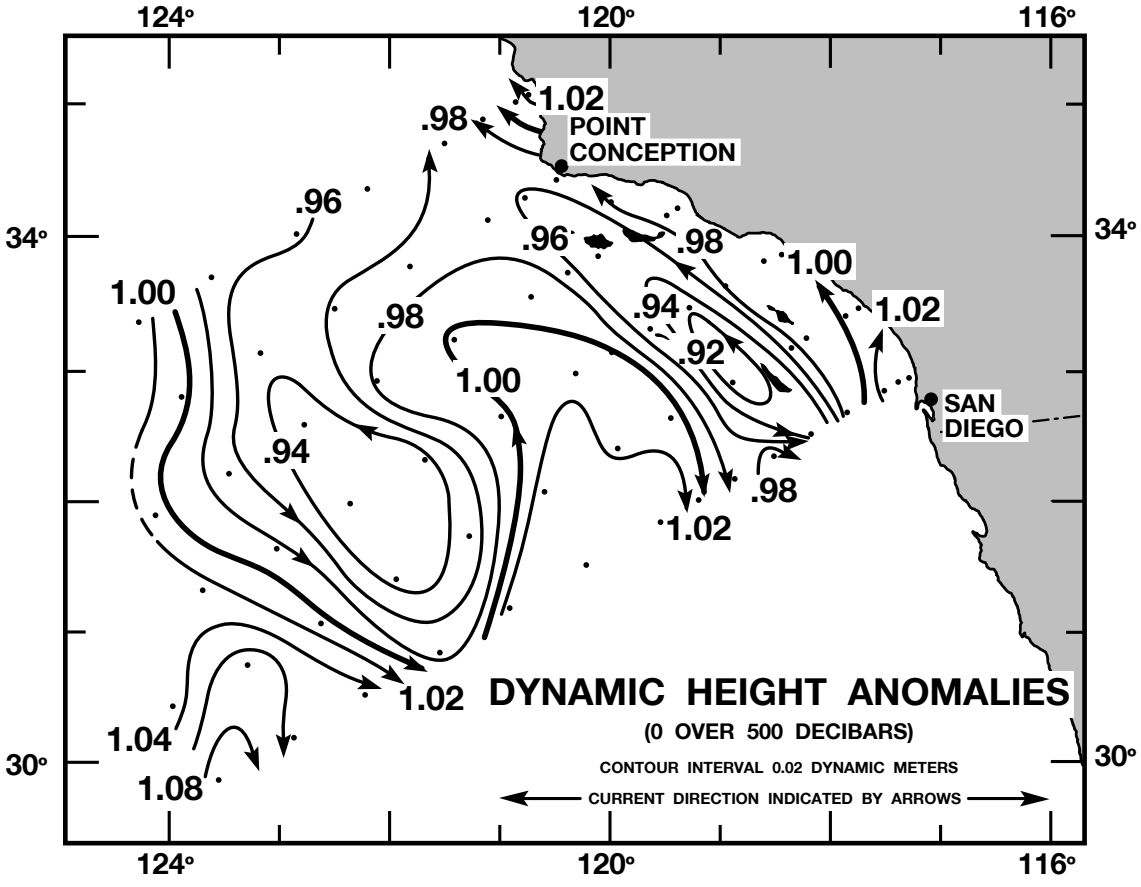


FIGURE 2

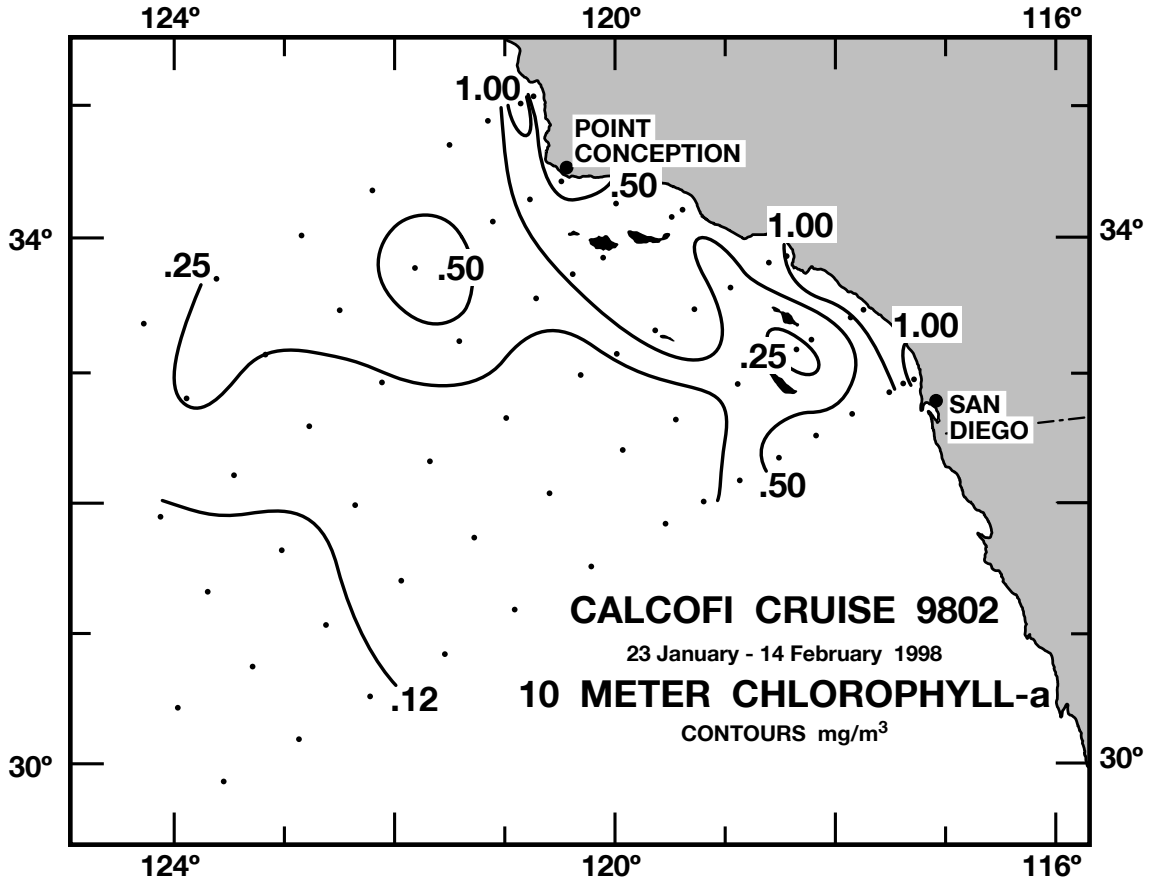


FIGURE 3A

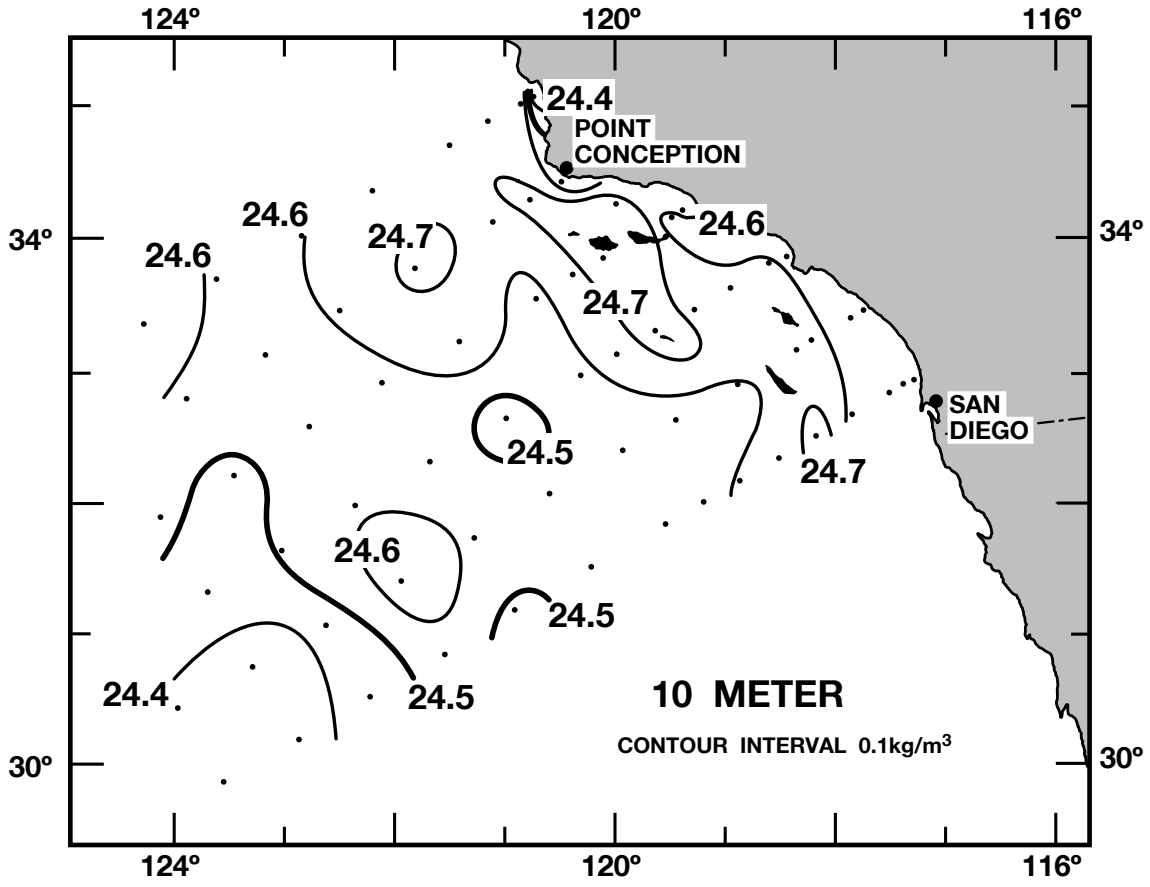


FIGURE 3B

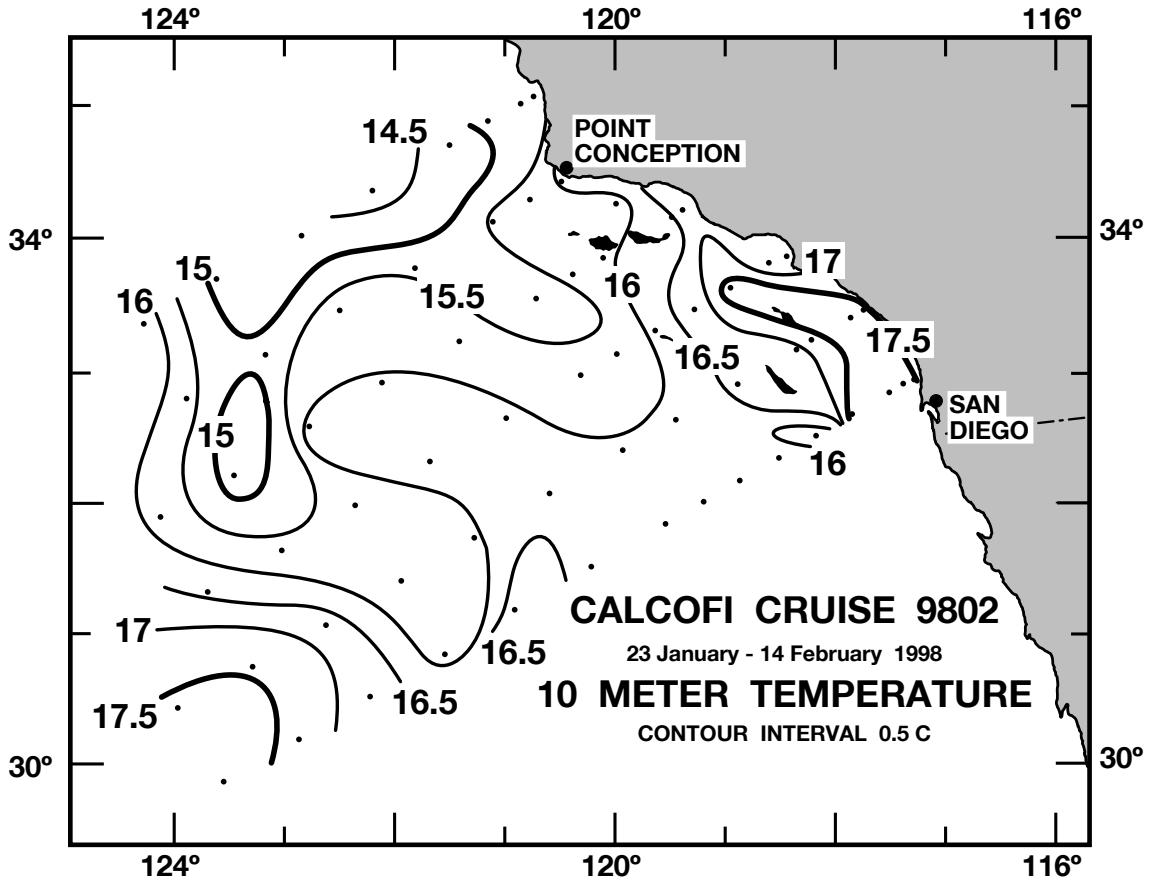


FIGURE 3C

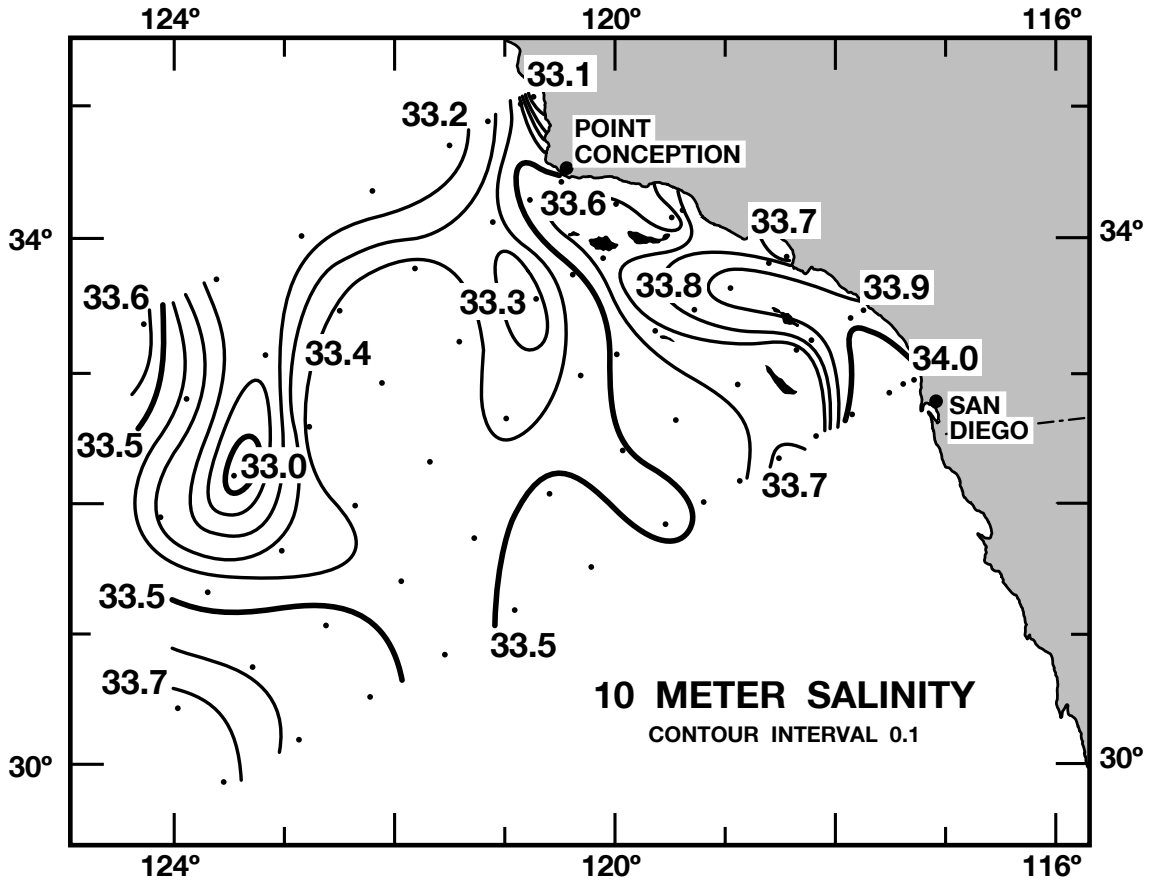


FIGURE 3D

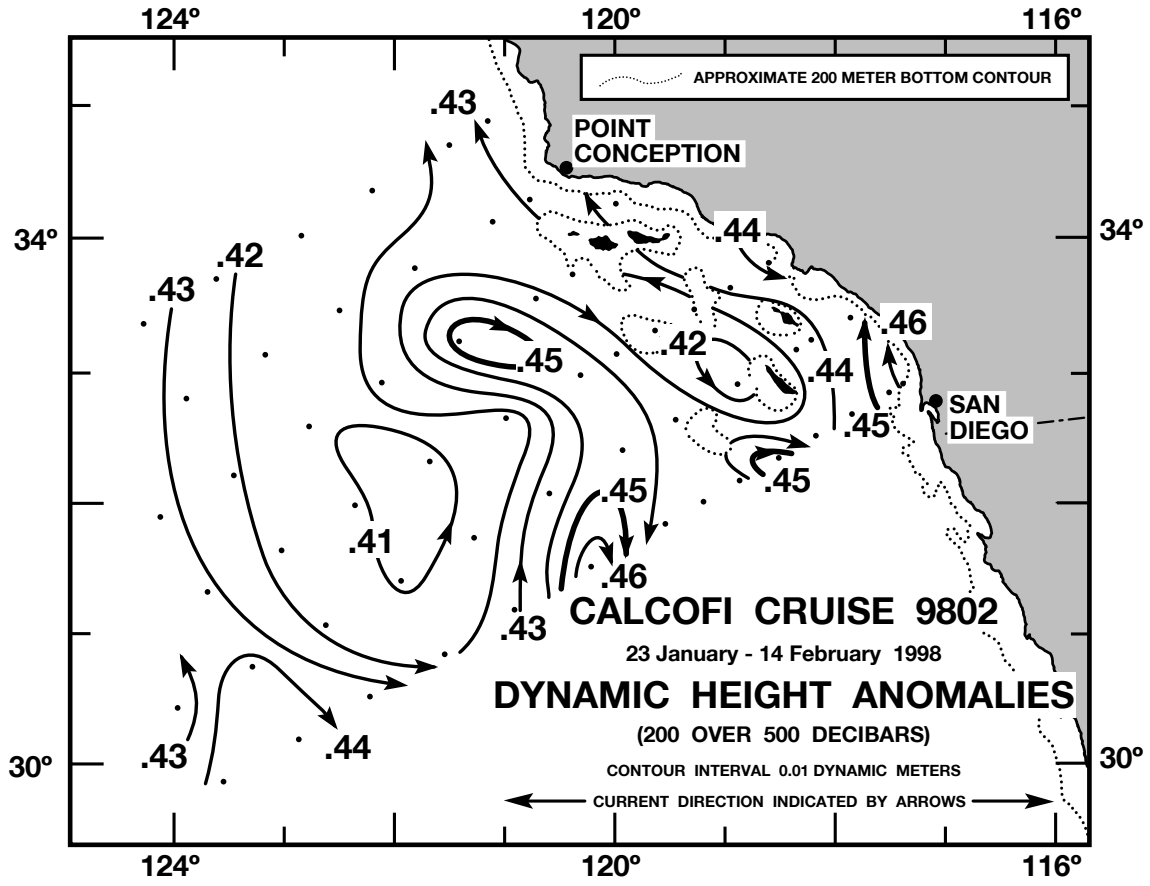


FIGURE 4A

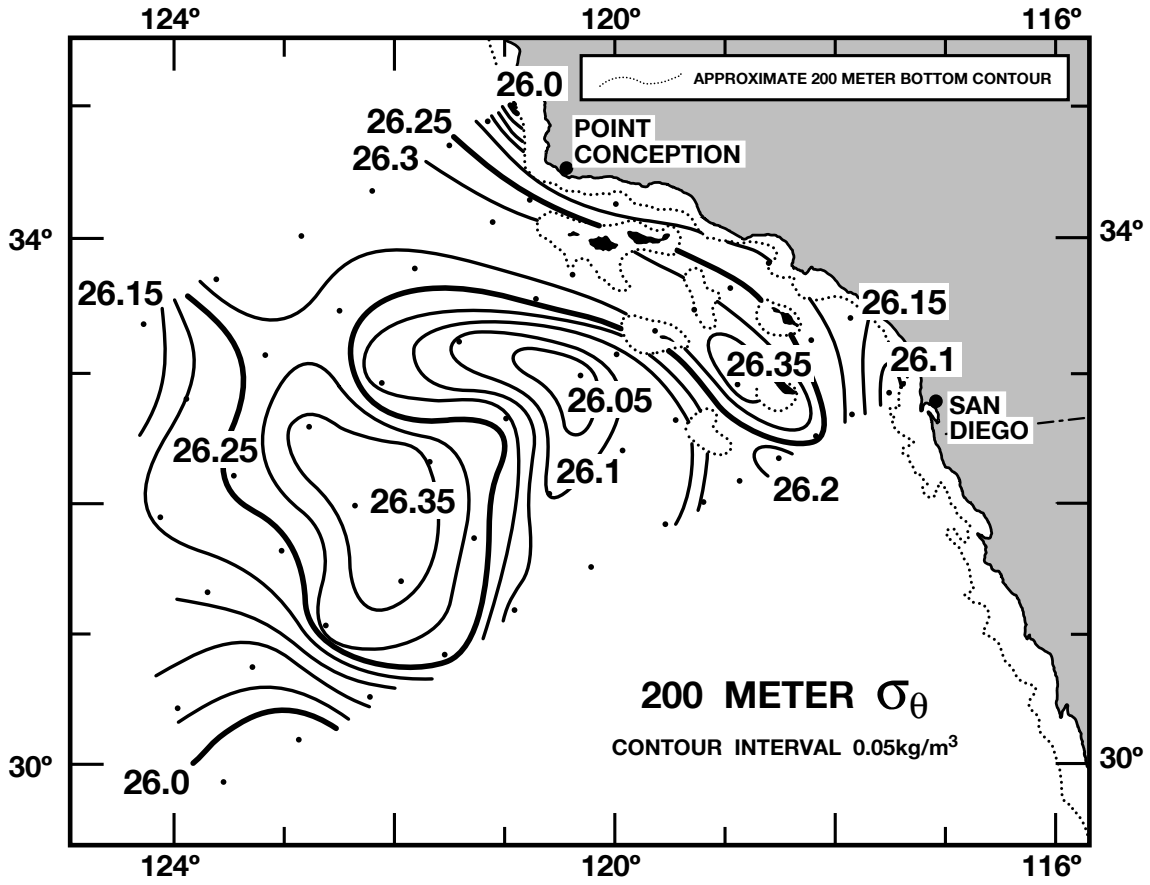


FIGURE 4B

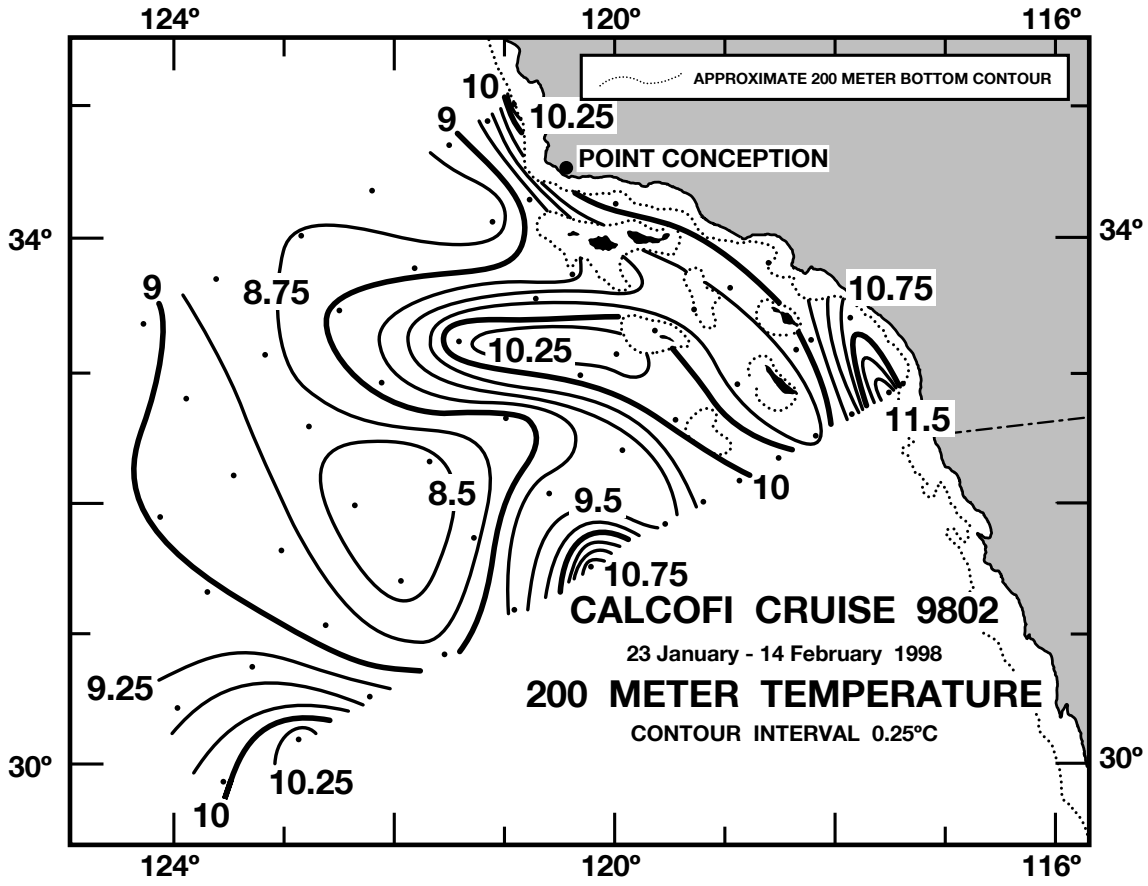


FIGURE 4C

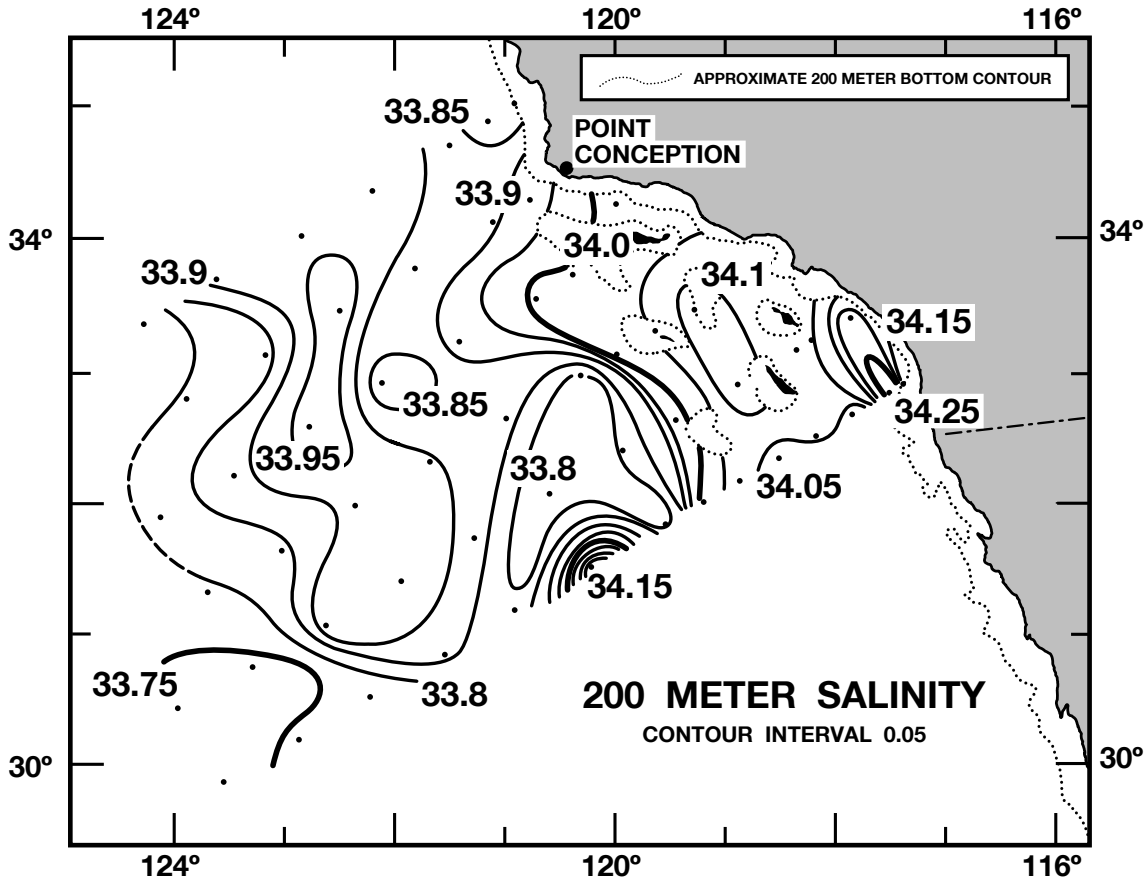


FIGURE 4D

CALCOFI CRUISE 9802

26 - 29 January 1998

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

GEOSTROPHIC VELOCITY RELATIVE TO 500m (cm/s)

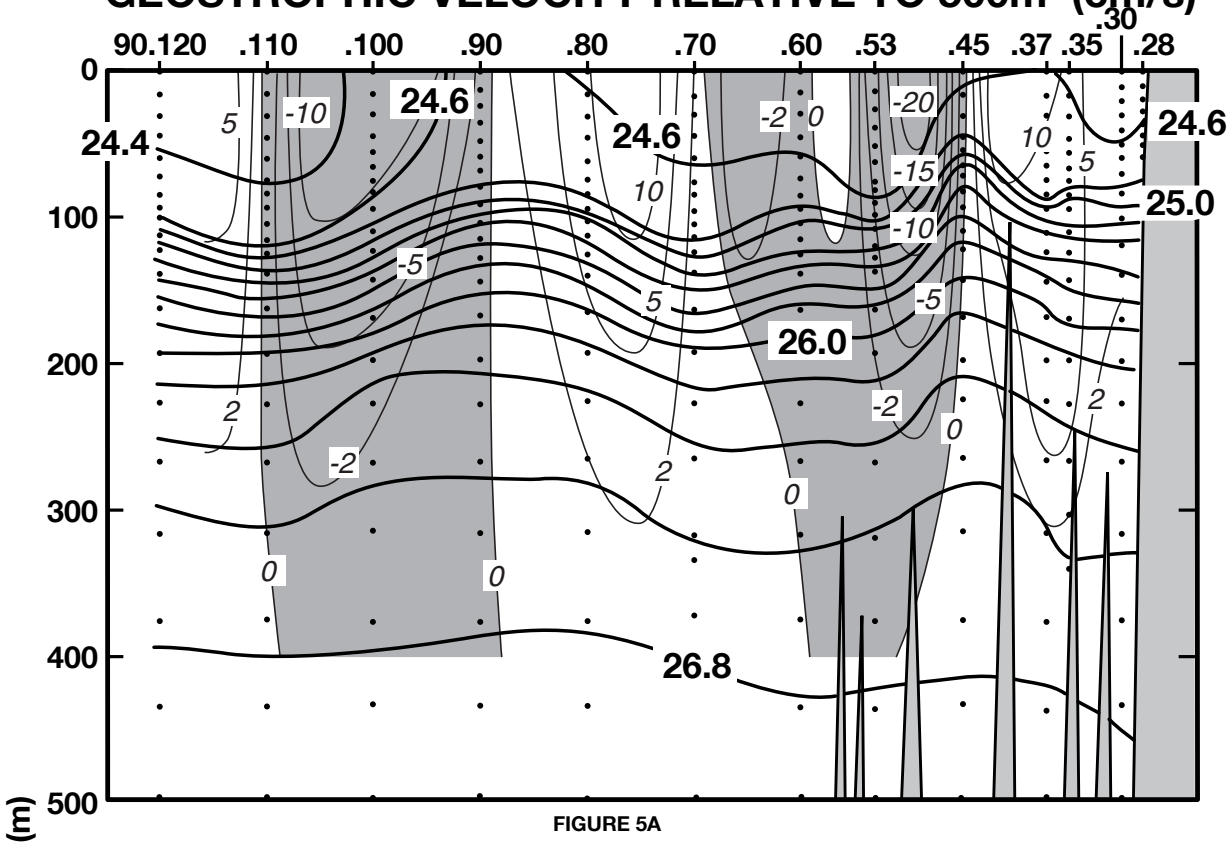


FIGURE 5A

TEMPERATURE (°C) ALONG CALCOFI LINE 90

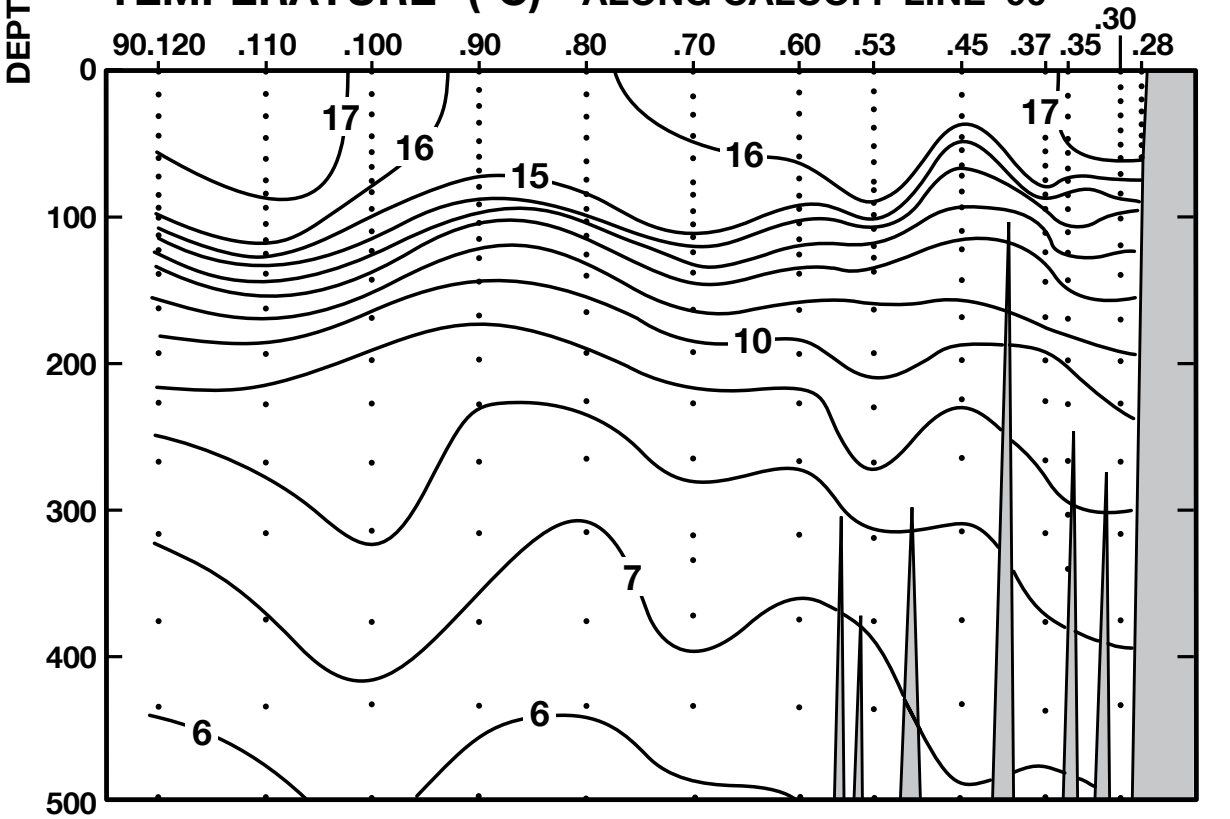


FIGURE 5B

CALCOFI CRUISE 9802

26 - 29 January 1998

SALINITY ALONG CALCOFI LINE 90

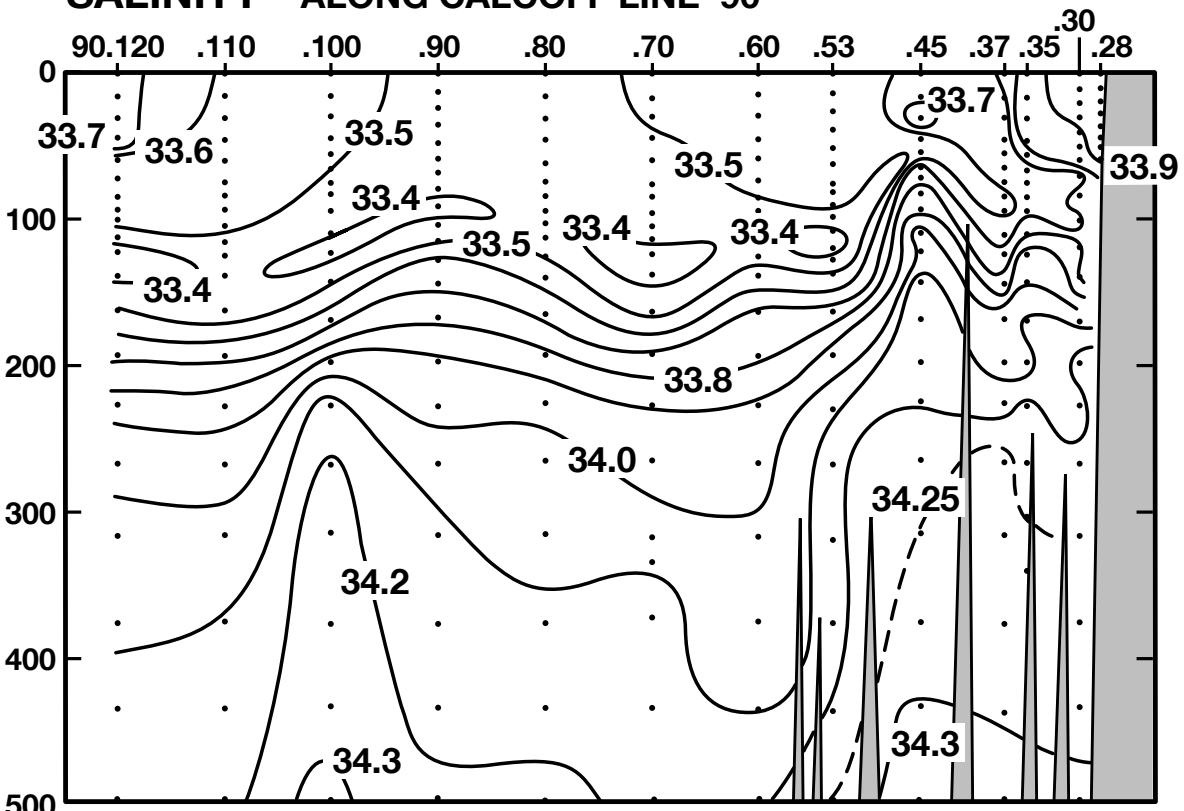


FIGURE 5C

SILICATE (µM/l) ALONG CALCOFI LINE 90

DEPTH (m)

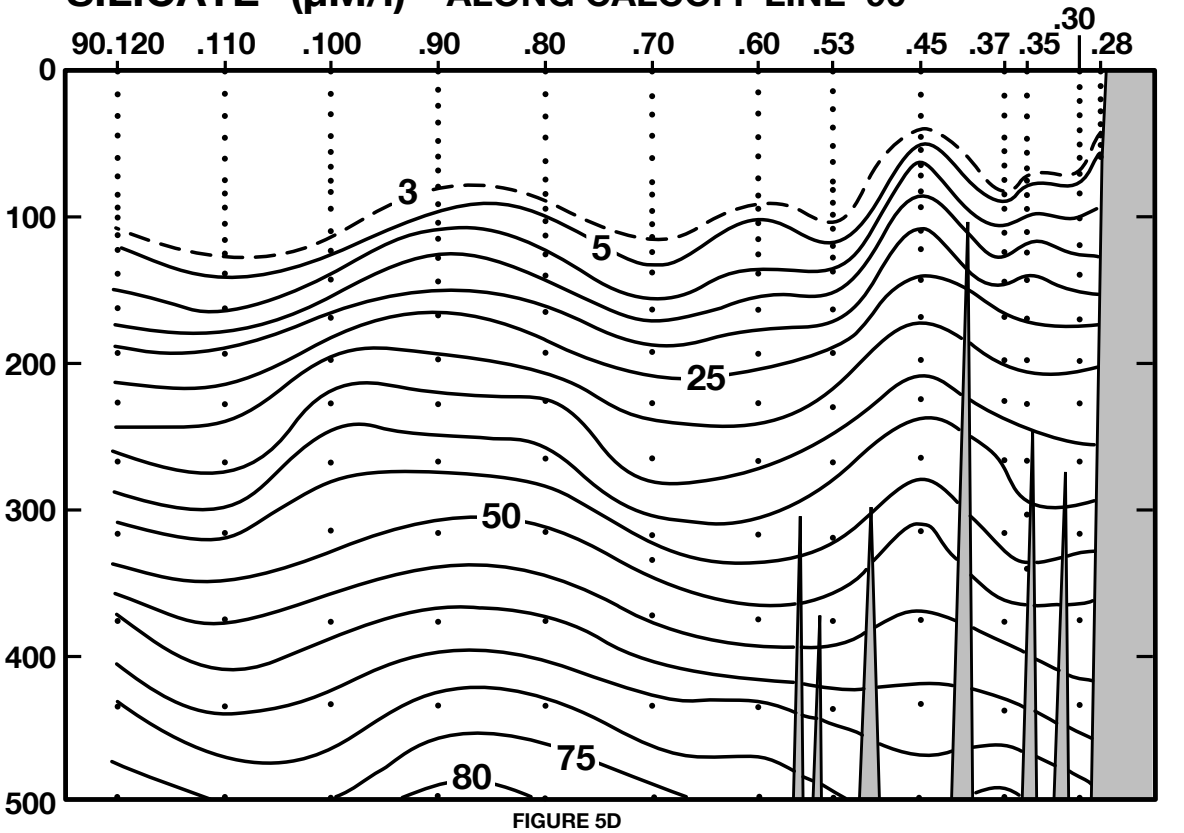


FIGURE 5D

CALCOFI CRUISE 9802

26 - 29 January 1998

NITRATE (μM/l) ALONG CALCOFI LINE 90

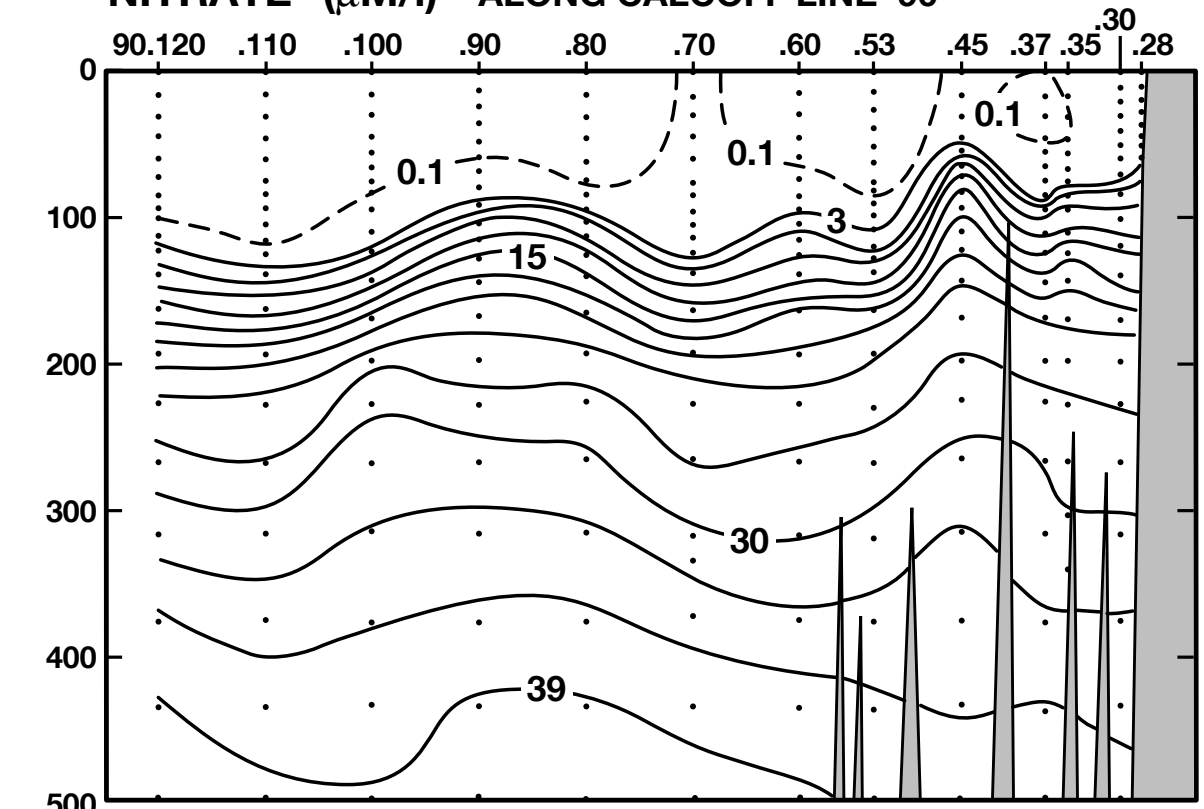


FIGURE 5E

PHOSPHATE (μM/l) ALONG CALCOFI LINE 90

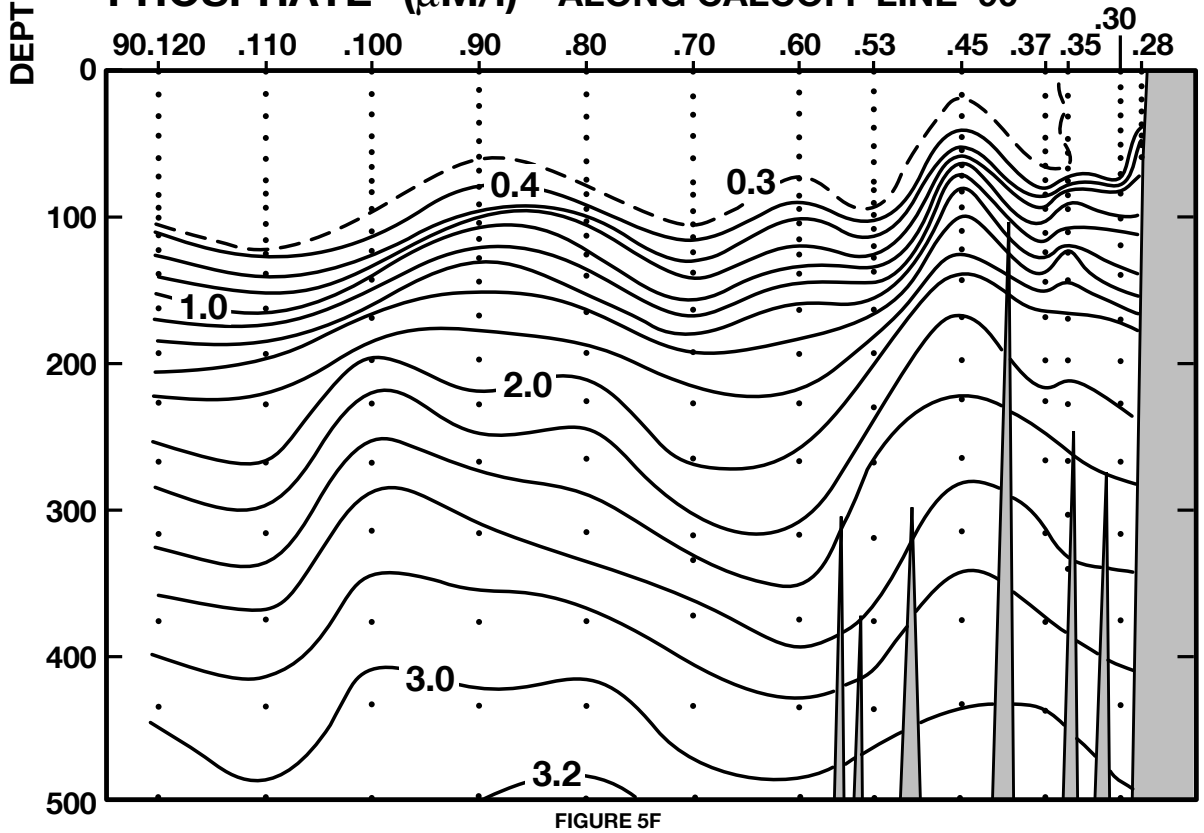


FIGURE 5F

CALCOFI CRUISE 9802

26 - 29 January 1998

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

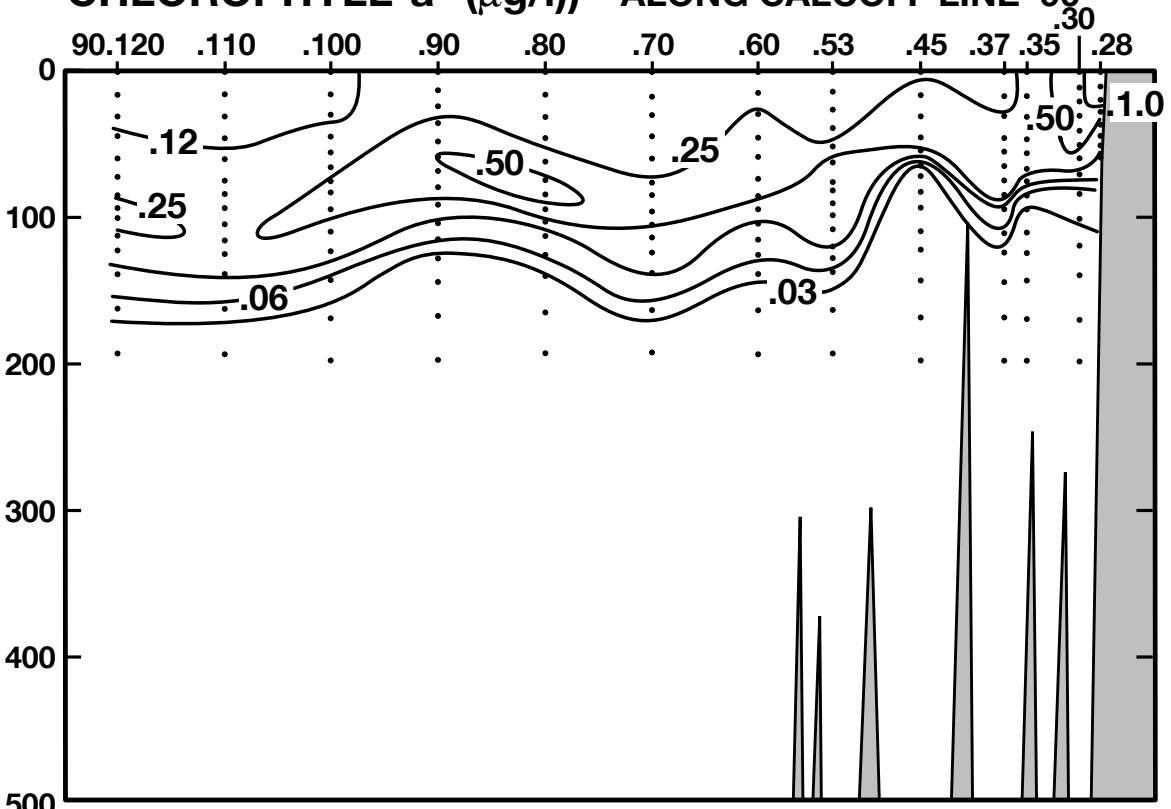


FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

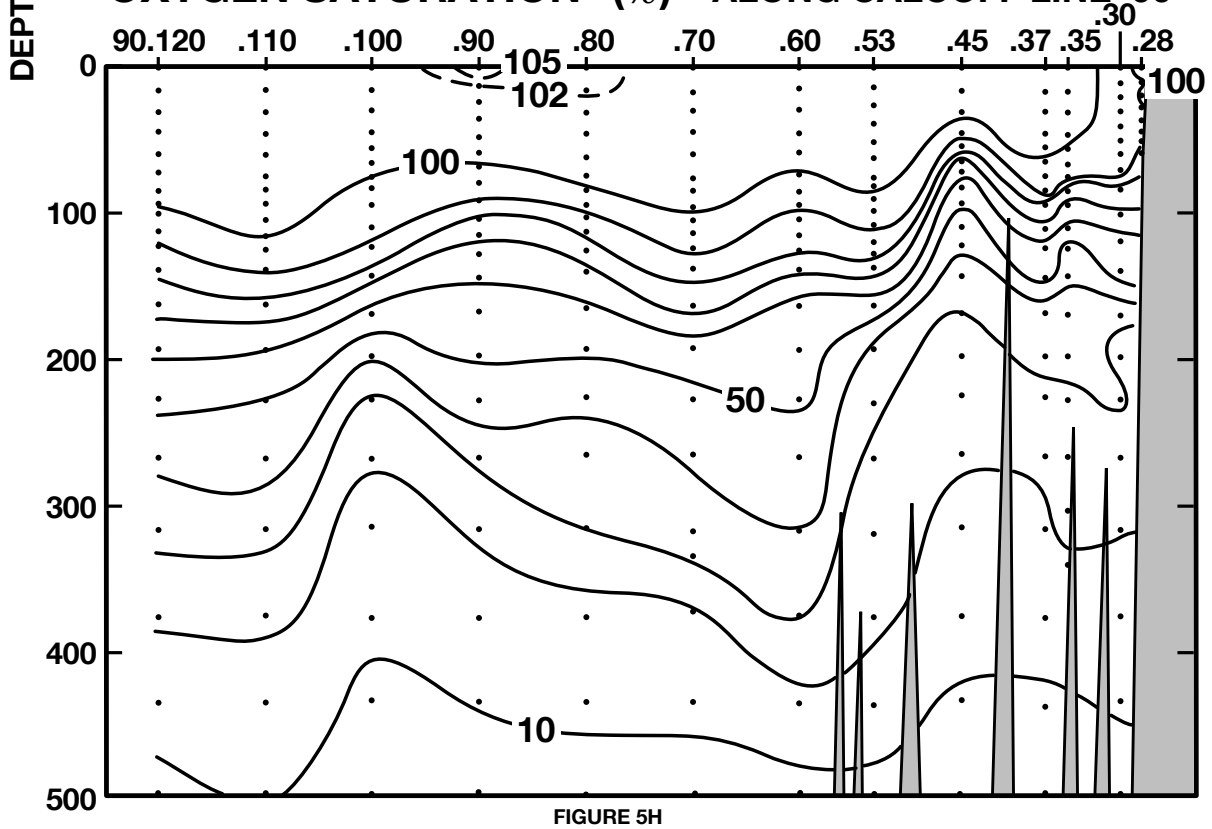


FIGURE 5H

CALCOFI CRUISE 9802

26 - 29 January 1998

OXYGEN (ml/l) ALONG CALCOFI LINE 90

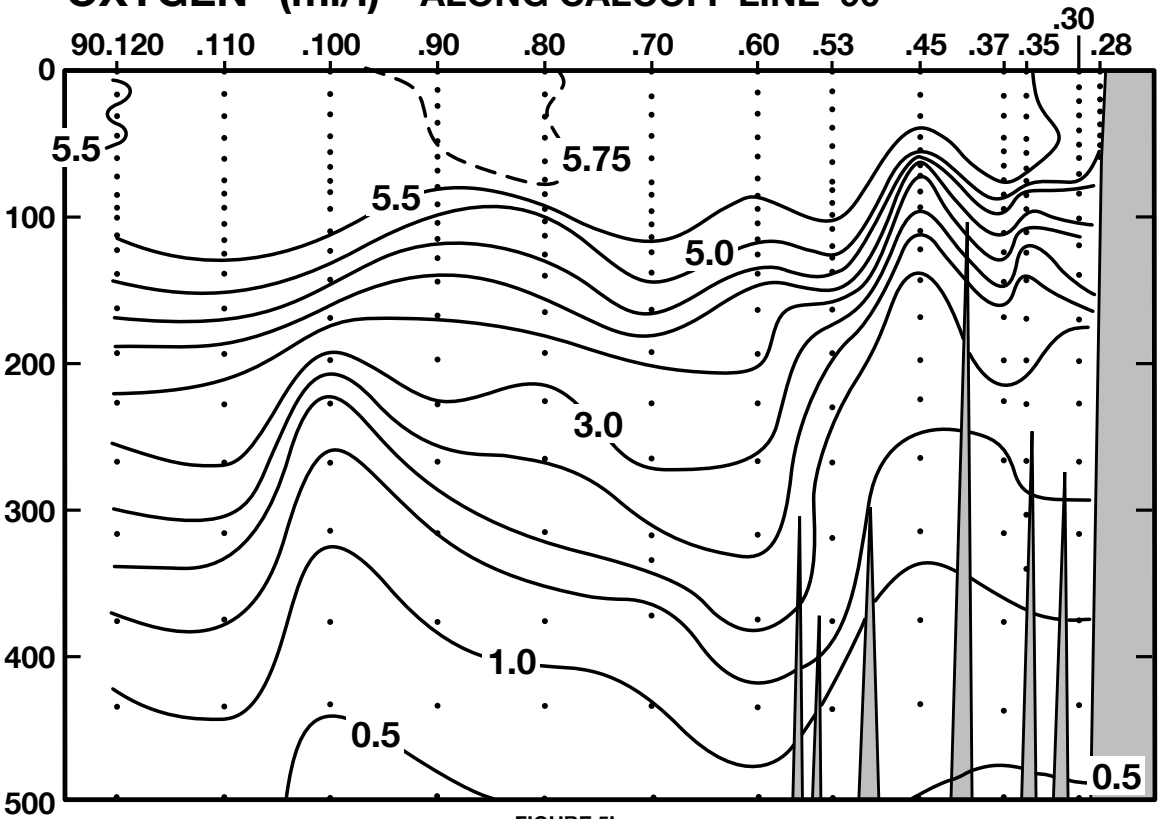


FIGURE 5I

NITRITE (μM/l) ALONG CALCOFI LINE 90

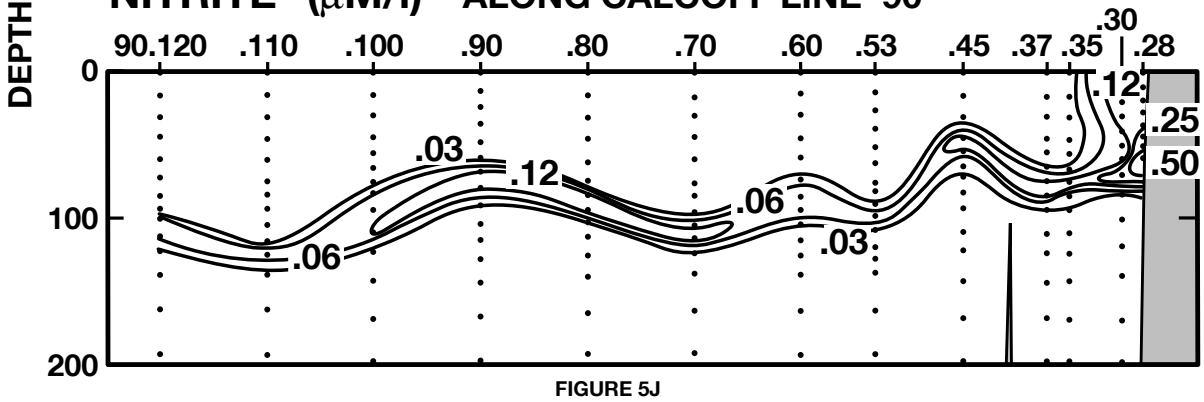


FIGURE 5J

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

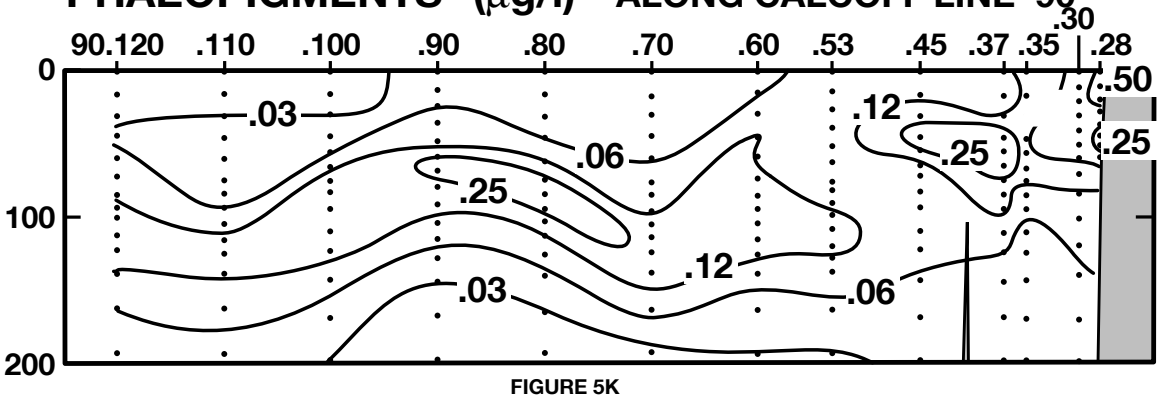


FIGURE 5K

PERSONNEL

CalCOFI Cruise 9802

SHIP'S CAPTAIN

Timothy J. Clancy, RV *David Starr Jordan*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participation (Leg)
Griffith, David A. (Chief Scientist)	Fishery Biologist, NMFS	1,2,3
Anfuso, Stacey R.	Staff Research Associate, SIO	1,2
Dotson, Ronald C.	Fishery Biologist, NMFS	1,2,3
Gruber, Dennis W.	Staff Research Associate, SIO	1,2,3
Hays, Amy E.	Fishery Biologist, NMFS	1,2,3
Hyrenbach, K. David	Graduate Student, SIO	2
Klick, Sonja M.	Biological Technician, NMFS	1
MacDonald, Laird A.	Biological Technician, NMFS	2,3
McGinnis, Jean L.	Staff Research Associate, SIO	1,2,3
Mitchell, B. Greg	Associate Research Biologist, SIO	1,2
Mullin, Michael M.	Director of MLRG, Professor, SIO	2
Ramirez, Fernando	Staff Research Associate, SIO	1,2,3
Renger, Edward H.	Staff Research Associate, SIO	1,2,3
Subramaniam, Ajit	Assistant Research Scientist, NOAA	1
Suh, Young Sang	Graduate Student, SIO	1,2

Leg 1: San Diego to Dana Point, Ca., 23 Jan.-29 Jan., 1998
Leg 2: Dana Point to Port San Luis, Ca., 29 Jan.-10 Feb., 1998
Leg 3: Port San Luis to San Diego, Ca., 10 Feb.-14 Feb., 1998

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
35 5.4 N	120 46.6 W	11/02/98	0053 UTC	66 m	170 04 kn	140 02 06	6	1024.9 mb	13.1 C	11.4 C		8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	15.40	15.40	32.568	24.012	388.9	0.000	5.89	102.8	15.2	4.39	2.9	0.51	1.18	0.26	0	
1	15.40	15.40	32.568	24.012	389.0	0.004	5.89	102.8	15.2	4.39 A	2.9	0.51	1.18	0.26	1	207
10	15.36	15.36	33.020	24.369	355.2	0.037	5.70	99.7	8.7	0.94	1.7	0.53	0.41	0.17	10	206
19	15.50	15.50	33.371	24.608	332.7	0.068	5.60	98.5	5.0	0.68	0.8	0.55	0.36	0.16	19	205
20 ISL	15.50	15.50	33.376	24.612	332.3	0.072	5.60	98.5	4.8	0.66	0.8	0.54	0.36	0.16	20	
30	15.44	15.44	33.418	24.658	328.3	0.105	5.59	98.2	3.5	0.54	0.7	0.43	0.41	0.20	30	204
39	15.46	15.45	33.457	24.684	326.1	0.134	5.59	98.2	2.6	0.49	0.6	0.42	0.37	0.22	39	203
49	15.44	15.43	33.461	24.692	325.6	0.167	5.56	97.7	2.5	0.44	0.7	0.38	0.37	0.22	49	202
50 ISL	15.41	15.40	33.464	24.701	324.8	0.170	5.54	97.3	2.6	0.45	0.8	0.38	0.37	0.22	50	
61	15.08	15.07	33.492	24.795	316.2	0.205	5.32	92.8	4.2	0.61	2.2	0.35	0.32	0.22	61	201

A) UNUSUAL NUTRIENT PROFILES AND ODD NO3/PO4 RATIOS MAY BE DUE TO RUN-OFF FROM RECENT HEAVY RAINFALL.

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
35 1.9 N	120 54.1 W	10/02/98	2224 UTC	213 m	190 04 kn	120 02 05	1	1024.9 mb	15.5 C	13.1 C	08m 05	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	15.52	15.52	33.425	24.645	328.6	0.000	5.72	100.6	3.5	0.42	0.7	0.27	0.98	0.29	0	
2	15.52	15.52	33.425	24.645	328.7	0.007	5.72	100.6	3.5	0.42	0.7	0.27	0.98	0.29	2	214
10 ISL	15.42	15.42	33.420	24.663	327.1	0.033	5.70	100.1	3.6	0.43	0.6	0.27	1.15	0.35	10	
11	15.41	15.41	33.420	24.665	327.0	0.036	5.70	100.1	3.6	0.43	0.6	0.27	1.16	0.36	11	213
20	15.45	15.45	33.443	24.675	326.4	0.065	5.61	98.6	3.3	0.41	0.8	0.33	0.79	0.32	20	212
29	15.44	15.44	33.462	24.692	325.0	0.095	5.57	97.9	3.2	0.38	0.8	0.34	0.53	0.24	29	211
30 ISL	15.44	15.44	33.462	24.692	325.0	0.098	5.57	97.9	3.2	0.38	0.8	0.34	0.51	0.24	30	
39	15.45	15.44	33.465	24.692	325.3	0.127	5.55	97.5	3.2	0.38	0.8	0.35	0.41	0.24	39	210
49	15.44	15.43	33.466	24.696	325.3	0.160	5.55	97.5	3.0	0.37	0.8	0.34	0.41	0.22	49	209
50 ISL	15.44	15.43	33.466	24.696	325.3	0.163	5.55	97.5	3.0	0.37	0.8	0.34	0.41	0.22	50	
60	15.44	15.43	33.466	24.696	325.6	0.196	5.55	97.5	3.0	0.37	0.8	0.34	0.41	0.24	60	208
69	15.44	15.43	33.466	24.696	325.8	0.225	5.55	97.5	2.9	0.37	0.8	0.32	0.42	0.23	69	207
75 ISL	15.44	15.43	33.464	24.695	326.1	0.245	5.55	97.5	2.9	0.37	0.8	0.31	0.43	0.23	75	
84	15.43	15.42	33.460	24.694	326.5	0.274	5.56	97.6	2.9	0.37	0.8	0.30	0.44	0.23	84	206
98	15.35	15.34	33.483	24.730	323.5	0.319	5.46	95.7	3.4	0.44	1.4	0.32	0.32	0.21	98	205
100 ISL	15.32	15.30	33.490	24.742	322.4	0.326	5.43	95.2	3.6	0.46	1.6	0.31	0.30	0.21	100	
119	14.41	14.39	33.568	24.999	298.4	0.385	4.87	83.8	7.4	0.73	5.6	0.22	0.16	0.17	120	204
125 ISL	13.71	13.69	33.598	25.168	282.3	0.402	4.56	77.4	10.1	0.91	8.2	0.19	0.12	0.17	126	
139	12.02	12.00	33.684	25.567	244.4	0.439	3.85	63.1	16.6	1.33	14.4	0.13	0.06	0.18	140	203
150 ISL	11.32	11.30	33.726	25.730	229.0	0.465	3.56	57.5	19.1	1.49	17.0	0.10	0.05	0.15	151	
169	10.70	10.68	33.769	25.874	215.6	0.507	3.28	52.3	21.3	1.63	19.4	0.08	0.02	0.10	170	202
200 ISL	10.35	10.33	33.833	25.985	205.6	0.573	3.01	47.6	24.2	1.78	21.4	0.09	0.01	0.09	201	
201	10.34	10.32	33.835	25.989	205.3	0.575	3.00	47.5	24.3	1.78	21.5	0.09	0.01	0.09	202	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 53.6 N	121 11.7 W	10/02/98	1849 UTC	560 m	080 02 kn	300 02 06	1	1026.0 mb	15.5 C	12.3 C	32m 02	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	15.23	15.23	33.292	24.606	332.3	0.000	5.75	100.5	1.9	0.28	0.0	0.01	0.30	0.11	0	
1 B	15.23	15.23	33.292	24.606	332.3	0.003	5.75	100.5	1.9	0.28	0.0	0.01	0.30	0.11	1	222
1	15.24	15.24	33.292	24.604	332.5	0.003									1	223
10 ISL	15.15	15.15	33.293	24.625	330.8	0.033	5.75	100.3	1.9	0.28	0.0	0.01	0.33	0.12	10	
11	15.14	15.14	33.293	24.627	330.6	0.036	5.75	100.3	1.9	0.28	0.0	0.01	0.33	0.12	11	221
20 ISL	15.13	15.13	33.294	24.630	330.6	0.066	5.76	100.5	1.9	0.27	0.0	0.01	0.33	0.12	20	
21 B	15.13	15.13	33.294	24.630	330.6	0.070	5.76	100.5	1.9	0.27	0.0	0.01	0.33	0.12	21	220
30 ISL	15.13	15.13	33.292	24.629	331.0	0.099	5.77	100.6	1.9	0.27	0.0	0.01	0.34	0.13	30	
32	15.13	15.13	33.292	24.629	331.1	0.106	5.77	100.6	1.9	0.27	0.0	0.01	0.34	0.13	32	219
44 B	15.13	15.12	33.293	24.630	331.3	0.146	5.75	100.3	1.9	0.27	0.0	0.01	0.35	0.14	44	218
50 ISL	15.13	15.12	33.293	24.630	331.5	0.166	5.74	100.1	1.9	0.27	0.0	0.01	0.35	0.14	50	
55	15.13	15.12	33.293	24.630	331.6	0.182	5.74	100.1	1.9	0.27	0.0	0.01	0.49 U	-0.02 U	55	217
65 B	15.13	15.12	33.292	24.630	332.0	0.215	5.76	100.5	1.9	0.27	0.0	0.01	0.36	0.12	65	216
75 ISL	15.10	15.09	33.296	24.640	331.3	0.248	5.74	100.0	1.9	0.27	0.0	0.01	0.15	0.10	75	
76	15.10	15.09	33.296	24.640	331.4	0.252	5.74	100.0	1.9	0.27	0.0	0.01	0.13 A	0.10 A	76	215
87 B	13.97	13.96	33.330	24.906	306.2	0.287	5.63	95.9	2.4	0.37	1.2	0.07	0.11	0.16	87	214
97	13.16	13.15	33.332	25.072	290.5	0.317	5.38	90.1	4.6	0.59	4.2	0.03	0.09	0.09	97	213
100 ISL	12.80	12.79	33.361	25.166	281.6	0.325	5.20	86.5	5.9	0.70	5.9	0.03	0.09	0.09	100	
110	11.78	11.77	33.464	25.441	255.6	0.352	4.68	76.2	9.7	1.00	10.7	0.04	0.08	0.10	111	212
119 B	11.60	11.58	33.472	25.480	252.0	0.375	4.64	75.3	10.4	1.02	11.2	0.05	0.08	0.09	120	211
125 ISL	11.51	11.49	33.483	25.505	249.7	0.390	4.58	74.2	10.9	1.05	11.8	0.05	0.07	0.08	126	
132	11.38	11.36	33.501	25.543	246.3	0.407	4.50	72.7	11.7	1.10	12.6	0.05	0.06	0.07	133	210
145	10.86	10.84	33.544	25.670	234.4	0.439	4.33	69.2	13.9	1.23	14.7	0.05	0.04	0.06	146	209
150 ISL	10.67	10.65	33.569	25.723	229.4	0.450	4.22	67.1	15.0	1.29	15.7	0.05	0.03	0.06	151	
169	10.02	10.00	33.673	25.916	211.3	0.492	3.77	59.2	19.5	1.52	19.4	0.06	0.01	0.04	170	208
199	9.30	9.28	33.817	26.148	189.8	0.552	3.19	49.3	25.9	1.81	23.9	0.07	0.00	0.02	200	207
200 ISL	9.28	9.26	33.820	26.153	189.2	0.554	3.18	49.1	26.0	1.81	24.0	0.07			201	
228	8.86	8.84	33.906	26.288	176.9	0.605	3.00	45.9	29.5	1.93	25.6	0.07			229	206
250 ISL	8.60	8.57	33.999	26.401	166.4	0.643	2.64	40.2	34.0	2.09	27.5	0.08			251	
269	8.41	8.38	34.076	26.491	158.2	0.674	2.27	34.4	38.1	2.24	29.1	0.08			271	205
300 ISL	8.20	8.17	34.155	26.585	149.8	0.722	1.74	26.3	43.4	2.45	31.1	0.08			302	
317	8.05	8.02	34.176	26.624	146.3	0.747	1.52	22.9	46.2	2.55	32.0	0.08			319	204
378	6.86	6.82	34.104	26.737	135.7	0.833	1.52	22.3	56.7	2.67	35.2	0.09			380	203
400 ISL	6.73	6.69	34.131	26.776	132.2	0.862	1.30	19.0	60.5	2.77	36.1	0.09			403	
438	6.63	6.59	34.195	26.840	126.7	0.912	0.87	12.7	66.9	2.94	37.5	0.09			441	202
500 ISL	6.18	6.14	34.236	26.932	118.5	0.988	0.58	8.4	75.5	3.09	39.4	0.09			503	
515	6.07	6.02	34.246	26.954	116.5	1.005	0.51	7.3	77.6	3.13	39.9	0.09			519	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 DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 43.4 N	121 33.0 W	10/02/98	1217 UTC	920 m	300 12 kn			1023.1 mb	13.9 C	11.0 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	14.73	14.73	33.193	24.638	329.2	0.000	5.81	100.5	2.1	0.29	0.1	0.00	0.39	0.16	0	
2	14.73	14.73	33.193	24.638	329.3	0.007	5.81	100.5	2.1	0.29	0.1	0.00	0.39	0.16	2	220
2	14.73	14.73	33.191	24.636	329.4	0.007									2	221
10 ISL	14.72	14.72	33.190	24.638	329.5	0.033	5.82	100.6	2.1	0.29	0.1	0.00	0.39	0.15	10	
14	14.72	14.72	33.189	24.637	329.7	0.046	5.82	100.6	2.1	0.29	0.1	0.00	0.39	0.15	14	219
20 ISL	14.72	14.72	33.189	24.638	329.9	0.066	5.82	100.6	2.1	0.29	0.1	0.00	0.40	0.16	20	
30	14.73	14.73	33.189	24.636	330.3	0.099	5.81	100.5	2.1	0.28	0.1	0.00	0.41	0.17	30	218
45	14.73	14.72	33.188	24.635	330.8	0.149	5.82	100.6	2.1	0.28	0.1	0.00	0.41	0.16	45	217
50 ISL	14.73	14.72	33.188	24.636	330.9	0.165	5.82	100.6	2.1	0.28	0.1	0.00	0.40	0.16	50	
59	14.73	14.72	33.187	24.635	331.3	0.195	5.82	100.6	2.2	0.29	0.1	0.00	0.38	0.15	59	216
73	14.73	14.72	33.188	24.636	331.6	0.241	5.81	100.4	2.2	0.29	0.1	0.00	0.39	0.15	73	215
75 ISL	14.68	14.67	33.189	24.648	330.5	0.248	5.80	100.2	2.3	0.31	0.3	0.04	0.37	0.17	75	
86	14.41	14.40	33.379	24.852	311.4	0.283	5.56	95.6	3.0	0.40	1.3	0.16	0.24	0.23	86	214
93	13.04	13.03	33.413	25.159	282.2	0.304	5.15	86.1	6.2	0.71	6.2	0.04	0.17	0.19	93	213
100 ISL	12.54	12.53	33.419	25.261	272.5	0.323	5.03	83.2	7.3	0.80	7.7	0.04	0.14	0.17	100	
102	12.48	12.47	33.418	25.272	271.5	0.329	5.02	83.0	7.4	0.81	7.8	0.04	0.14	0.16	102	212
114	11.90	11.89	33.435	25.396	260.0	0.361	4.89	79.8	8.7	0.91	9.5	0.04	0.12	0.13	115	211
125	11.43	11.41	33.467	25.508	249.5	0.389	4.73	76.5	10.5	1.02	11.3	0.04	0.08	0.09	126	210
142	10.54	10.52	33.593	25.764	225.3	0.429	4.05	64.3	16.5	1.40	17.2	0.03	0.02	0.05	143	209
150 ISL	10.24	10.22	33.647	25.858	216.5	0.447	3.80	59.9	19.0	1.52	19.1	0.03	0.02	0.05	151	
162	9.85	9.83	33.721	25.982	204.9	0.472	3.50	54.7	22.2	1.66	21.3	0.04	0.01	0.04	163	208
194	8.94	8.92	33.866	26.243	180.4	0.534	3.19	48.9	28.3	1.88	24.9	0.04	0.00	0.03	195	207
200 ISL	8.83	8.81	33.888	26.278	177.2	0.544	3.15	48.2	29.2	1.90	25.3	0.04			201	
228	8.47	8.45	33.976	26.403	165.8	0.592	2.91	44.2	33.4	2.02	27.1	0.04			229	206
250 ISL	8.26	8.23	34.030	26.477	159.0	0.628	2.55	38.6	37.3	2.18	28.9	0.05			251	
268	8.09	8.06	34.062	26.528	154.5	0.656	2.25	33.9	40.5	2.32	30.4	0.05			270	205
300 ISL	7.71	7.68	34.085	26.602	147.8	0.705	1.99	29.7	45.2	2.45	32.0	0.05			302	
315	7.51	7.48	34.086	26.632	145.1	0.727	1.91	28.4	47.4	2.49	32.6	0.05			317	204
374	6.57	6.54	34.070	26.749	134.3	0.809	1.65	24.0	58.8	2.68	36.0	0.05			376	203
400 ISL	6.38	6.34	34.101	26.798	129.8	0.843	1.37	19.8	63.8	2.81	37.4	0.05			403	
438	6.23	6.19	34.160	26.865	124.0	0.892	0.94	13.6	70.2	3.00	39.0	0.05			441	202
500 ISL	6.08	6.04	34.230	26.940	117.6	0.967	0.56	8.1	76.3	3.12	40.1	0.06			503	
510	6.05	6.01	34.241	26.952	116.5	0.978	0.50	7.2	77.3	3.14	40.3	0.06			513	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 14.9 W	10/02/98	0618 UTC	4016 m	290 12 kn			1024.3 mb	13.8 C	10.8 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	14.22	14.22	33.102	24.676	325.7	0.000	5.90	100.9	2.2	0.31	0.1	0.02	0.39	0.15	0	
2	14.22	14.22	33.102	24.676	325.7	0.007	5.90	100.9	2.2	0.31	0.1	0.02	0.39	0.15	2	220
10 ISL	14.23	14.23	33.103	24.675	326.0	0.033	5.90	100.9	2.2	0.30	0.1	0.02	0.39	0.16	10	
16	14.23	14.23	33.104	24.676	326.1	0.052	5.90	100.9	2.2	0.30	0.1	0.02	0.39	0.16	16	219
20 ISL	14.23	14.23	33.104	24.676	326.2	0.065	5.90	100.9	2.2	0.30	0.1	0.02	0.39	0.15	20	
30 ISL	14.23	14.23	33.103	24.675	326.6	0.098	5.89	100.8	2.2	0.31	0.1	0.02	0.41	0.13	30	
31	14.23	14.23	33.103	24.675	326.6	0.101			2.2	0.31	0.1	0.02	0.41	0.13	31	218
45	14.22	14.21	33.109	24.682	326.3	0.147	5.88	100.6	2.2	0.31	0.1	0.02	0.44	0.20	45	217
50 ISL	14.22	14.21	33.114	24.686	326.1	0.163	5.87	100.4	2.2	0.31	0.1	0.02	0.44	0.20	50	
60	14.21	14.20	33.126	24.698	325.2	0.196	5.86	100.2	2.3	0.32	0.2	0.03	0.44	0.18	60	216
75 ISL	14.22	14.21	33.147	24.713	324.3	0.244	5.89	100.7	2.4	0.33	0.3	0.07	0.32	0.19	75	
76	14.22	14.21	33.148	24.713	324.2	0.248	5.89	100.7	2.4	0.33	0.3	0.07	0.31	0.19	76	215
84	13.57	13.56	33.228	24.909	305.8	0.273	5.67	95.7	2.9	0.43	1.7	0.14	0.22	0.13	84	214
94	12.87	12.86	33.335	25.132	284.7	0.302	5.24	87.3	5.9	0.68	5.7	0.05			94	213
100 ISL	11.88	11.87	33.354	25.336	265.3	0.319	4.85	79.1	9.5	0.96	10.1	0.04	0.10	0.11	100	
104	11.22	11.21	33.369	25.469	252.6	0.329	4.60	74.0	11.9	1.14	12.9	0.03	0.08	0.10	104	212
114	10.60	10.59	33.456	25.647	235.9	0.354	4.31	68.4	15.1	1.34	16.1	0.03	0.04	0.07	115	211
124	10.09	10.08	33.507	25.774	223.9	0.377	4.08	64.1	18.0	1.49	18.5	0.03	0.03	0.05	125	210
125 ISL	10.06	10.05	33.516	25.786	222.7	0.379	4.06	63.7	18.2	1.50	18.7	0.03	0.03	0.05	126	
137	9.80	9.78	33.628	25.917	210.5	0.405	3.79	59.2	20.6	1.61	20.6	0.03	0.01	0.04	138	209
150 ISL	9.53	9.51	33.719	26.033	199.7	0.432	3.56	55.3	23.0	1.71	22.2	0.03	0.01	0.04	151	
165	9.23	9.21	33.797	26.143	189.5	0.461	3.40	52.5	25.4	1.79	23.5	0.03	0.00	0.04	166	208
194	8.66	8.64	33.895	26.310	174.0	0.513	3.49	53.2	28.8	1.81	24.5	0.03	0.00	0.04	195	207
200 ISL	8.56	8.54	33.915	26.341	171.2	0.524	3.39	51.6	29.9	1.85	25.0	0.03			201	
228	8.12	8.10	33.985	26.463	160.0	0.570	2.89	43.5	35.3	2.05	27.7	0.04			229	206
250 ISL	7.75	7.73	33.992	26.523	154.5	0.605	2.93	43.8	38.1	2.11	28.7	0.04			251	
268	7.45	7.42	33.987	26.562	150.9	0.632	2.97	44.1	40.4	2.14	29.3	0.03			270	205
300 ISL	7.02	6.99	33.997	26.630	144.7	0.679	2.67	39.2	47.3	2.30	31.5	0.03			302	
318	6.81	6.78	34.005	26.665	141.5	0.705	2.44	35.7	51.3	2.40	32.8	0.03			320	204
377	6.33	6.30	34.036	26.753	133.7	0.786	1.75	25.3	59.8	2.68	36.2	0.03			379	203
400 ISL	6.14	6.10	34.052	26.790	130.3	0.817	1.52	21.9	64.0	2.79	37.5	0.03			403	
438	5.84	5.80	34.080	26.850	124.9	0.865	1.20	17.2	71.0	2.94	39.3	0.04			441	202
500 ISL	5.53	5.49	34.130	26.928	118.0	0.941	0.80	11.4	79.5	3.09	41.1	0.05			503	
515	5.45	5.41	34.142	26.948	116.3	0.958	0.70	9.9	81.5	3.13	41.5	0.05			519	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 2.8 N	122 54.4 W	10/02/98	0038 UTC	4173 m	320 10 kn	320 04 04	1	1019.0 mb	14.9 C	11.8 C	23m 01	3/8 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	14.70	14.70	33.133	24.598	333.0	0.000	5.84	100.9	2.2	0.28	0.1	0.00	0.29	0.05	0	
2		14.70	14.70	33.133	24.598	333.1	0.007									2	221
2		14.70	14.70	33.133	24.598	333.1	0.007	5.84	100.9	2.2	0.28	0.1	0.00	0.29	0.05	2	220
10	ISL	14.70	14.70	33.132	24.598	333.4	0.033	5.85	101.1	2.1	0.27	0.1	0.00	0.28	0.07	10	
15		14.70	14.70	33.132	24.598	333.5	0.050	5.85	101.1	2.1	0.27	0.1	0.00	0.28	0.09	15	219
20	ISL	14.69	14.69	33.132	24.600	333.4	0.067	5.84	100.9	2.1	0.27	0.1	0.00	0.28	0.09	20	
29		14.68	14.68	33.130	24.601	333.6	0.097	5.83	100.7	2.1	0.27	0.1	0.00	0.29	0.09	29	218
30	ISL	14.67	14.67	33.129	24.602	333.5	0.100	5.83	100.6	2.1	0.27	0.1	0.00	0.29	0.09	30	
46		14.57	14.56	33.108	24.608	333.4	0.153	5.84	100.6	2.1	0.28	0.1	0.00	0.31	0.10	46	217
50	ISL	14.56	14.55	33.106	24.609	333.5	0.167	5.84	100.6	2.1	0.28	0.1	0.00	0.32	0.11	50	
59		14.56	14.55	33.104	24.607	333.9	0.197	5.84	100.6	2.1	0.28	0.1	0.00	0.34	0.12	59	216
75		14.51	14.50	33.094	24.611	334.0	0.250	5.85	100.6	2.1	0.29	0.1	0.00			75	215
83		14.61	14.60	33.272	24.727	323.2	0.276	5.73	98.9	2.5	0.29	0.6	0.04	0.26	0.15	83	214
94		13.85	13.84	33.412	24.995	298.0	0.311	5.53	94.0	4.1	0.43	2.4	0.07	0.24	0.22	94	213
100	ISL	12.52	12.51	33.272	25.151	283.0	0.328	5.36	88.6	6.1	0.66	5.7	0.03	0.18	0.22	100	
103		11.88	11.87	33.213	25.227	275.7	0.336	5.27	85.9	7.1	0.78	7.3	0.01	0.15	0.22	103	212
114		11.61	11.60	33.413	25.432	256.4	0.366	5.00	81.1	8.8	0.88	9.3	0.01	0.11	0.10	115	211
124		10.96	10.94	33.494	25.613	239.3	0.390	4.73	75.7	11.7	1.07	12.5	0.01	0.07	0.09	125	210
125	ISL	10.90	10.88	33.500	25.628	237.9	0.393	4.70	75.1	12.0	1.09	12.8	0.01	0.07	0.09	126	
139		10.23	10.21	33.581	25.808	221.0	0.425	4.33	68.2	16.0	1.33	16.8	0.01	0.04	0.06	140	209
150	ISL	9.80	9.78	33.653	25.937	208.9	0.449	4.11	64.2	19.1	1.48	19.2	0.01			151	
163		9.39	9.37	33.739	26.072	196.3	0.475	3.84	59.5	22.7	1.63	21.6	0.01			164	208
193		8.85	8.83	33.914	26.295	175.5	0.531	2.95	45.2	30.3	1.97	26.4	0.00			194	207
200	ISL	8.75	8.73	33.944	26.334	171.9	0.543	2.81	42.9	31.7	2.03	27.1	0.00			201	
229		8.38	8.36	34.026	26.456	160.7	0.591	2.45	37.1	36.6	2.19	29.1	0.00			230	206
250	ISL	8.11	8.08	34.043	26.510	155.9	0.624	2.45	36.9	39.0	2.24	29.8	0.00			251	
270		7.85	7.82	34.042	26.548	152.5	0.655	2.45	36.7	41.1	2.26	30.2	0.00			272	205
300	ISL	7.37	7.34	34.033	26.610	146.8	0.700	2.36	35.0	45.2	2.33	31.5	0.00			302	
317		7.13	7.10	34.031	26.642	143.9	0.725	2.31	34.0	47.7	2.39	32.3	0.00			319	204
378		6.79	6.75	34.112	26.753	134.2	0.810	1.38	20.2	57.9	2.75	36.0	0.00			380	203
400	ISL	6.68	6.64	34.144	26.793	130.6	0.839	1.10	16.0	61.8	2.86	37.1	0.00			403	
436		6.48	6.44	34.191	26.857	124.9	0.885	0.74	10.7	68.2	3.02	38.6	0.00			439	202
500	ISL	5.95	5.91	34.227	26.954	116.2	0.962	0.49	7.0	78.2	3.17	40.6	0.00			503	
511		5.86	5.82	34.234	26.971	114.6	0.975	0.45	6.4	79.9	3.20	40.9	0.00			514	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | 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 40.1 W	09/02/98	1850 UTC	4076 m	330 15 kn	320 05 06	1	1025.2 mb	14.8 C	11.6 C	32m 02	3/8 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	14.81	14.81	33.153	24.590	333.8	0.000	5.79	100.3	2.2	0.27	0.1	0.00	0.26	0.06	0	
1		14.81	14.81	33.154	24.591	333.8	0.003									1	223
1	A	14.81	14.81	33.153	24.590	333.8	0.003	5.79	100.3	2.2	0.27	0.1	0.00	0.26	0.06	1	222
10		14.80	14.80	33.153	24.593	333.9	0.033	5.79	100.2	2.1	0.27	0.1	0.00	0.27	0.07	10	221
20	A	14.85	14.85	33.177	24.601	333.4	0.067	5.78	100.2	2.1	0.26	0.1	0.00	0.27	0.08	20	220
30	ISL	14.96	14.96	33.195	24.591	334.6	0.100	5.79	100.6	2.1	0.25	0.0	0.00	0.25	0.07	30	
31		14.97	14.97	33.197	24.590	334.7	0.103	5.79	100.6	2.1	0.25	0.0	0.00	0.25	0.07	31	219
44	A	15.02	15.01	33.227	24.603	333.9	0.147	5.75	100.0	2.0	0.25	0.0	0.00	0.28	0.07	44	218
50	ISL	15.08	15.07	33.244	24.604	334.0	0.167	5.74	100.0	2.0	0.25	0.0	0.00	0.29	0.08	50	
54		15.12	15.11	33.256	24.604	334.1	0.180	5.74	100.1	2.0	0.25	0.0	0.00	0.29	0.09	54	217
64	A	15.19	15.18	33.285	24.612	333.7	0.214	5.74	100.2	1.9	0.25	0.1	0.00	0.28	0.08	64	216
75	ISL	15.26	15.25	33.346	24.644	331.0	0.250	5.69	99.5	2.0	0.25	0.2	0.02	0.25	0.09	75	
76		15.27	15.26	33.352	24.646	330.8	0.254	5.68	99.4	2.0	0.25	0.2	0.02	0.25	0.09	76	215
86	A	14.48	14.47	33.502	24.932	303.8	0.285	5.58	96.2	3.0	0.31	1.1	0.11	0.22	0.15	86	214
97		12.58	12.57	33.291	25.154	282.6	0.318	5.39	89.2	5.4	0.63	5.1	0.03	0.15	0.14	97	213
100	ISL	12.39	12.38	33.334	25.224	276.0	0.326	5.33	87.9	5.9	0.66	5.6	0.03	0.13	0.13	100	
108		12.15	12.14	33.489	25.391	260.4	0.347	5.16	84.7	7.0	0.69	6.7	0.02	0.08	0.11	108	212
119	A	11.76	11.74	33.520	25.488	251.3	0.376	4.99	81.3	8.2	0.80	8.5	0.02	0.07	0.08	120	211
125	ISL	11.20	11.18	33.549	25.613	239.4	0.390	4.86	78.2	10.1	0.93	10.6	0.02	0.06	0.06	126	
131		10.62	10.60	33.583	25.742	227.2	0.404	4.73	75.2	12.3	1.07	12.9	0.02	0.04	0.05	132	210
144		9.98	9.96	33.632	25.890	213.2	0.433	4.47	70.1	15.7	1.25	15.9	0.02	0.02	0.04	145	209
150	ISL	9.83	9.81	33.656	25.934	209.1	0.446	4.39	68.6	16.7	1.30	16.8	0.02	0.02	0.03	151	
169		9.50	9.48	33.739	26.054	198.1	0.484	4.19	65.0	19.7	1.44	19.1	0.02	0.01	0.02	170	208
198		8.67	8.65	33.897	26.310	174.1	0.538	3.85	58.7	26.8	1.66	22.9	0.02	0.00	0.02	199	207
200	ISL	8.64	8.62	33.904	26.320	173.2	0.542	3.85	58.7	27.0	1.66	23.0	0.02			201	
231		8.32	8.30	33.965	26.417	164.4	0.594	3.79	57.4	30.4	1.73	24.1	0.02			232	206
250	ISL	7.98	7.95	33.980	26.480	158.7	0.625	3.53	53.0	34.1	1.86	25.9	0.02			251	
271		7.57	7.54	33.986	26.544	152.7	0.657	3.18	47.3	38.8	2.03	28.2	0.03			273	205
300	ISL	7.09	7.06	33.992	26.616	146.0	0.701	2.77	40.8	44.7	2.23	30.7	0.03			302	
318		6.82	6.79	33.994	26.655	142.5	0.727	2.54	37.1	48.3	2.34	32.1	0.03			320	204
380		6.09	6.06	34.005	26.759	132.9	0.812	1.93	27.7	59.9	2.62	35.9	0.03			382	203
400	ISL	5.99	5.96	34.027	26.790	130.2	0.838	1.66	23.8	63.5	2.72	37.1	0.03			403	
431		5.86	5.82	34.066	26.837	126.1	0.878	1.27	18.2	68.9	2.87	38.8	0.03			434	202
500	ISL	5.40	5.36	34.127	26.942	116.6	0.962	0.78	11.0	80.8	3.08	41.4	0.03			503	
503		5.38	5.34	34.130	26.946	116.2	0.965	0.76	10.7	81.3	3.09	41.5	0.03			506	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 23.0 N	124 19.4 W	09/02/98	0823 UTC	4497 m	310 22 kn			1022.2 mb	14.9 C	12.0 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	16.08	16.08	33.602	24.655	327.6	0.000	5.61	99.9	2.1	0.19	0.0	0.00	0.20	0.06	0	
2	16.08	16.08	33.603	24.656	327.6	0.007									2	221
3	16.08	16.08	33.602	24.655	327.7	0.010	5.61	99.9	2.1	0.19	0.0	0.00	0.20	0.06	3	220
10 ISL	16.09	16.09	33.603	24.654	328.0	0.033	5.61	99.9	2.1	0.19	0.0	0.00	0.20	0.07	10	
15	16.09	16.09	33.603	24.654	328.2	0.049	5.61	99.9	2.1	0.19	0.0	0.00	0.20	0.07	15	219
20 ISL	16.09	16.09	33.603	24.654	328.3	0.066	5.61	99.9	2.1	0.19	0.0	0.00	0.20	0.07	20	
30	16.09	16.09	33.602	24.654	328.7	0.098	5.61	99.9	2.2	0.19	0.0	0.00	0.19	0.06	30	218
44	16.10	16.09	33.602	24.652	329.3	0.145	5.61	99.9	2.2	0.19	0.0	0.00	0.20	0.09	44	217
50 ISL	16.10	16.09	33.602	24.652	329.5	0.164	5.61	99.9	2.3	0.19	0.0	0.00	0.20	0.09	50	
60	16.09	16.08	33.602 D	24.655	329.6	0.197									60	216
75	16.10	16.09	33.602	24.653	330.2	0.247	5.61	99.9	2.4	0.19	0.0	0.00	0.21	0.06	75	215
83	16.09	16.08	33.602	24.656	330.2	0.273	5.62	100.1	2.3	0.19	0.0	0.00	0.20	0.07	83	214
95	16.10	16.08	33.603	24.655	330.7	0.313	5.61	99.9	2.3	0.19	0.0	0.00	0.20	0.07	95	213
100 ISL	16.09	16.07	33.602	24.656	330.7	0.329	5.61	99.9	2.3	0.19	0.0	0.00	0.20	0.07	100	
101	16.09	16.07	33.602	24.656	330.7	0.333	5.61	99.9	2.3	0.19	0.0	0.00	0.20	0.07	101	212
114	15.93	15.91	33.609	24.698	327.1	0.375	5.60	99.4	2.5	0.20	0.1	0.02	0.20	0.09	115	211
123	15.30	15.28	33.622	24.849	313.0	0.404	5.54	97.1	2.9	0.26	0.8	0.11	0.18	0.14	124	210
125 ISL	15.03	15.01	33.602	24.893	308.8	0.410	5.52	96.2	3.1	0.29	1.1	0.11	0.17	0.14	126	
138	13.14	13.12	33.473	25.187	280.8	0.449	5.39	90.3	5.1	0.51	3.7	0.03	0.13	0.12	139	209
150 ISL	11.98	11.96	33.514	25.443	256.4	0.481	5.20	85.1	7.4	0.71	6.8	0.03	0.09	0.09	151	
164	10.99	10.97	33.618	25.705	231.6	0.515	4.91	78.7	10.9	0.94	10.8	0.02	0.04	0.06	165	208
194	9.30	9.28	33.729	26.079	196.2	0.579	4.12	63.7	21.1	1.47	19.5	0.02	0.00	0.03	195	207
200 ISL	9.10	9.08	33.762	26.137	190.7	0.591	3.97	61.1	23.0	1.55	20.8	0.02			201	
228	8.49	8.47	33.901	26.341	171.7	0.642	3.41	51.8	30.3	1.85	25.1	0.02			229	206
250 ISL	8.20	8.17	33.953	26.426	163.9	0.679	3.20	48.3	33.9	1.96	26.8	0.02			251	
265	8.04	8.01	33.971	26.464	160.4	0.703	3.11	46.8	35.9	2.01	27.6	0.02			266	205
300 ISL	7.54	7.51	34.000	26.560	151.7	0.757	2.79	41.5	41.1	2.18	29.7	0.02			302	
323	7.21	7.18	34.008	26.613	146.8	0.792	2.57	37.9	44.8	2.29	31.0	0.02			325	204
377	6.56	6.53	34.023	26.713	137.7	0.869	2.04	29.6	55.0	2.53	34.6	0.02			379	203
400 ISL	6.32	6.28	34.042	26.760	133.4	0.900	1.72	24.9	60.3	2.67	36.3	0.02			402	
440	5.98	5.94	34.083	26.836	126.5	0.952	1.19	17.1	69.2	2.89	38.9	0.02			443	202
500 ISL	5.69	5.65	34.153	26.927	118.3	1.025	0.77	11.0	78.1	3.07	40.7	0.02			503	
516	5.61	5.57	34.172	26.952	116.1	1.044	0.66	9.4	80.5	3.12	41.2	0.02			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 27.2 N	120 31.4 W	06/02/98	0418 UTC	71 m	110 35 kn			1014.0 mb	15.9 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	16.04	16.04	33.511	24.594	333.4	0.000	5.51	98.0	4.6	0.61	1.0	0.39	0.41	0.22	0	
1	16.04	16.04	33.511	24.594	333.4	0.003	5.51	98.0	4.6	0.61	1.0	0.39	0.41	0.22	1	208
2	16.05	16.05	33.511	24.592	333.7	0.007									2	209
10 ISL	16.06	16.06	33.515	24.593	333.8	0.033	5.49	97.7	4.5	0.60	1.0	0.38	0.42	0.22	10	
11	16.06	16.06	33.516	24.594	333.8	0.037	5.49	97.7	4.5	0.60	1.0	0.38	0.42	0.22	11	207
20	16.06	16.06	33.515	24.594	334.1	0.067	5.49	97.7	4.5	0.61	1.0	0.39	0.41	0.22	20	206
30 ISL	16.07	16.07	33.516	24.592	334.5	0.100	5.50	97.9	4.4	0.60	1.0	0.39	0.41	0.21	30	
31	16.07	16.07	33.516	24.592	334.6	0.104	5.50	97.9	4.4	0.60	1.0	0.39	0.41	0.21	31	205
38	16.07	16.06	33.524	24.599	334.2	0.127	5.48	97.5	4.3	0.60	1.0	0.39	0.40	0.24	38	204
50 ISL	16.18	16.17	33.603	24.635	331.1	0.167	5.44	97.1	3.9	0.56	0.8	0.40	0.37	0.22	50	
51	16.19	16.18	33.611	24.639	330.8	0.170	5.44	97.1	3.9	0.56	0.8	0.40	0.37	0.22	51	203
60	16.21	16.20	33.659	24.672	328.0	0.200	5.38	96.1	3.9	0.59	1.0	0.43	0.33	0.28	60	202
65	16.20	16.19	33.658	24.673	328.0	0.216	5.38	96.1	3.9	0.69	1.0	0.43	0.34	0.29	65	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 48.8 W	07/02/98	0930 UTC	814 m	200 16 kn			1015.1 mb	15.6 C	12.1 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	15.52	15.52	33.597	24.777	316.0	0.000	5.47	96.3	4.0	0.46	1.7	0.19	0.73	0.34	0	
1	15.52	15.52	33.597	24.777	316.0	0.003	5.47	96.3	4.0	0.46	1.7	0.19	0.73	0.34	1	220
2	15.50	15.50	33.599	24.783	315.5	0.006									2	221
10 ISL	15.51	15.51	33.598	24.780	316.0	0.032	5.47	96.3	4.0	0.46	1.7	0.19	0.73	0.34	10	
15	15.50	15.50	33.598	24.783	315.9	0.047	5.47	96.3	4.0	0.46	1.7	0.19	0.73	0.33	15	219
20 ISL	15.50	15.50	33.598	24.783	316.1	0.063	5.46	96.1	4.0	0.46	1.7	0.19	0.76	0.32	20	
30	15.51	15.51	33.597	24.780	316.6	0.095	5.45	96.0	4.0	0.45	1.6	0.19	0.81	0.31	30	218
45	15.51	15.50	33.597	24.781	317.1	0.142	5.45	96.0	4.1	0.45	1.6	0.19	0.78	0.34	45	217
50 ISL	15.51	15.50	33.597	24.781	317.2	0.158	5.46	96.1	4.1	0.45	1.6	0.19	0.77	0.35	50	
57	15.51	15.50	33.599	24.783	317.2	0.180	5.46	96.1	4.1	0.46	1.6	0.19	0.76	0.37	57	216
65	15.50	15.49	33.599	24.785	317.3	0.206	5.44	95.8	4.0	0.46	1.7	0.19	0.81	0.37	65	215
75 ISL	15.27	15.26	33.598	24.835	312.8	0.237	5.20	91.1	5.0	0.55	3.1	0.17	0.43	0.30	75	
76	15.25	15.24	33.598	24.840	312.4	0.240	5.16	90.4	5.1	0.57	3.2	0.17	0.38	0.29	76	214
84	14.12	14.11	33.560	25.053	292.2	0.265	4.60	78.7	8.3	0.84	7.1	0.05	0.06	0.14	84	213
95	13.71	13.70	33.579	25.152	283.0	0.296	4.32	73.3	9.7	0.96	8.9	0.03	0.04	0.14	95	212
100 ISL	13.25	13.24	33.597	25.260	272.8	0.310	4.15	69.8	11.2	1.06	10.4	0.03	0.03	0.13	100	
110	12.26	12.25	33.647	25.492	250.8	0.336	3.81	62.8	14.4	1.28	13.7	0.03	0.02	0.11	111	211
122	11.59	11.57	33.706	25.664	234.6	0.365	3.47	56.4	17.0	1.45	16.4	0.02	0.01	0.07	123	210
125 ISL	11.46	11.44	33.723	25.701	231.2	0.372	3.39	54.9	17.7	1.49	17.0	0.02	0.01	0.07	126	
146	10.62	10.60	33.815	25.924	210.3	0.419	3.09	49.2	21.8	1.71	20.4	0.02	0.01	0.05	147	209
150 ISL	10.44	10.42	33.819	25.958	207.1	0.427	3.12	49.5	22.2	1.72	20.8	0.02	0.01	0.05	151	
168	9.72	9.70	33.831	26.089	194.8	0.463	3.29	51.3	24.1	1.74	22.2	0.02	0.01	0.04	169	208
199	9.12	9.10	33.942	26.274	177.7	0.521	2.92	45.0	29.7	1.95	25.2	0.02	0.00	0.03	200	207
200 ISL	9.11	9.09	33.947	26.280	177.2	0.523	2.90	44.7	29.9	1.96	25.3	0.02			201	
229	8.94	8.92	34.062	26.397	166.6	0.573	2.33	35.8	34.7	2.19	27.6	0.02			230	206
250 ISL	8.77	8.74	34.082	26.440	162.9	0.607	2.29	35.0	36.5	2.22	28.3	0.02			251	
269	8.59	8.56	34.081	26.467	160.5	0.638	2.26	34.4	37.9	2.24	28.7	0.02			271	205
300 ISL	8.22	8.19	34.097	26.537	154.3	0.687	2.12	32.0	41.3	2.33	30.1	0.02			302	
318	8.00	7.97	34.109	26.579	150.5	0.714	2.00	30.1	43.6	2.40	31.1	0.02			320	204
374	7.52	7.48	34.159	26.689	140.8	0.796	1.45	21.6	52.0	2.65	34.0	0.02			376	203
400 ISL	7.02	6.98	34.144	26.747	135.2	0.832	1.29	19.0	57.5	2.75	35.8	0.02			403	
423	6.56	6.52	34.129	26.797	130.4	0.862	1.18	17.2	62.4	2.83	37.4	0.02			426	202
500 ISL	6.00	5.96	34.153	26.889	122.3	0.959	0.81	11.6	73.3	3.03	39.9	0.02			503	
513	5.90	5.86	34.158	26.906	120.8	0.975	0.75	10.7	75.1	3.06	40.3	0.02			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 9.3 N	121 9.2 W	07/02/98	1433 UTC	2205 m	150 18 kn	270 06 11	1	1014.2 mb	15.9 C	14.0 C		3/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.57	15.57	33.387	24.604	332.4	0.000	5.69	100.2	1.8	0.26	0.0	0.01	0.28	0.08	0	
2		15.57	15.57	33.386	24.604	332.6	0.007									2	221
2		15.57	15.57	33.387	24.604	332.5	0.007	5.69	100.2	1.8	0.26	0.0	0.01	0.28	0.08	2	220
10	ISL	15.58	15.58	33.386	24.602	333.0	0.033	5.69	100.2	1.8	0.25	0.1	0.01	0.27	0.09	10	
15		15.58	15.58	33.386	24.602	333.2	0.050	5.69	100.2	1.8	0.25	0.1	0.01	0.27	0.10	15	219
20	ISL	15.58	15.58	33.386	24.602	333.3	0.067	5.69	100.2	1.8	0.25	0.1	0.01	0.27	0.10	20	
30		15.58	15.58	33.385	24.602	333.6	0.100	5.69	100.2	1.8	0.25	0.1	0.01	0.28	0.09	30	218
46		15.58	15.57	33.385	24.602	334.1	0.153	5.70	100.4	1.8	0.25	0.1	0.01	0.28	0.09	46	217
50	ISL	15.58	15.57	33.384	24.601	334.3	0.167	5.70	100.4	1.8	0.25	0.1	0.02	0.28	0.09	50	
55		15.58	15.57	33.383 D	24.601	334.5	0.183	5.70	100.4	1.8	0.25	0.1	0.02	0.28	0.09	55	216
66		15.58	15.57	33.383	24.601	334.8	0.220	5.69	100.2	1.8	0.26	0.1	0.01	0.28	0.09	66	215
75	ISL	15.09	15.08	33.345	24.680	327.5	0.250	5.68	99.0	2.2	0.30	0.4	0.13	0.23	0.10	75	
77		14.91	14.90	33.336	24.712	324.5	0.257	5.67	98.5	2.3	0.32	0.5	0.15	0.21	0.10	77	214
83		14.17	14.16	33.324	24.860	310.5	0.276	5.63	96.3	2.6	0.39	1.3	0.14	0.15	0.09	83	213
93		13.77	13.76	33.336	24.952	302.0	0.306	5.51	93.5	3.8	0.48	2.8	0.05	0.11	0.10	93	212
100	ISL	13.34	13.33	33.338	25.041	293.6	0.327	5.39	90.6	4.7	0.57	4.1	0.04	0.09	0.10	100	
108		12.76	12.75	33.352	25.167	281.7	0.350	5.20	86.4	6.1	0.69	6.0	0.03	0.08	0.09	108	211
125		11.39	11.37	33.477	25.523	248.1	0.395	4.56	73.6	11.4	1.07	12.2	0.03	0.05	0.06	126	210
145		10.15	10.13	33.611	25.845	217.6	0.442	4.06	63.9	17.7	1.44	18.2	0.03	0.02	0.04	146	209
150	ISL	9.95	9.93	33.642	25.903	212.1	0.452	3.96	62.0	18.9	1.50	19.2	0.03	0.01	0.04	151	
172		9.31	9.29	33.762	26.103	193.5	0.497	3.56	55.0	23.7	1.69	22.3	0.02	0.00	0.03	173	208
198		8.73	8.71	33.886	26.292	175.8	0.545	3.10	47.3	29.5	1.91	25.6	0.03	0.00	0.03	199	207
200	ISL	8.69	8.67	33.893	26.303	174.8	0.549	3.08	47.0	29.9	1.92	25.8	0.03			201	
229		8.23	8.21	33.972	26.436	162.6	0.597	2.88	43.5	34.5	2.04	27.7	0.03			230	206
250	ISL	7.96	7.93	33.995	26.495	157.3	0.631	2.82	42.3	37.1	2.09	28.5	0.03			251	
271		7.74	7.71	34.011	26.539	153.2	0.664	2.71	40.5	39.8	2.16	29.3	0.03			273	205
300	ISL	7.51	7.48	34.058	26.610	146.9	0.707	2.19	32.6	45.2	2.37	31.6	0.03			302	
319		7.37	7.34	34.089	26.654	143.0	0.735	1.82	27.0	48.9	2.51	33.1	0.03			321	204
372		6.93	6.90	34.136	26.753	134.2	0.808	1.30	19.1	57.8	2.75	35.7	0.02			374	203
400	ISL	6.87	6.83	34.171	26.789	131.2	0.845	1.07	15.7	60.5	2.83	36.4	0.02			403	
434		6.84	6.80	34.211	26.825	128.3	0.889	0.85	12.4	63.2	2.91	37.0	0.02			437	202
500	ISL	6.47	6.42	34.238	26.896	122.2	0.972	0.61	8.9	70.0	3.04	38.7	0.02			503	
514		6.39	6.34	34.244	26.911	120.9	0.989	0.56	8.1	71.5	3.07	39.1	0.02			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 48.4 N	121 51.2 W	08/02/98	0223 UTC	3621 m	250 24 kn			1013.5 mb	14.1 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	15.48	15.48	33.499	24.710	322.3	0.000	5.71	100.4	2.5	0.31	0.2	0.06	0.77	0.28	0	
1		15.48	15.48	33.499	24.711	322.4	0.003	5.71	100.4	2.5	0.31	0.2	0.06	0.77	0.28	1	220
3		15.47	15.47	33.498	24.712	322.3	0.010									3	221
10	ISL	15.47	15.47	33.498	24.712	322.5	0.032	5.70	100.2	2.5	0.31	0.2	0.06	0.78	0.28	10	
15		15.47	15.47	33.497	24.712	322.7	0.048	5.69	100.1	2.5	0.31	0.2	0.06	0.79	0.28	15	219
20	ISL	15.47	15.47	33.497	24.712	322.8	0.065	5.69	100.0	2.5	0.31	0.2	0.06	0.81	0.29	20	
28		15.48	15.48	33.498	24.711	323.2	0.090	5.68	99.9	2.5	0.31	0.2	0.06	0.84	0.29	28	218
30	ISL	15.48	15.48	33.498	24.711	323.2	0.097	5.68	99.9	2.5	0.31	0.2	0.06	0.84	0.29	30	
45		15.48	15.47	33.500	24.713	323.5	0.145	5.68	99.9	2.5	0.31	0.2	0.06	0.79	0.25	45	217
50	ISL	15.48	15.47	33.501	24.714	323.6	0.161	5.69	100.1	2.5	0.31	0.2	0.06	0.79	0.25	50	
60		15.48	15.47	33.504	24.716	323.7	0.194	5.69	100.1	2.5	0.32	0.3	0.06	0.76	0.25	60	216
73		15.41	15.40	33.503	24.731	322.6	0.236	5.66	99.4	2.7	0.32	0.5	0.07	0.64	0.22	73	215
75	ISL	15.38	15.37	33.511	24.744	321.4	0.242	5.60	98.3	3.0	0.35	0.9	0.08	0.55	0.20	75	
84		14.95	14.94	33.527	24.851	311.5	0.271	5.27	91.7	4.5	0.53	3.1	0.12	0.15	0.13	84	214
94		13.58	13.57	33.466	25.091	288.7	0.301	4.93	83.4	6.6	0.72	5.9	0.03	0.08	0.10	94	213
100	ISL	12.98	12.97	33.462	25.209	277.6	0.318	4.79	80.0	7.8	0.83	7.6	0.02	0.06	0.08	100	
103		12.71	12.70	33.464	25.263	272.4	0.326	4.75	78.9	8.4	0.88	8.4	0.02	0.06	0.08	103	212
113		11.69	11.68	33.461	25.455	254.3	0.352	4.76	77.4	9.9	0.98	10.5	0.02	0.08	0.10	114	211
125		11.32	11.30	33.511	25.562	244.3	0.382	4.49	72.4	12.1	1.12	12.5	0.02	0.05	0.08	126	210
138		10.73	10.71	33.556	25.702	231.1	0.413	4.28	68.2	14.8	1.26	15.1	0.01	0.04	0.06	139	209
150	ISL	10.37	10.35	33.607	25.805	221.6	0.440	4.06	64.2	16.9	1.38	17.1	0.01	0.03	0.05	151	
165		9.98	9.96	33.681	25.929	210.0	0.473	3.76	59.0	19.9	1.54	19.5	0.01	0.01	0.04	166	208
191		9.07	9.05	33.847	26.208	183.8	0.524	3.23	49.7	27.3	1.84	24.2	0.01	0.00	0.03	192	207
200	ISL	8.88	8.86	33.881	26.265	178.5	0.540	3.12	47.8	29.0	1.90	25.2	0.01			201	
218		8.58	8.56	33.927	26.347	170.9	0.572	2.96	45.1	31.8	1.98	26.5	0.01			219	206
250	ISL	8.11	8.08	33.976	26.457	160.8	0.625	2.90	43.7	35.8	2.07	28.0	0.01			251	
267		7.90	7.87	33.992	26.501	156.9	0.652	2.87	43.0	37.9	2.11	28.6	0.01			269	205
300	ISL	7.52	7.49	34.023	26.581	149.7	0.702	2.53	37.6	43.3	2.25	30.5	0.01			302	
320		7.32	7.29	34.043	26.625	145.7	0.732	2.26	33.4	46.8	2.36	31.8	0.01			322	204
376		6.95	6.91	34.132	26.747	134.8	0.810	1.42	20.8	57.0	2.71	35.4	0.01			378	203
400	ISL	6.77	6.73	34.153	26.788	131.2	0.842	1.17	17.1	61.1	2.82	36.5	0.01			403	
439		6.50	6.46	34.183	26.848	125.8	0.892	0.85	12.3	67.2	2.96	38.0	0.01			442	202
500	ISL	6.22	6.18	34.251	26.939	117.9	0.967	0.53	7.7	74.6	3.10	39.5	0.01			503	
512		6.16	6.11	34.264	26.957	116.3	0.981	0.47	6.8	76.1	3.13	39.8	0.01			515	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.3 N	122 31.7 W	08/02/98	0851 UTC	3982 m	250 11 kn			1016.1 mb	16.0 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	15.75	15.75	33.457	24.618	331.1	0.000	5.66	100.1	2.0	0.27	0.1	0.01	0.31	0.11	0	
3		15.75	15.75	33.457	24.618	331.2	0.010	5.66	100.1	2.0	0.27	0.1	0.01	0.31	0.11	3	220
10	ISL	15.75	15.75	33.457	24.618	331.4	0.033	5.67	100.2	2.0	0.27	0.1	0.01	0.31	0.11	10	
16		15.76	15.76	33.457	24.616	331.8	0.053	5.67	100.3	1.9	0.27	0.1	0.01	0.30	0.10	16	219
20	ISL	15.76	15.76	33.457	24.617	331.9	0.066	5.67	100.3	1.9	0.27	0.1	0.01	0.30	0.10	20	
30		15.76	15.76	33.457	24.617	332.2	0.100	5.66	100.1	1.9	0.27	0.1	0.01	0.30	0.09	30	218
45		15.76	15.75	33.456	24.617	332.7	0.149	5.66	100.1	1.9	0.26	0.1	0.01	0.31	0.07	45	217
50	ISL	15.76	15.75	33.456	24.617	332.8	0.166	5.66	100.1	1.9	0.26	0.1	0.01	0.29	0.12	50	
56		15.76	15.75	33.456	24.617	333.0	0.186	5.66	100.1	1.8	0.26	0.1	0.01	0.27	0.16	56	216
65		15.76	15.75	33.460	24.620	333.0	0.216	5.67	100.2	1.8	0.26	0.1	0.01	0.31	0.08	65	215
75	ISL	15.72	15.71	33.458	24.628	332.5	0.249	5.66	100.0	1.8	0.26	0.1	0.01	0.34	0.17	75	
76		15.71	15.70	33.458	24.630	332.4	0.253	5.66	100.0	1.8	0.26	0.1	0.01	0.34	0.18	76	214
87		15.58	15.57	33.469	24.668	329.1	0.289	5.65	99.5	1.7	0.29	0.2	0.03	0.35	0.15	87	213
95		14.53	14.52	33.458	24.888	308.2	0.314	5.52	95.2	2.8	0.40	1.6	0.09	0.19	0.19	95	212
100	ISL	13.74	13.73	33.434	25.034	294.3	0.329	5.37	91.1	4.1	0.53	3.5	0.08	0.15	0.21	100	
107		12.72	12.71	33.412	25.221	276.5	0.349	5.12	85.0	6.1	0.73	6.4	0.04	0.12	0.22	107	211
125	ISL	11.62	11.60	33.482	25.484	251.8	0.397	4.54	73.7	10.8	1.09	12.0	0.02	0.09	0.11	126	
126		11.59	11.57	33.488	25.495	250.8	0.400	4.51	73.2	11.1	1.11	12.3	0.02	0.09	0.10	127	210
144		10.63	10.61	33.618	25.768	225.0	0.442	3.86	61.4	16.9	1.45	17.7	0.02	0.04	0.05	145	209
150	ISL	10.36	10.34	33.670	25.856	216.8	0.456	3.67	58.0	18.8	1.54	19.2	0.02	0.03	0.04	151	
169		9.69	9.67	33.824	26.089	194.8	0.495	3.17	49.4	24.3	1.78	22.8	0.02	0.00	0.03	170	208
198		9.13	9.11	33.946	26.276	177.5	0.549	2.80	43.2	29.3	1.98	25.5	0.02	0.00	0.03	199	207
200	ISL	9.10	9.08	33.956	26.289	176.4	0.552	2.76	42.5	29.6	2.00	25.7	0.02			201	
232		8.72	8.70	34.083	26.448	161.7	0.606	2.22	33.9	34.9	2.22	28.1	0.02			233	206
250	ISL	8.46	8.43	34.111	26.511	156.0	0.635	2.08	31.6	38.2	2.31	29.3	0.02			251	
267		8.18	8.15	34.117	26.558	151.7	0.661	2.01	30.4	41.4	2.37	30.4	0.02			268	205
300	ISL	7.44	7.41	34.079	26.636	144.4	0.710	2.00	29.7	47.3	2.45	32.4	0.02			302	
319		7.06	7.03	34.059	26.674	140.9	0.737	2.00	29.4	50.5	2.50	33.4	0.02			321	204
381		6.89	6.85	34.166	26.782	131.5	0.822	1.16	17.0	59.3	2.82	36.3	0.02			383	203
400	ISL	6.83	6.79	34.183	26.804	129.7	0.846	1.03	15.1	61.3	2.87	36.8	0.02			403	
441		6.64	6.60	34.210	26.851	125.7	0.899	0.84	12.2	65.7	2.97	37.8	0.02			444	202
500	ISL	6.20	6.16	34.263	26.951	116.7	0.970	0.49	7.1	75.0	3.15	39.8	0.03			503	
511		6.12	6.07	34.273	26.969	115.1	0.983	0.42	6.0	76.7	3.18	40.2	0.03			514	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | 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	08/02/98	1828 UTC	4223 m	200 14 kn	270 08 13	1	1017.8 mb	16.8 C	14.5 C	27m 02	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	15.09	15.09	33.190	24.558	336.8	0.000	5.77	100.5	2.0	0.27	0.1	0.00	0.24	0.08	0	
1	A	15.09	15.09	33.190	24.558	336.9	0.003	5.77	100.5	2.0	0.27	0.1	0.00	0.24	0.08	1	222
2		15.09	15.09	33.190	24.558	336.9	0.007									2	223
10	ISL	15.09	15.09	33.193	24.561	336.9	0.034	5.77	100.5	2.0	0.27	0.1	0.00	0.25	0.08	10	
18	A	15.10	15.10	33.196	24.561	337.1	0.061	5.76	100.3	2.0	0.27	0.0	0.00	0.25	0.08	18	221
20	ISL	15.10	15.10	33.196	24.561	337.2	0.067	5.76	100.3	2.0	0.27	0.0	0.00	0.26	0.08	20	
28		15.11	15.11	33.198	24.561	337.4	0.094	5.76	100.4	1.9	0.27	0.0	0.00	0.28	0.09	28	220
30	ISL	15.11	15.11	33.200	24.562	337.4	0.101	5.76	100.4	1.9	0.27	0.0	0.00	0.28	0.09	30	
37	A	15.12	15.11	33.205	24.564	337.4	0.125	5.77	100.6	1.9	0.27	0.0	0.00	0.28	0.10	37	219
45		15.14	15.13	33.209	24.563	337.7	0.152	5.75	100.3	1.9	0.27	0.0	0.00	0.29	0.10	45	218
50	ISL	15.15	15.14	33.214	24.565	337.7	0.169	5.75	100.3	1.9	0.27	0.0	0.00	0.36	0.08	50	
56	A	15.16	15.15	33.221	24.569	337.6	0.189	5.75	100.3	1.9	0.27	0.0	0.00	0.42	0.06	56	217
63		14.98	14.97	33.330	24.692	326.0	0.212	5.64	98.1	2.3	0.31	0.5	0.05	0.30	0.21	63	216
72	A	14.69	14.68	33.443	24.842	312.0	0.241	5.47	94.6	3.0	0.43	1.8	0.10	0.31	0.51	72	215
75	ISL	14.37	14.36	33.438	24.906	305.9	0.250	5.39	92.6	3.6	0.49	2.7	0.09	0.28	0.49	75	
82		13.54	13.53	33.407	25.054	292.0	0.271	5.21	88.0	5.1	0.63	5.0	0.04	0.19	0.37	82	214
94		12.68	12.67	33.402	25.221	276.2	0.305	5.03	83.5	7.0	0.78	7.3	0.03	0.16	0.29	94	213
100	ISL	12.30	12.29	33.405	25.297	269.1	0.321	4.97	81.8	7.4	0.83	8.0	0.03	0.16	0.29	100	
102	A	12.17	12.16	33.410	25.325	266.4	0.327	4.94	81.1	7.7	0.86	8.4	0.03	0.16	0.29	102	212
112		11.31	11.30	33.490	25.547	245.4	0.352	4.47	72.1	11.9	1.15	13.1	0.03	0.09	0.13	113	211
124		10.69	10.68	33.549	25.703	230.7	0.381	4.21	67.0	14.8	1.30	15.8	0.03	0.05	0.07	125	210
125	ISL	10.64	10.63	33.555	25.717	229.4	0.383	4.18	66.5	15.1	1.32	16.1	0.03	0.05	0.07	126	
144		9.93	9.91	33.670	25.928	209.6	0.425	3.73	58.4	20.6	1.59	20.4	0.03	0.01	0.04	145	209
150	ISL	9.79	9.77	33.688	25.966	206.1	0.437	3.68	57.5	21.3	1.62	20.9	0.03	0.01	0.04	151	
169		9.44	9.42	33.729	26.056	197.9	0.476	3.60	55.8	22.9	1.68	21.9	0.03	0.00	0.03	170	208
199		8.75	8.73	33.844	26.256	179.3	0.532	3.38	51.6	27.9	1.82	24.5	0.03	0.00	0.03	200	207
200	ISL	8.73	8.71	33.849	26.263	178.6	0.534	3.37	51.4	28.1	1.83	24.6	0.03			201	
229		8.10	8.08	33.959	26.445	161.6	0.584	3.15	47.4	34.0	1.98	26.9	0.03			230	206
250	ISL	7.71	7.69	33.991	26.528	154.0	0.617	2.92	43.6	38.5	2.10	28.7	0.03			251	
268		7.42	7.39	34.002	26.578	149.3	0.644	2.70	40.0	42.2	2.21	30.1	0.03			270	205
300	ISL	7.04	7.01	34.021	26.646	143.2	0.691	2.34	34.4	47.8	2.38	32.2	0.03			302	
315		6.90	6.87	34.028	26.671	141.0	0.712	2.17	31.8	50.3	2.45	33.1	0.03			317	204
378		6.40	6.37	34.065	26.767	132.5	0.798	1.49	21.6	60.8	2.73	36.7	0.04			380	203
400	ISL	6.29	6.25	34.091	26.802	129.4	0.827	1.25	18.1	64.2	2.82	37.7	0.04			403	
439		6.14	6.10	34.143	26.863	124.1	0.876	0.88	12.7	69.7	2.97	39.1	0.04			442	202
500	ISL	5.91	5.87	34.214	26.948	116.6	0.950	0.54	7.7	77.1	3.12	40.5	0.04			503	
517		5.84	5.80	34.234	26.973	114.4	0.969	0.45	6.4	79.2	3.16	40.9	0.04			520	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 48.8 N	123 55.6 W	09/02/98	0042 UTC	4218 m	270 30 kn	270 15 06	1	1017.6 mb	16.0 C	13.3 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	15.60	15.60	33.376	24.589	333.9	0.000	5.78	101.8	2.2	0.23	0.0	0.00	0.24	0.13	0	
1		15.60	15.60	33.387	24.598	333.1	0.003									1	221
2		15.60	15.60	33.376	24.589	334.0	0.007	5.78	101.8	2.2	0.23	0.0	0.00	0.24	0.13	2	220
10	ISL	15.61	15.61	33.378	24.589	334.2	0.033	5.74	101.1	2.2	0.23	0.0	0.00	0.26	0.10	10	
14		15.61	15.61	33.379	24.590	334.3	0.047	5.72	100.8	2.2	0.23	0.0	0.00	0.28	0.08	14	219
20	ISL	15.61	15.61	33.379	24.590	334.4	0.067	5.71	100.6	2.2	0.23	0.0	0.00	0.28	0.08	20	
29		15.61	15.61	33.378	24.589	334.8	0.097	5.70	100.4	2.1	0.23	0.0	0.00	0.28	0.10	29	218
30	ISL	15.61	15.61	33.378	24.590	334.8	0.100	5.70	100.4	2.1	0.23	0.0	0.00	0.28	0.10	30	
44		15.61	15.60	33.377	24.589	335.3	0.147	5.69	100.2	2.1	0.23	0.0	0.00	0.28	0.09	44	217
50	ISL	15.61	15.60	33.377	24.589	335.4	0.167	5.72	100.8	2.1	0.23	0.0	0.00	0.28	0.09	50	
59		15.62	15.61	33.376	24.587	336.0	0.198	5.77	101.7	2.1	0.23	0.0	0.00	0.28	0.08	59	216
74		15.62	15.61	33.377	24.588	336.3	0.248	5.71	100.6	2.0	0.23	0.0	0.00	0.29	0.08	74	215
75	ISL	15.62	15.61	33.378	24.589	336.3	0.251	5.71	100.6	2.0	0.23	0.0	0.00	0.29	0.08	75	
86		15.61	15.60	33.385	24.597	335.9	0.288	5.71	100.6	2.0	0.23	0.0	0.00	0.30	0.09	86	214
94		15.57	15.56	33.405	24.621	333.8	0.315	5.67	99.8	2.1	0.23	0.2	0.02	0.23	0.12	94	213
100	ISL	14.94	14.93	33.385	24.744	322.2	0.335	5.66	98.4	2.6	0.29	0.7	0.06	0.24	0.17	100	
105		14.31	14.29	33.373	24.869	310.3	0.351	5.63	96.6	3.1	0.35	1.4	0.09	0.25	0.21	105	212
116		13.46	13.44	33.423	25.083	290.1	0.384	5.44	91.8	4.5	0.49	3.3	0.03	0.20	0.19	117	211
123		12.70	12.68	33.426	25.236	275.5	0.403	5.13	85.2	6.6	0.71	6.4	0.02	0.04	0.04	124	210
125	ISL	12.52	12.50	33.434	25.277	271.6	0.409	5.06	83.7	7.2	0.76	7.2	0.02	0.04	0.04	126	
138		11.55	11.53	33.507	25.517	249.0	0.443	4.69	76.0	11.1	1.04	11.8	0.01	0.07	0.07	139	209
150	ISL	10.82	10.80	33.571	25.698	231.8	0.472	4.32	69.0	14.6	1.26	15.3	0.00	0.05	0.05	151	
163		10.17	10.15	33.637	25.863	216.3	0.501	3.99	62.8	18.1	1.44	18.2	0.00	0.02	0.01	164	208
193		9.02	9.00	33.767	26.153	189.0	0.561	3.81	58.5	23.8	1.63	21.6	0.00	0.00	0.02	194	207
200	ISL	8.91	8.89	33.812	26.206	184.1	0.575	3.61	55.3	25.6	1.71	22.7	0.00			201	
230		8.63	8.61	33.983	26.384	167.7	0.627	2.74	41.8	33.2	2.07	27.3	0.00			231	206
250	ISL	8.26	8.23	34.021	26.470	159.7	0.660	2.56	38.7	36.9	2.18	28.8	0.00			251	
270		7.88	7.85	34.033	26.536	153.6	0.691	2.49	37.3	40.2	2.25	29.8	0.00			271	205
300	ISL	7.49	7.46	34.054	26.609	147.0	0.736	2.25	33.4	45.0	2.38	31.6	0.00			302	
317		7.33	7.30	34.065	26.641	144.2	0.761	2.08	30.8	47.7	2.46	32.6	0.00			319	204
377		7.02	6.98	34.147	26.749	134.7	0.845	1.28	18.8	57.3	2.77	35.5	0.00			379	203
400	ISL	6.86	6.82	34.159	26.781	131.9	0.876	1.11	16.3	60.4	2.84	36.4	0.00			402	
437		6.57	6.53	34.171	26.829	127.6	0.924	0.91	13.2	65.4	2.94	37.6	0.00			440	202
500	ISL	6.03	5.99	34.202	26.924	119.0	1.001	0.62	8.9	75.1	3.10	39.7	0.00			503	
512		5.93	5.89	34.209	26.942	117.4	1.015	0.56	8.0	77.0	3.13	40.1	0.00			515	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 16.7 N	120 0.9 W	05/02/98	2242 UTC	575 m	090 22 kn	080 04 05	2	1016.8 mb	16.0 C	13.5 C	06m 04	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	15.91	15.91	33.662	24.740	319.6	0.000	5.50	97.7	3.4	0.43	1.1	0.25	0.84	0.38	0	
1	A	15.91	15.91	33.662	24.740	319.6	0.003	5.50	97.7	3.4	0.43	1.1	0.25	0.84	0.38	1	224
10		15.87	15.87	33.651	24.741	319.8	0.032	5.50	97.6	3.4	0.43	1.2	0.25	0.81	0.37	10	223
20	ISL	15.90	15.90	33.665	24.745	319.7	0.064	5.50	97.6	3.4	0.43	1.2	0.25	0.85	0.37	20	
21		15.90	15.90	33.666	24.746	319.6	0.067	5.50	97.6	3.4	0.43	1.2	0.25	0.85	0.37	21	222
30		15.82	15.82	33.637	24.742	320.3	0.096	5.48	97.1	3.4	0.44	1.3	0.25	0.75	0.35	30	221
40		15.78	15.77	33.633	24.748	320.0	0.128	5.48	97.0	3.4	0.44	1.3	0.26	0.68	0.35	40	220
50		15.70	15.69	33.616	24.753	319.8	0.160	5.43	96.0	3.6	0.46	1.6	0.27	0.54	0.31	50	219
60		15.59	15.58	33.619	24.780	317.6	0.192	5.30	93.5	4.2	0.51	2.4	0.30	0.29	0.29	60	218
70		15.52	15.51	33.615	24.793	316.7	0.224	5.26	92.6	4.4	0.54	2.6	0.30	0.27	0.25	70	217
75	ISL	14.96	14.95	33.600	24.905	306.1	0.239	4.97	86.5	5.9	0.67	4.6	0.22	0.20	0.21	75	
84		13.81	13.80	33.589	25.139	283.9	0.266	4.36	74.2	9.2	0.94	8.8	0.06	0.06	0.14	84	216
99		13.02	13.01	33.643	25.341	265.0	0.307	3.92	65.6	11.7	1.15	12.0	0.03	0.03	0.09	99	215
100	ISL	13.00	12.99	33.644	25.346	264.6	0.309	3.91	65.4	11.8	1.15	12.1	0.03	0.03	0.09	100	
118		12.77	12.75	33.664	25.407	259.2	0.357	3.80	63.3	12.8	1.22	12.9	0.03	0.02	0.09	119	214
125	ISL	12.44	12.42	33.690	25.491	251.3	0.374	3.66	60.5	14.1	1.30	14.2	0.03	0.02	0.08	126	
139		11.70	11.68	33.754	25.681	233.4	0.408	3.34	54.4	17.4	1.50	17.1	0.03	0.01	0.06	140	213
150	ISL	11.28	11.26	33.790	25.787	223.6	0.434	3.12	50.4	19.7	1.62	18.9	0.03	0.01	0.06	151	
169		10.70	10.68	33.859	25.944	208.9	0.475	2.74	43.7	23.6	1.81	21.7	0.03	0.01	0.06	170	212
197		10.10	10.08	34.024	26.177	187.3	0.530	2.08	32.8	29.9	2.13	25.7	0.02	0.00	0.04	198	211
200	ISL	10.05	10.03	34.035	26.194	185.7	0.536	2.04	32.1	30.4	2.15	26.0	0.02			201	
227		9.66	9.63	34.107	26.316	174.6	0.584	1.77	27.6	33.9	2.29	27.7	0.02			228	210
250	ISL	9.38	9.35	34.143	26.391	167.9	0.624	1.62	25.1	36.6	2.38	28.9	0.02			251	
267		9.18	9.15	34.161	26.437	163.7	0.652	1.53	23.6	38.5	2.43	29.6	0.02			269	209
300	ISL	8.80	8.77	34.187	26.518	156.5	0.705	1.33	20.4	42.7	2.54	30.9	0.02			302	
318		8.60	8.57	34.197	26.558	153.0	0.733	1.21	18.5	45.3	2.61	31.6	0.02			320	208
379		7.94	7.90	34.224	26.679	142.1	0.823	0.77	11.6	56.5	2.87	33.6	0.02			381	207
400	ISL	7.65	7.61	34.230	26.726	137.8	0.852	0.68	10.1	61.1	2.95	33.8	0.02			403	
437		7.18	7.14	34.240	26.801	130.9	0.902	0.52	7.7	70.3	3.10	34.1	0.02			440	206
500	ISL	6.83	6.78	34.258	26.864	125.6	0.982	0.09	1.3	89.6	3.39	29.8	0.02			503	
514		6.75	6.70	34.258	26.875	124.7	1.000	0.03	0.4	93.9	3.45	28.8	0.02			517	205
522		6.67	6.62	34.255	26.883	124.0	1.010	0.03	0.4	103.6	3.58	23.2	0.02			526	204
531		6.64	6.59	34.257	26.889	123.5	1.021	0.03	0.4	108.6	3.68	19.6	0.02			535	203
552		6.63	6.58	34.256	26.890	123.8	1.047	0.01	0.1	110.9	3.72	18.0	0.02			556	202
566		6.63	6.58	34.259	26.892	123.8	1.064	0.01	0.1	110.9	3.72	17.9	0.02			570	201

A) SANTA BARBARA BASIN STATION.

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 13.7 N	119 24.7 W	05/02/98	1905 UTC	35 m		270 04 07	2	1020.1 mb	16.0 C	13.5 C	03m 04	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	16.72	16.72	33.740	24.614	331.5	0.000	5.41	97.7	3.2	0.49	0.8	0.51	0.58	0.28	0	
1 A	16.72	16.72	33.740	24.614	331.6	0.003	5.41	97.7	3.2	0.49	0.8	0.51	0.58	0.28	1	208
2 A	16.73	16.73	33.734	24.607	332.3	0.007	5.41	97.7	3.2	0.49	0.8	0.51	0.59	0.27	2	207
3 A	16.71	16.71	33.734	24.612	331.8	0.010	5.42	97.8	3.2	0.49	0.8	0.51	0.60	0.27	3	206
6 A	16.71	16.71	33.734	24.612	331.9	0.020	5.42	97.8	3.2	0.50	0.8	0.51	0.60	0.28	6	205
7 A	16.71	16.71	33.735	24.613	331.9	0.023	5.41	97.6	3.2	0.50	0.8	0.51	0.61	0.28	7	204
10 ISL	16.71	16.71	33.735	24.613	332.0	0.033	5.41	97.6	3.1	0.49	0.8	0.51	0.58	0.28	10	
11 A	16.71	16.71	33.735	24.613	332.0	0.037	5.41	97.6	3.1	0.49	0.8	0.51	0.56	0.28	11	203
19	16.73	16.73	33.754	24.623	331.3	0.063	5.40	97.5	3.0	0.49	0.8	0.52	0.48	0.27	19	202
20 ISL	16.74	16.74	33.758	24.624	331.3	0.066	5.40	97.5	3.0	0.50	0.8	0.52	0.47	0.27	20	
27	16.77	16.77	33.787	24.639	330.0	0.089	5.38	97.2	2.9	0.55	0.7	0.53	0.38	0.28	27	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 30.6 W	05/02/98	1416 UTC	125 m	060 06 kn			1017.6 mb	14.8 C	12.5 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	16.39	16.39	33.553	24.547	337.9	0.000	5.45	97.6	3.7	0.51	1.1	0.48	0.49	0.29	0	
2	16.39	16.39	33.553	24.547	338.0	0.007	5.45	97.6	3.7	0.51	1.1	0.48	0.49	0.29	2	211
3	16.40	16.40	33.551	24.543	338.4	0.010									3	212
10 ISL	16.43	16.43	33.566	24.548	338.2	0.034	5.44	97.5	3.6	0.51	1.1	0.47	0.50	0.30	10	
11	16.43	16.43	33.567	24.549	338.1	0.037	5.44	97.5	3.6	0.51	1.1	0.47	0.50	0.30	11	210
20 ISL	16.66	16.66	33.795	24.671	326.8	0.067	5.39	97.2	2.6	0.44	1.0	0.29	0.55	0.28	20	
21	16.68	16.68	33.821	24.686	325.4	0.070	5.39	97.3	2.5	0.43	1.0	0.27	0.56	0.28	21	209
30 ISL	16.65	16.65	33.821	24.693	325.0	0.100	5.40	97.4	2.6	0.43	1.0	0.29	0.54	0.31	30	
31	16.65	16.64	33.821	24.693	325.0	0.103	5.40	97.4	2.6	0.43	1.0	0.29	0.54	0.31	31	208
40	16.56	16.55	33.806	24.703	324.4	0.132	5.38	96.8	2.8	0.45	1.0	0.29	0.55	0.29	40	207
50	16.24	16.23	33.725	24.715	323.5	0.165	5.40	96.5	3.3	0.43	1.1	0.29	0.54	0.28	50	206
59	16.02	16.01	33.727	24.767	318.9	0.193	5.19	92.4	4.1	0.52	2.3	0.27	0.31	0.22	59	205
71	15.85	15.84	33.707	24.790	317.0	0.232	5.14	91.2	4.5	0.54	2.6	0.27	0.28	0.22	71	204
75 ISL	15.85	15.84	33.715	24.797	316.5	0.244	5.11	90.6	4.6	0.55	2.8	0.26	0.27	0.22	75	
79	15.84	15.83	33.725	24.807	315.7	0.257	5.08	90.1	4.8	0.57	3.1	0.24	0.25	0.21	79	203
96	15.34	15.33	33.704	24.902	307.1	0.310	4.77	83.7	6.1	0.71	4.9	0.17	0.17	0.17	96	202
100 ISL	15.09	15.07	33.699	24.953	302.3	0.322	4.62	80.7	6.8	0.77	5.9	0.15	0.14	0.16	100	
111	14.39	14.37	33.691	25.098	288.7	0.355	4.22	72.7	8.8	0.94	8.6	0.09	0.07	0.13	112	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 52.9 N	120 8.4 W	05/02/98	0749 UTC	96 m	200 10 kn			1015.9 mb	15.1 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	15.98	15.98	33.668	24.729	320.6	0.000	5.43	96.6	3.4	0.46	1.2	0.17	0.50	0.30	0	
1	15.98	15.98	33.668	24.729	320.6	0.003	5.43	96.6	3.4	0.46	1.2	0.17	0.50	0.30	1	210
1	15.98	15.98	33.667	24.728	320.7	0.003									1	211
10	15.96	15.96	33.671	24.736	320.2	0.032	5.42	96.3	3.4	0.46	1.2	0.17	0.53	0.29	10	209
20	15.96	15.96	33.667	24.733	320.8	0.064	5.43	96.5	3.4	0.45	1.2	0.17	0.52	0.31	20	208
30	15.96	15.96	33.670	24.736	320.9	0.096	5.43	96.5	3.4	0.46	1.2	0.17	0.49	0.31	30	207
41	15.95	15.94	33.668	24.737	321.2	0.132	5.41	96.1	3.4	0.46	1.4	0.17	0.52	0.29	41	206
49	15.68	15.67	33.655	24.788	316.5	0.157	5.22	92.3	4.4	0.54	2.6	0.20	0.40	0.32	49	205
50 ISL	15.68	15.67	33.655	24.788	316.6	0.160	5.22	92.3	4.4	0.54	2.6	0.20	0.40	0.32	50	
60	15.63	15.62	33.650	24.795	316.1	0.192	5.21	92.0	4.6	0.56	2.7	0.21	0.36	0.36	60	204
69	15.60	15.59	33.650	24.802	315.8	0.220	5.19	91.6	4.6	0.58	2.7	0.21	0.35	0.38	69	203
75 ISL	15.57	15.56	33.655	24.813	314.9	0.239	5.15	90.8	4.8	0.59	3.0	0.20	0.34	0.44	75	
78	15.53	15.52	33.657	24.824	314.0	0.249	5.12	90.2	4.9	0.60	3.2	0.20	0.33	0.47	78	202
92	14.99	14.98	33.659	24.944	302.9	0.292	4.84	84.4	6.2	0.72	4.9	0.18	0.25	0.41	92	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 45.3 N	120 24.5 W	05/02/98	0402 UTC	989 m	250 08 kn			1015.9 mb	15.0 C	12.8 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	15.52	15.52	33.462	24.673	325.9	0.000	5.70	100.3	2.3	0.31	0.2	0.06	0.55	0.20	0	
2		15.54	15.54	33.466	24.672	326.1	0.007									2	221
2		15.52	15.52	33.462	24.673	326.0	0.007	5.70	100.3	2.3	0.31	0.2	0.06	0.55	0.20	2	220
10	ISL	15.53	15.53	33.462	24.671	326.4	0.033	5.72	100.7	2.3	0.31	0.2	0.06	0.54	0.20	10	
16		15.54	15.54	33.463	24.670	326.7	0.052	5.73	100.9	2.3	0.31	0.2	0.06	0.53	0.20	16	219
20	ISL	15.55	15.55	33.467	24.671	326.7	0.065	5.72	100.7	2.3	0.31	0.2	0.06	0.54	0.20	20	
30	ISL	15.58	15.58	33.478	24.673	326.8	0.098	5.69	100.3	2.3	0.31	0.2	0.07	0.59	0.22	30	
31		15.58	15.58	33.479	24.674	326.8	0.101	5.69	100.3	2.3	0.31	0.2	0.07	0.60	0.22	31	218
44		15.60	15.59	33.505	24.690	325.7	0.144	5.73	101.0	2.4	0.32	0.3	0.08	0.67	0.25	44	217
50	ISL	15.60	15.59	33.507	24.692	325.7	0.163	5.70	100.5	2.4	0.32	0.3	0.09	0.64	0.25	50	
56		15.60	15.59	33.513	24.697	325.4	0.183	5.65	99.6	2.4	0.32	0.4	0.11	0.58	0.26	56	216
65		15.53	15.52	33.527	24.723	323.2	0.212	5.60	98.6	2.7	0.34	0.6	0.14	0.45	0.30	65	215
73		14.40	14.39	33.437	24.899	306.6	0.237	5.39	92.7	3.8	0.49	2.7	0.07	0.20	0.18	73	214
75	ISL	14.13	14.12	33.413	24.937	303.0	0.243	5.38	92.0	4.1	0.52	3.1	0.06	0.19	0.17	75	
83		13.31	13.30	33.361	25.064	290.9	0.267	5.29	88.9	5.3	0.62	4.7	0.03	0.13	0.15	83	213
94		13.24	13.23	33.475	25.167	281.5	0.298	4.79	80.5	7.9	0.84	7.7	0.03	0.08	0.14	94	212
100	ISL	12.93	12.92	33.493	25.243	274.4	0.315	4.70	78.4	8.4	0.88	8.4	0.03	0.07	0.13	100	
109		12.31	12.30	33.502	25.370	262.4	0.339	4.63	76.3	9.1	0.93	9.3	0.04	0.06	0.12	110	211
125	ISL	11.25	11.23	33.552	25.606	240.1	0.379	4.35	70.1	13.1	1.17	13.5	0.03	0.04	0.07	126	
126		11.19	11.17	33.556	25.620	238.8	0.382	4.33	69.7	13.4	1.19	13.8	0.03	0.04	0.07	127	210
147		10.28	10.26	33.642	25.847	217.5	0.430	4.04	63.8	20.0	1.39	17.4	0.02	0.03	0.04	148	209
150	ISL	10.21	10.19	33.657	25.871	215.2	0.436	3.98	62.7	20.3	1.42	17.9	0.02	0.03	0.04	151	
169		9.88	9.86	33.768	26.014	202.0	0.476	3.54	55.4	22.2	1.64	20.8	0.02	0.01	0.04	170	208
198		9.27	9.25	33.995	26.292	176.1	0.531	2.71	41.9	31.1	2.05	26.0	0.01	0.00	0.03	199	207
200	ISL	9.24	9.22	34.002	26.302	175.1	0.534	2.70	41.7	31.4	2.06	26.2	0.01			201	
229		8.75	8.73	34.048	26.416	164.7	0.583	2.48	37.9	34.7	2.16	27.7	0.01			230	206
250	ISL	8.28	8.25	34.037	26.480	158.8	0.617	2.56	38.7	37.2	2.17	28.6	0.01			251	
272		7.87	7.84	34.029	26.535	153.8	0.652	2.60	39.0	40.0	2.20	29.5	0.01			274	205
300	ISL	7.91	7.88	34.107	26.590	149.1	0.694	2.13	32.0	43.8	2.38	30.9	0.01			302	
321		7.94	7.91	34.158	26.626	146.1	0.725	1.70	25.5	46.7	2.53	32.0	0.01			323	204
379		7.54	7.50	34.203	26.721	137.9	0.808	1.18	17.6	54.2	2.76	34.5	0.01			381	203
400	ISL	7.36	7.32	34.214	26.755	134.8	0.836	1.05	15.6	57.3	2.83	35.4	0.01			403	
429		7.09	7.05	34.225	26.802	130.7	0.875	0.87	12.8	61.9	2.93	36.6	0.01			432	202
500	ISL	6.37	6.32	34.247	26.916	120.2	0.964			73.4	3.12	39.2	0.01			503	
508		6.29	6.24	34.250	26.929	119.0	0.973			74.7	3.14	39.5	0.01			511	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 34.2 N	120 44.8 W	04/02/98	2305 UTC	1371 m	280 06 kn	290 09 07	1	1013.1 mb	16.0 C	13.9 C	26m 02	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	15.26	15.26	33.277	24.588	334.0	0.000	5.76	100.7	2.3	0.29	0.0	0.01	0.28	0.10	0	
3		15.26	15.26	33.277	24.588	334.1	0.010	5.76	100.7	2.3	0.29	0.0	0.01	0.28	0.10	3	220
3		15.26	15.26	33.277	24.588	334.1	0.010									3	221
10	ISL	15.22	15.22	33.280	24.599	333.2	0.033	5.77	100.8	2.3	0.29	0.0	0.01	0.29	0.10	10	
14		15.19	15.19	33.282	24.608	332.5	0.047	5.77	100.8	2.3	0.29	0.0	0.01	0.30	0.10	14	219
20	ISL	15.19	15.19	33.285	24.610	332.5	0.067	5.77	100.8	2.3	0.29	0.0	0.01	0.31	0.11	20	
29		15.19	15.19	33.289	24.614	332.5	0.097	5.76	100.6	2.2	0.29	0.1	0.02	0.33	0.12	29	218
30	ISL	15.19	15.19	33.290	24.614	332.4	0.100	5.76	100.6	2.2	0.29	0.1	0.02	0.33	0.12	30	
45		15.20	15.19	33.300	24.620	332.3	0.150	5.76	100.6	2.2	0.30	0.1	0.02	0.35	0.17	45	217
50	ISL	15.22	15.21	33.306	24.621	332.4	0.166	5.75	100.5	2.1	0.30	0.1	0.03	0.38	0.16	50	
54		15.23	15.22	33.310	24.622	332.4	0.180	5.73	100.1	2.1	0.30	0.1	0.03	0.40	0.15	54	216
64		15.41	15.40	33.432	24.677	327.6	0.213	5.68	99.7	2.4	0.32	0.2	0.15	0.37	0.23	64	215
74		15.53	15.52	33.535	24.730	322.8	0.245	5.59	98.4	2.7	0.36	0.4	0.33	0.26	0.20	74	214
75	ISL	15.51	15.50	33.531	24.731	322.7	0.248	5.59	98.4	2.7	0.36	0.5	0.33	0.26	0.20	75	
85		15.33	15.32	33.530	24.770	319.3	0.281	5.50	96.4	3.2	0.41	1.2	0.32	0.21	0.20	85	213
95		14.38	14.37	33.495	24.948	302.5	0.312	5.10	87.7	5.3	0.63	4.4	0.08	0.11	0.14	95	212
100	ISL	13.94	13.93	33.468	25.019	295.8	0.327	5.03	85.7	5.8	0.69	5.3	0.06	0.11	0.15	100	
111		13.11	13.09	33.432	25.160	282.5	0.358	4.93	82.6	6.9	0.79	6.8	0.03	0.10	0.17	111	211
125		12.40	12.38	33.484	25.339	265.7	0.397	4.56	75.2	9.8	0.99	10.1	0.02	0.06	0.10	126	210
144		11.09	11.07	33.545	25.630	238.2	0.445	4.22	67.7	14.4	1.30	15.3	0.01	0.03	0.06	145	209
150	ISL	10.68	10.66	33.589	25.737	228.1	0.459	4.05	64.5	16.5	1.40	17.1	0.01	0.02	0.05	151	
168		9.70	9.68	33.751	26.030	200.4	0.497	3.47	54.1	22.9	1.70	21.9	0.01	0.00	0.04	169	208
198		9.55	9.53	34.005	26.254	179.8	0.554	2.39	37.2	30.4	2.10	26.1	0.00	0.00	0.03	199	207
200	ISL	9.55	9.53	34.015	26.262	179.1	0.558	2.35	36.6	30.7	2.12	26.3	0.00			201	
226		9.50	9.47	34.109	26.344	171.8	0.603	2.01	31.3	34.2	2.26	27.9	0.00			227	206
250	ISL	9.22	9.19	34.159	26.429	164.2	0.644	1.80	27.8	36.9	2.37	28.9	0.00			251	
268		8.91	8.88	34.171	26.488	158.8	0.673	1.74	26.7	38.9	2.42	29.5	0.00			269	205
300	ISL	8.13	8.10	34.120	26.568	151.3	0.722	1.97	29.7	42.8	2.42	30.7	0.00			302	
318		7.72	7.69	34.092	26.607	147.7	0.749	2.08	31.1	45.2	2.42	31.4	0.00			320	204
379		7.53	7.49	34.205	26.724	137.6	0.836	1.20	17.9	54.6	2.77	34.4	0.00			381	203
400	ISL	7.33	7.29	34.213	26.759	134.5	0.865	1.06	15.7	57.6	2.84	35.4	0.00			402	
440		6.90	6.86	34.215	26.820	128.9	0.918	0.88	12.9	63.2	2.93	37.0	0.00			443	202
500	ISL	6.50	6.45	34.247	26.899	121.9	0.993	0.60	8.7	70.9	3.09	38.9	0.00			503	
509		6.44	6.39	34.252	26.911	120.9	1.004	0.56	8.1	72.1	3.11	39.2	0.00			512	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 14.5 N	121 26.6 W	04/02/98	1442 UTC	3797 m	280 20 kn	300 05 06	1	1009.0 mb	15.0 C	12.0 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	15.60	15.60	33.496	24.682	325.1	0.000	5.64	99.4	2.1	0.29	0.2	0.02	0.44	0.17	0	
2	15.60	15.60	33.496	24.682	325.2	0.007	5.64	99.4	2.1	0.29	0.2	0.02	0.44	0.17	2	220
3	15.60	15.60	33.497	24.682	325.1	0.010									3	221
10 ISL	15.61	15.61	33.496	24.680	325.6	0.033	5.65	99.6	2.2	0.29	0.2	0.03	0.45	0.18	10	
15	15.62	15.62	33.496	24.678	325.9	0.049	5.65	99.6	2.2	0.29	0.2	0.03	0.46	0.18	15	219
20 ISL	15.62	15.62	33.496	24.678	326.1	0.065	5.65	99.6	2.2	0.29	0.2	0.03	0.46	0.18	20	
30 ISL	15.61	15.61	33.497	24.681	326.1	0.098	5.65	99.6	2.2	0.29	0.2	0.03	0.45	0.18	30	
31	15.61	15.61	33.497	24.681	326.1	0.101	5.65	99.6	2.2	0.29	0.2	0.03	0.45	0.18	31	218
44	15.62	15.61	33.496	24.679	326.7	0.143	5.65	99.6	2.3	0.29	0.2	0.03	0.46	0.17	44	217
50 ISL	15.62	15.61	33.498	24.680	326.8	0.163	5.65	99.6	2.3	0.29	0.2	0.03	0.45	0.16	50	
60	15.62	15.61	33.502	24.684	326.8	0.196	5.66	99.8	2.4	0.29	0.2	0.03	0.44	0.16	60	216
75	15.60	15.59	33.496	24.684	327.2	0.245	5.62	99.1	2.5	0.30	0.4	0.03	0.44	0.17	75	215
85	15.25	15.24	33.492	24.759	320.4	0.277	5.46	95.6	3.1	0.39	1.5	0.04	0.30	0.14	85	214
95	13.72	13.71	33.464	25.061	291.6	0.308	4.83	81.9	7.0	0.75	6.4	0.03	0.07	0.09	95	213
100 ISL	13.32	13.31	33.469	25.146	283.6	0.322	4.70	79.1	8.0	0.83	7.6	0.02	0.06	0.08	100	
105	13.07	13.06	33.479	25.204	278.2	0.336	4.62	77.3	8.7	0.88	8.4	0.02	0.05	0.07	105	212
115	12.75	12.73	33.505	25.288	270.5	0.364	4.46	74.2	10.0	0.99	9.8	0.02	0.04	0.07	116	211
125	12.14	12.12	33.582	25.465	253.7	0.390	4.08	67.0	12.7	1.17	12.6	0.02	0.02	0.05	126	210
138	11.63	11.61	33.641	25.607	240.5	0.422	3.77	61.3	15.2	1.32	14.9	0.02	0.01	0.04	139	209
150 ISL	11.20	11.18	33.715	25.743	227.7	0.450	3.43	55.2	18.0	1.48	17.4	0.02	0.01	0.04	151	
166	10.75	10.73	33.813	25.900	213.1	0.485	3.01	48.0	21.7	1.69	20.4	0.02	0.01 A	0.04 A	167	208
193	10.40	10.38	33.916	26.042	200.2	0.541	2.59	41.0	25.6	1.89	23.1	0.02	0.00	0.05	194	207
200 ISL	10.30	10.28	33.944	26.081	196.6	0.555	2.49	39.4	26.7	1.94	23.7	0.02			201	
229	9.88	9.85	34.042	26.229	183.0	0.610	2.19	34.3	30.6	2.11	25.9	0.02			230	206
250 ISL	9.65	9.62	34.079	26.297	176.9	0.648	2.11	32.9	32.3	2.17	26.7	0.02			251	
268	9.41	9.38	34.096	26.349	172.2	0.679	2.08	32.3	33.9	2.21	27.4	0.02			269	205
300 ISL	8.56	8.53	34.105	26.491	158.9	0.732	2.05	31.2	39.3	2.31	29.5	0.02			302	
317	8.12	8.09	34.111	26.563	152.1	0.759	2.03	30.6	42.5	2.37	30.6	0.02			319	204
379	7.67	7.63	34.188	26.690	140.9	0.849	1.33	19.9	51.6	2.66	33.5	0.02			381	203
400 ISL	7.45	7.41	34.205	26.735	136.8	0.879	1.13	16.8	55.2	2.76	34.6	0.02			402	
436	7.05	7.01	34.225	26.807	130.2	0.927	0.86	12.7	61.5	2.90	36.5	0.02			439	202
500 ISL	6.43	6.38	34.232	26.896	122.1	1.007	0.63	9.1	70.7	3.05	38.8	0.02			503	
515	6.29	6.24	34.235	26.917	120.2	1.026	0.58	8.4	72.9	3.08	39.4	0.02			518	201

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

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 55.8 N	122 8.9 W	03/02/98	2147 UTC	4284 m	290 30 kn	290 20 05	1	998.0 mb	15.2 C	12.1 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	16.02	16.02	33.468	24.566	336.1	0.000	5.65	100.4	2.3	0.26	0.0	0.01	0.21	0.07	0	
1	16.02	16.02	33.468	24.566	336.1	0.003	5.65	100.4	2.3	0.26	0.0	0.01	0.21	0.07	1	220
4	16.02	16.02	33.466	24.564	336.4	0.013	5.65	100.4	2.3	0.26	0.0	0.01	0.20	0.07	4	219
10 ISL	16.02	16.02	33.477	24.573	335.7	0.034	5.65	100.4	2.3	0.27	0.1	0.01	0.21	0.07	10	
12	16.02	16.02	33.479	24.575	335.7	0.040	5.65	100.4	2.3	0.27	0.1	0.01	0.21	0.07	12	218
20 ISL	16.02	16.02	33.475	24.572	336.2	0.067	5.64	100.2	2.3	0.26	0.1	0.01	0.21	0.07	20	
30 ISL	16.02	16.02	33.468	24.567	337.0	0.101	5.63	100.1	2.3	0.25	0.1	0.01	0.21	0.07	30	
31	16.02	16.02	33.467	24.566	337.1	0.104	5.63	100.1	2.3	0.25	0.1	0.01	0.21	0.07	31	217
43	16.00	15.99	33.463	24.568	337.3	0.145	5.65	100.4	2.3	0.26	0.1	0.01	0.22	0.07	43	216
50 ISL	15.98	15.97	33.467	24.576	336.8	0.168	5.65	100.3	2.3	0.26	0.1	0.01	0.23	0.07	50	
60	15.92	15.91	33.471	24.593	335.5	0.202	5.65	100.2	2.3	0.27	0.0	0.02	0.25	0.09	60	215
73	15.77	15.76	33.460	24.618	333.4	0.245	5.65	99.9	2.3	0.28	0.1	0.05	0.28	0.14	73	214
75 ISL	15.53	15.52	33.451	24.665	329.0	0.252	5.62	98.9	2.5	0.31	0.5	0.06	0.27	0.17	75	
83	14.58	14.57	33.425	24.852	311.4	0.278	5.50	94.9	3.5	0.43	1.9	0.09	0.21	0.27	83	213
94	14.41	14.40	33.420	24.884	308.6	0.312	5.48	94.3	3.5	0.45	2.2	0.07	0.24	0.21	94	212
99	13.96	13.95	33.406	24.967	300.7	0.327	5.44	92.7	3.7	0.48	2.7	0.05	0.22	0.21	99	211
100 ISL	13.88	13.87	33.405	24.983	299.2	0.330	5.41	92.0	3.9	0.50	3.0	0.05	0.22	0.21	100	
113	12.77	12.75	33.420	25.218	277.0	0.367	4.95	82.3	7.3	0.81	7.5	0.03	0.16	0.19	113	210
123	11.81	11.79	33.459	25.431	256.8	0.394	4.64	75.6	10.0	1.02	10.8	0.02	0.13	0.14	124	209
125 ISL	11.70	11.68	33.472	25.462	253.9	0.399	4.58	74.5	10.5	1.05	11.3	0.02	0.12	0.13	126	
138	11.23	11.21	33.557	25.614	239.7	0.431	4.25	68.4	13.7	1.21	14.1	0.01	0.04	0.06	139	208
150 ISL	10.66	10.64	33.598	25.747	227.1	0.459	4.09	65.1	16.1	1.33	16.2	0.01	0.03	0.05	151	
168	9.86	9.84	33.655	25.929	210.0	0.499	3.90	61.0	19.7	1.50	19.1	0.01	0.01	0.04	169	207
193	9.20	9.18	33.801	26.151	189.3	0.549	3.38	52.1	25.5	1.77	23.2	0.01			194	206
200 ISL	9.07	9.05	33.840	26.203	184.5	0.562	3.25	50.0	27.0	1.83	24.1	0.01			201	
230	8.61	8.59	33.968	26.375	168.5	0.615	2.83	43.1	32.6	2.03	27.0	0.01			231	205
250 ISL	8.31	8.28	34.005	26.450	161.6	0.648	2.70	40.9	35.5	2.11	28.1	0.01			251	
261	8.16	8.13	34.018	26.483	158.6	0.665	2.64	39.8	37.0	2.15	28.6	0.01			262	204
300 ISL	7.77	7.74	34.085	26.594	148.7	0.725	2.11	31.6	44.1	2.39	31.2	0.01			302	
317	7.60	7.57	34.109	26.637	144.7	0.750	1.86	27.7	47.5	2.50	32.4	0.01			319	203
374	6.76	6.73	34.130	26.771	132.4	0.829	1.30	19.0	59.6	2.78	36.3	0.01			376	202
400 ISL	6.72	6.68	34.178	26.814	128.6	0.863	1.04	15.2	63.0	2.89	37.2	0.01			402	
434	6.66	6.62	34.229	26.863	124.5	0.906	0.74	10.8	66.8	3.00	38.0	0.01			437	201
500 ISL	6.17	6.13	34.260	26.952	116.6	0.986	0.53	7.6	75.5	3.14	39.9	0.01			503	
508	6.11	6.06	34.264	26.963	115.6	0.995	0.50	7.2	76.5	3.16	40.1	0.01			511	224

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 35.7 N	122 49.0 W	02/02/98	1846 UTC	4273 m	170 25 kn	220 06 09	2	1007.4 mb	18.0 C	17.0 C	34m 01	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	16.03	16.03	33.459	24.557	337.0	0.000	5.69	101.2	2.0	0.27	0.1	0.00	0.13	0.02	0	
1	B	16.03	16.03	33.459	24.557	337.0	0.003	5.69	101.2	2.0	0.27	0.1	0.00	0.13	0.02	1	221
2		16.03	16.03	33.459	24.557	337.1	0.007			2.0	0.27	0.1	0.00			2	222
10	ISL	16.03	16.03	33.459	24.557	337.3	0.034	5.66	100.6	2.0	0.26	0.1	0.00	0.13	0.02	10	
12		16.03	16.03	33.459	24.557	337.3	0.040	5.65	100.4	2.0	0.26	0.1	0.00	0.13	0.02	12	220
20	ISL	16.03	16.03	33.458	24.557	337.6	0.067	5.70	101.3	2.0	0.26	0.1	0.00	0.12	0.03	20	
22	B	16.03	16.03	33.458	24.557	337.7	0.074	5.71	101.5	2.0	0.26	0.1	0.00	0.12	0.03	22	219
30	ISL	15.94	15.94	33.454	24.574	336.3	0.101	5.72	101.5	1.9	0.26	0.1	0.00	0.14	0.04	30	
36		15.82	15.81	33.448	24.597	334.3	0.121	5.72	101.2	1.9	0.27	0.1	0.00	0.16	0.04	36	218
45	B	15.55	15.54	33.436	24.648	329.7	0.151	5.76	101.4	1.9	0.28	0.1	0.00	0.25	0.09	45	217
50	ISL	15.41	15.40	33.433	24.677	327.1	0.168	5.75	100.9	2.0	0.29	0.1	0.00	0.37	0.17	50	
58		15.14	15.13	33.432	24.735	321.7	0.194	5.74	100.2	2.1	0.30	0.1	0.01	0.53	0.31	58	216
69	B	14.52	14.51	33.434	24.871	309.1	0.228	5.51	95.0	3.1	0.41	1.4	0.10	0.50 A	0.40 A	69	215
75	ISL	14.12	14.11	33.426	24.949	301.8	0.247	5.40	92.3	3.9	0.49	2.7	0.08	0.40	0.35	75	
81		13.65	13.64	33.418	25.040	293.3	0.264	5.27	89.2	5.0	0.60	4.5	0.05	0.30 A	0.27 A	81	214
92	B	12.48	12.47	33.419	25.273	271.2	0.295	4.84	80.0	8.4	0.90	9.1	0.03	0.20 A	0.20 A	92	213
100	ISL	12.07	12.06	33.459	25.382	260.9	0.317	4.76	78.0	9.3	0.95	10.0	0.03	0.13	0.13	100	
103		11.94	11.93	33.476	25.420	257.4	0.325	4.74	77.5	9.7	0.97	10.3	0.03	0.11 A	0.11 A	103	212
118		10.75	10.74	33.544	25.689	232.0	0.361	4.21	67.1	14.9	1.32	16.0	0.02	0.08 A	0.09 A	119	211
125	ISL	10.47	10.46	33.574	25.761	225.2	0.377	4.07	64.5	16.3	1.39	17.3	0.02	0.06	0.07	126	
130	B	10.31	10.29	33.600	25.809	220.7	0.388	3.97	62.7	17.3	1.44	18.1	0.02	0.05	0.05	131	210
143		9.75	9.73	33.713	25.992	203.5	0.416	3.53	55.1	22.2	1.67	21.9	0.02	0.01	0.03	144	209
150	ISL	9.52	9.50	33.754	26.062	196.9	0.430	3.43	53.3	23.9	1.73	22.9	0.02	0.01	0.03	151	
172		9.01	8.99	33.847	26.217	182.5	0.472	3.29	50.5	27.6	1.84	24.6	0.02	0.00	0.02	173	208
200	ISL	8.61	8.59	33.954	26.364	169.0	0.521	2.87	43.7	32.2	2.01	26.9	0.02	0.00	0.02	201	
201		8.60	8.58	33.957	26.368	168.7	0.523	2.86	43.6	32.4	2.02	27.0	0.02	0.00	0.02	202	207
234		8.01	7.99	34.003	26.493	157.1	0.576	2.80	42.1	37.3	2.12	28.6	0.02			235	206
250	ISL	7.80	7.78	34.019	26.537	153.2	0.601	2.63	39.3	39.9	2.20	29.7	0.02			251	
271		7.56	7.53	34.036	26.585	148.8	0.633	2.36	35.1	43.5	2.32	31.2	0.02			273	205
300	ISL	7.23	7.20	34.056	26.648	143.2	0.675	2.05	30.3	48.6	2.47	32.9	0.02			302	
315		7.08	7.05	34.067	26.677	140.5	0.697	1.89	27.8	51.2	2.54	33.7	0.02			317	204
367		6.76	6.73	34.118	26.761	133.1	0.768	1.28	18.7	59.6	2.78	36.5	0.02			369	203
400	ISL	6.38	6.34	34.124	26.817	128.1	0.811	1.05	15.2	65.6	2.90	38.2	0.02			403	
432		6.00	5.96	34.129	26.869	123.2	0.851	0.89	12.8	71.5	3.00	39.6	0.02			435	202
500	ISL	5.50	5.46	34.189	26.979	113.2	0.931	0.55	7.8	83.3	3.18	41.9	0.02			503	
512		5.41	5.37	34.200	26.998	111.4	0.945	0.49	6.9	85.4	3.21	42.3	0.02			515	201

A) CHLOROPHYLL AND PHAEOPIGMENT SAMPLES FROM 69 TO 118 METERS WERE NUMBERED AND ANALYZED IN REVERSE ORDER.
THE VALUES LISTED HERE ARE SUPPORTED BY ESTIMATED VALUES FROM THE CTD FLUOROMETER PROFILE.

B) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 14.3 N	123 30.0 W	02/02/98	0754 UTC	4135 m	200 25 kn			1011.0 mb	17.0 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	ISL	14.65	14.65	32.956	24.472	345.0	0.000	5.89	101.5	2.0	0.32	0.0	0.00	0.14	0.04	0	
1		14.65	14.65	32.955	24.472	345.1	0.003									1	221
2		14.65	14.65	32.956	24.472	345.1	0.007	5.89	101.5	2.0	0.32	0.0	0.00	0.14	0.04	2	220
10	ISL	14.65	14.65	32.965	24.479	344.6	0.034	5.90	101.7	2.0	0.32	0.0	0.00	0.15	0.03	10	
15		14.66	14.66	32.975	24.485	344.2	0.052	5.90	101.7	2.0	0.32	0.0	0.00	0.15	0.03	15	219
20	ISL	14.67	14.67	32.984	24.490	343.9	0.069	5.89	101.6	2.0	0.32	0.0	0.00	0.16	0.04	20	
30		14.68	14.68	33.015	24.512	342.1	0.103	5.88	101.5	2.0	0.31	0.0	0.00	0.19	0.05	30	218
45		14.49	14.48	33.056	24.585	335.6	0.154	5.90	101.4	2.0	0.31	0.0	0.00	0.32	0.12	45	217
50	ISL	14.25	14.24	33.019	24.607	333.6	0.171	5.96	101.9	2.0	0.32	0.0	0.00	0.31	0.12	50	
55		14.08	14.07	33.008	24.634	331.2	0.187	5.99	102.1	2.0	0.33	0.0	0.00	0.30	0.12	55	216
64		14.35	14.34	33.191	24.719	323.4	0.217	5.82	99.8	2.1	0.34	0.2	0.10	0.53	0.25	64	215
74		14.15	14.14	33.277	24.828	313.3	0.249	5.69	97.3	2.6	0.42	1.0	0.41	0.32	0.15	74	214
75	ISL	14.08	14.07	33.277	24.842	312.0	0.252	5.68	97.0	2.7	0.43	1.2	0.39	0.30	0.15	75	
85		13.31	13.30	33.242	24.972	299.7	0.282	5.53	92.9	4.2	0.55	3.4	0.05	0.19	0.14	85	213
95		12.72	12.71	33.207	25.062	291.4	0.312	5.41	89.7	5.3	0.67	5.0	0.03	0.13	0.10	95	212
100	ISL	12.24	12.23	33.257	25.193	278.9	0.326	5.13	84.3	7.2	0.83	7.5	0.03	0.11	0.09	100	
110		11.31	11.30	33.405	25.481	251.7	0.353	4.52	72.8	11.6	1.16	12.8	0.02	0.07	0.07	110	211
125		10.65	10.64	33.569	25.726	228.6	0.389	4.18	66.5	15.2	1.33	16.2	0.01	0.04	0.05	126	210
144		9.91	9.89	33.628	25.899	212.4	0.431	3.97	62.1	18.8	1.50	18.9	0.01	0.02	0.03	145	209
150	ISL	9.77	9.75	33.655	25.943	208.3	0.443	3.85	60.1	20.0	1.56	19.8	0.01	0.02	0.03	151	
169		9.44	9.42	33.747	26.070	196.6	0.482	3.45	53.5	23.8	1.74	22.7	0.01	0.01	0.02	170	208
198		8.93	8.91	33.888	26.262	178.7	0.536	2.98	45.7	29.4	1.96	25.9	0.01	0.00	0.02	199	207
200	ISL	8.90	8.88	33.896	26.273	177.7	0.540	2.96	45.4	29.7	1.97	26.1	0.01			201	
230		8.45	8.43	33.990	26.417	164.5	0.591	2.67	40.5	34.4	2.12	28.1	0.01			231	206
250	ISL	8.16	8.13	34.035	26.496	157.2	0.623	2.45	37.0	38.3	2.23	29.4	0.02			251	
267		7.94	7.91	34.064	26.552	152.1	0.649	2.27	34.1	41.6	2.33	30.4	0.02			268	205
300	ISL	7.60	7.57	34.100	26.630	145.1	0.699	1.93	28.8	46.9	2.49	32.2	0.02			302	
318		7.43	7.40	34.110	26.662	142.3	0.724	1.76	26.1	49.6	2.56	33.1	0.02			320	204
377		6.73	6.70	34.110	26.759	133.5	0.806	1.39	20.3	58.6	2.76	36.0	0.02			379	203
400	ISL	6.73	6.69	34.154	26.794	130.6	0.836	1.14	16.6	61.2	2.86	36.7	0.02			402	
438		6.74	6.70	34.225	26.849	126.0	0.885	0.74	10.8	65.4	3.01	37.7	0.02			441	202
500	ISL	6.31	6.26	34.268	26.941	117.8	0.960	0.47	6.8	74.1	3.15	39.6	0.02			503	
516		6.20	6.15	34.280	26.964	115.7	0.979	0.40	5.8	76.3	3.19	40.1	0.02			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 54.5 N	124 10.2 W	02/02/98	0149	UTC	4190 m	210	20 kn	210 08 06	2	1011.9 mb	17.3 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	15.64	15.64	33.286	24.511	341.3	0.000	5.79	102.0	2.0	0.24	0.0	0.00	0.12	0.03	0	
0	15.65	15.65	33.289	24.511	341.3	0.000									0	221
1	15.64	15.64	33.286	24.511	341.4	0.003	5.79	102.0	2.0	0.24	0.0	0.00	0.12	0.03	1	220
10 ISL	15.65	15.65	33.287	24.510	341.8	0.034	5.78	101.9	2.0	0.24	0.0	0.00	0.11	0.03	10	
16	15.65	15.65	33.288	24.511	341.8	0.055	5.78	101.9	2.0	0.24	0.0	0.00	0.11	0.03	16	219
20 ISL	15.66	15.66	33.293	24.513	341.8	0.068	5.78	101.9	2.0	0.24	0.0	0.00	0.11	0.03	20	
30	15.68	15.68	33.311	24.522	341.2	0.102	5.78	101.9	2.0	0.24	0.0	0.00	0.11	0.02	30	218
43	15.73	15.72	33.337	24.532	340.7	0.147	5.74	101.3	2.0	0.24	0.0	0.00	0.13	0.03	43	217
50 ISL	15.71	15.70	33.335	24.535	340.6	0.171	5.74	101.3	2.0	0.24	0.0	0.00	0.13	0.03	50	
62	15.62	15.61	33.316	24.541	340.4	0.212	5.75	101.3	2.0	0.24	0.0	0.00	0.16	0.05	62	216
72	15.53	15.52	33.295	24.545	340.4	0.246	5.78	101.6	2.1	0.24	0.0	0.00	0.22	0.08	72	215
75 ISL	15.49	15.48	33.294	24.553	339.7	0.256	5.78	101.5	2.1	0.24	0.0	0.05	0.26	0.10	75	
84	15.20	15.19	33.292	24.615	333.9	0.286	5.75	100.4	2.1	0.25	0.0	0.19	0.36	0.16	84	214
93	14.49	14.48	33.282	24.761	320.3	0.316	5.70	98.1	2.9	0.35	0.7	0.19	0.32	0.22	93	213
100 ISL	14.25	14.24	33.295	24.821	314.7	0.338	5.69	97.5	3.0	0.37	1.1	0.14	0.30	0.21	100	
103	14.09	14.08	33.297	24.856	311.4	0.347	5.69	97.1	3.1	0.39	1.3	0.11	0.28	0.21	103	212
112	12.65	12.64	33.264	25.120	286.3	0.374	5.46	90.5	5.4	0.62	4.4	0.02	0.18	0.16	112	211
122	12.35	12.33	33.382	25.270	272.2	0.402	5.26	86.7	6.5	0.68	5.9	0.02	0.13	0.12	123	210
125 ISL	12.14	12.12	33.393	25.318	267.7	0.410	5.15	84.5	7.4	0.76	7.1	0.02	0.11	0.11	126	
139	10.99	10.97	33.435	25.562	244.5	0.446	4.55	72.8	12.8	1.21	13.9	0.01	0.05	0.06	140	209
150 ISL	10.26	10.24	33.562	25.788	223.1	0.472	4.04	63.7	17.5	1.47	18.1	0.01	0.02	0.04	151	
163	9.59	9.57	33.719	26.023	200.9	0.499	3.55	55.2	22.5	1.68	21.8	0.01	0.01	0.03	164	208
194	9.00	8.98	33.809	26.189	185.6	0.559	3.38	51.9	26.8	1.80	24.0	0.01	0.01	0.02	195	207
200 ISL	8.92	8.90	33.829	26.218	183.0	0.570	3.31	50.7	27.6	1.83	24.5	0.01			201	
228	8.57	8.55	33.915	26.340	171.8	0.620	3.01	45.8	31.5	1.99	26.5	0.01			229	206
250 ISL	8.29	8.26	33.962	26.419	164.5	0.657	2.95	44.6	34.1	2.04	27.4	0.01			251	
268	8.08	8.05	33.994	26.476	159.4	0.686	2.88	43.4	36.4	2.09	28.1	0.01			269	205
300 ISL	7.77	7.74	34.057	26.572	150.7	0.736	2.37	35.4	42.5	2.32	30.6	0.01			302	
317	7.62	7.59	34.084	26.615	146.9	0.761	2.07	30.9	46.0	2.45	32.0	0.01			319	204
375	7.02	6.98	34.106	26.717	137.7	0.843	1.61	23.7	55.0	2.68	34.8	0.01			377	203
400 ISL	6.79	6.75	34.123	26.762	133.7	0.877	1.35	19.7	59.5	2.79	36.1	0.01			402	
437	6.47	6.43	34.151	26.827	127.8	0.926	0.98	14.2	66.1	2.94	38.0	0.01			440	202
500 ISL	5.98	5.94	34.196	26.926	118.8	1.003	0.65	9.3	76.0	3.12	40.1	0.01			503	
516	5.86	5.82	34.208	26.950	116.6	1.022	0.56	8.0	78.5	3.16	40.6	0.01			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 53.2 N	118 29.4 W	30/01/98	0310	UTC	56 m	260	19 kn			1017.0 mb	16.8 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	16.67	16.67	33.677	24.577	335.0	0.000	5.25	94.6	4.5	0.73	1.5	0.75	0.95	0.44	0	
1	16.66	16.66	33.685	24.586	334.3	0.003									1	208
1	16.67	16.67	33.677	24.577	335.1	0.003	5.25	94.6	4.5	0.73 A	1.5 A	0.75	0.95	0.44	1	207
5	16.67	16.67	33.676	24.577	335.3	0.017	5.23	94.3	4.5	0.75	1.4	0.76	0.92	0.45	5	206
10	16.67	16.67	33.676	24.577	335.4	0.034	5.23	94.3	4.4	0.70	1.4	0.75	1.00	0.44	10	205
20	16.68	16.68	33.684	24.581	335.3	0.067	5.24	94.5	4.1	0.65	1.3	0.69	1.04	0.45	20	204
29	16.67	16.67	33.691	24.589	334.9	0.097	5.27	95.0	4.0	0.61	1.2	0.65	1.05	0.44	29	203
30 ISL	16.67	16.67	33.692	24.590	334.8	0.101	5.26	94.8	3.9	0.60	1.2	0.64	1.04	0.44	30	
40	16.62	16.61	33.715	24.620	332.3	0.134	5.20	93.7	3.6	0.54	1.2	0.57	0.79	0.45	40	202
50 ISL	16.42	16.41	33.733	24.680	326.9	0.167	4.90	87.9	4.8	0.62	2.6	0.62	0.38	0.30	50	
51	16.40	16.39	33.735	24.686	326.3	0.170	4.87	87.3	4.9	0.63	2.7	0.63	0.34	0.29	51	201

A) UNUSUAL PROFILES AND ODD NO3/PO4 RATIOS MAY BE DUE TO THE PROXIMITY OF THIS STATION TO THE HYPERION WASTE WATER OUTFALL AND/OR TO RUN-OFF FROM RECENT HEAVY RAINSTORMS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 49.5 N	118 37.5 W	30/01/98	0511	UTC	644 m	290	08 kn			1017.0 mb	16.7 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	16.80	16.80	33.805	24.645	328.6	0.000	5.51	99.7	2.2	0.35	0.4	0.31	0.66	0.35	0	
2	16.80	16.80	33.805	24.645	328.6	0.007	5.51	99.7	2.2	0.35	0.4	0.31	0.66	0.35	2	220
2	16.78	16.78	33.804	24.649	328.2	0.007									2	221
10 ISL	16.81	16.81	33.808	24.646	328.9	0.033	5.52	99.9	2.1	0.35	0.4	0.31	0.65	0.35	10	
14	16.81	16.81	33.811	24.648	328.8	0.046	5.52	99.9	2.1	0.35	0.4	0.31	0.64 A	0.35 A	14	219
20 ISL	16.82	16.82	33.815	24.649	328.9	0.066	5.51	99.7	2.1	0.35	0.4	0.32	0.63	0.35	20	
30	16.83	16.83	33.822	24.652	328.9	0.099	5.49	99.4	2.1	0.35	0.4	0.33	0.61	0.34	30	218
45	16.84	16.83	33.822	24.651	329.6	0.148	5.52	99.9	2.1	0.36	0.4	0.34	0.59	0.38	45	217
50 ISL	16.84	16.83	33.821	24.650	329.8	0.164	5.50	99.5	2.1	0.36	0.4	0.34	0.56	0.37	50	
54	16.84	16.83	33.821	24.650	329.9	0.178	5.47	99.0	2.1	0.36	0.4	0.34	0.54	0.37	54	216
64	16.69	16.68	33.817	24.682	327.1	0.211	5.35	96.5	2.7	0.40	0.9	0.33	0.28	0.28	64	215
74	15.62	15.61	33.694	24.832	313.1	0.243	4.48	79.1	6.4	0.78	6.1	0.04	0.07	0.17	74	214
75 ISL	15.54	15.53	33.687	24.844	312.0	0.246	4.47	78.8	6.6	0.79	6.3	0.04	0.07	0.17	75	
84	14.97	14.96	33.655	24.945	302.6	0.273	4.36	76.0	7.4	0.85	7.1	0.03	0.05	0.15	84	213
95	14.57	14.56	33.661	25.036	294.2	0.306	4.10	70.9	9.0	0.99	8.9	0.03	0.03	0.11	95	212
100 ISL	14.25	14.24	33.710	25.142	284.2	0.321	3.84	65.9	10.3	1.10	10.4	0.03	0.03	0.10	100	
109	13.61	13.59	33.804	25.347	264.8	0.345	3.39	57.5	12.6	1.29	13.2	0.02	0.02	0.08	109	211
124	12.78	12.76	33.827	25.532	247.6	0.384	3.24	54.0	14.8	1.42	15.5	0.02	0.01	0.08	125	210
125 ISL	12.71	12.69	33.827	25.545	246.3	0.386	3.23	53.8	15.0	1.43	15.7	0.02	0.01	0.08	126	
143	11.56	11.54	33.841	25.775	224.6	0.429	3.05	49.5	19.1	1.61	18.8	0.01	0.01	0.07	144	209
150 ISL	11.24	11.22	33.862	25.850	217.6	0.444	2.94	47.4	20.6	1.68	19.9	0.01	0.01	0.07	151	
169	10.61	10.59	33.937	26.021	201.6	0.484	2.63	41.9	24.3	1.86	22.6	0.01	0.01	0.06	170	208
198	10.18	10.16	34.060	26.192	186.0	0.540	2.19	34.6	29.0	2.10	25.3	0.01	0.01	0.06	199	207
200 ISL	10.15	10.13	34.066	26.202	185.1	0.544	2.17	34.2	29.3	2.11	25.4	0.01			201	
226	9.76	9.73	34.134	26.321	174.2	0.591	1.95	30.5	32.4	2.23	27.0	0.01			227	206
250 ISL	9.48	9.45	34.181	26.404	166.7	0.631	1.75	27.2	35.3	2.33	28.3	0.01			251	
266	9.31	9.28	34.205	26.451	162.5	0.658	1.62	25.1	37.3	2.40	29.0	0.01			267	205
300 ISL	8.91	8.88	34.241	26.544	154.2	0.712	1.41	21.7	41.4	2.52	30.3	0.01			302	
318	8.70	8.67	34.254	26.587	150.3	0.739	1.30	19.9	43.7	2.58	31.0	0.01			320	204
377	8.00	7.96	34.280	26.714	138.8	0.824	0.89	13.4	52.7	2.82	33.6	0.01			379	203
400 ISL	7.70	7.66	34.291	26.767	134.0	0.856	0.76	11.4	57.0	2.91	34.6	0.01			403	
436	7.24	7.20	34.307	26.846	126.8	0.903	0.58	8.6	63.7	3.04	36.1	0.01			439	202
500 ISL	6.66	6.61	34.326	26.940	118.3	0.981	0.39	5.7	73.1	3.16	38.0	0.01			503	
514	6.53	6.48	34.331	26.962	116.3	0.997	0.35	5.1	75.1	3.19	38.4	0.01			517	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 39.4 N	118 58.7 W	30/01/98	0936 UTC	760 m	280 10 kn			1017.6 mb	16.0 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	17.51	17.51	33.981	24.612	331.7	0.000	5.35	98.2	1.9	0.35	0.5	0.31	0.49	0.27	0	
1		17.51	17.51	33.981	24.612	331.8	0.003	5.35	98.2	1.9	0.35	0.5	0.31	0.49	0.27	1	220
1		17.51	17.51	33.981	24.612	331.8	0.003									1	221
10	ISL	17.51	17.51	33.979	24.611	332.2	0.033	5.36	98.4	1.9	0.35	0.4	0.31	0.48	0.28	10	
12		17.51	17.51	33.979	24.611	332.3	0.040	5.36	98.4	1.9	0.35	0.4	0.31	0.48	0.28	12	219
20	ISL	17.52	17.52	33.980	24.609	332.7	0.066	5.36	98.4	1.9	0.36	0.4	0.31	0.50	0.29	20	
22		17.52	17.52	33.980	24.609	332.7	0.073	5.36	98.4	1.9	0.36	0.4	0.31	0.50	0.29	22	218
30		17.52	17.51	33.978	24.608	333.1	0.100	5.36	98.4	2.0	0.36	0.4	0.31	0.49	0.28	30	217
41		17.50	17.49	33.977	24.613	333.1	0.136	5.37	98.5	2.0	0.36	0.4	0.31	0.53	0.31	41	216
50	ISL	17.45	17.44	33.968	24.618	332.9	0.166	5.36	98.3	2.0	0.35	0.3	0.29	0.43	0.32	50	
51		17.45	17.44	33.967	24.617	333.0	0.170	5.36	98.3	2.0	0.35	0.3	0.29	0.41	0.32	51	215
60		17.22	17.21	33.946	24.657	329.5	0.199	5.27	96.2	2.2	0.39	0.7	0.41	0.17	0.17	60	214
70		16.78	16.77	33.871	24.703	325.4	0.232	4.95	89.5	3.7	0.53	2.7	0.26	0.11	0.13	70	213
75	ISL	16.40	16.39	33.824	24.755	320.5	0.248	4.72	84.7	4.9	0.63	4.1	0.18	0.08	0.11	75	
86		15.43	15.42	33.748	24.916	305.5	0.283	4.19	73.7	7.7	0.88	7.4	0.05	0.04	0.08	86	212
100		14.20	14.19	33.760	25.191	279.6	0.324	3.67	63.0	10.8	1.15	11.1	0.03	0.02	0.07	100	211
120		13.10	13.08	33.783	25.434	256.8	0.377	3.38	56.7	13.8	1.33	14.2	0.02	0.01	0.06	121	210
125	ISL	12.76	12.74	33.798	25.513	249.3	0.390	3.28	54.6	15.0	1.40	15.3	0.02	0.01	0.06	126	
140		11.75	11.73	33.859	25.754	226.6	0.426	2.95	48.1	19.0	1.61	18.8	0.02	0.01	0.05	141	209
150	ISL	11.17	11.15	33.904	25.895	213.3	0.448	2.73	44.0	22.0	1.75	20.9	0.02	0.01	0.05	151	
169		10.35	10.33	33.990	26.107	193.4	0.486	2.37	37.5	27.0	1.98	24.0	0.01	0.01	0.05	170	208
198		9.93	9.91	34.086	26.254	179.9	0.540	2.08	32.7	30.9	2.15	26.2	0.01	0.00	0.04	199	207
200	ISL	9.90	9.88	34.091	26.263	179.1	0.544	2.06	32.3	31.1	2.16	26.3	0.01			201	
228		9.56	9.53	34.150	26.366	169.8	0.593	1.86	29.0	34.3	2.27	27.7	0.01			229	206
250	ISL	9.39	9.36	34.185	26.422	164.9	0.630	1.72	26.7	36.3	2.34	28.5	0.01			251	
268		9.27	9.24	34.207	26.459	161.7	0.659	1.62	25.1	37.8	2.39	29.0	0.01			270	205
300	ISL	8.93	8.90	34.231	26.533	155.2	0.710	1.47	22.6	40.9	2.48	30.1	0.01			302	
318		8.72	8.69	34.241	26.574	151.6	0.737	1.39	21.3	42.8	2.53	30.7	0.01			320	204
378		8.15	8.11	34.273	26.687	141.6	0.825	0.98	14.8	50.8	2.75	33.2	0.01			380	203
400	ISL	7.91	7.87	34.280	26.728	137.9	0.856	0.85	12.8	54.0	2.83	34.1	0.01			403	
441		7.47	7.43	34.293	26.802	131.2	0.911	0.65	9.7	60.1	2.96	35.6	0.01			444	202
500	ISL	6.96	6.91	34.316	26.892	123.1	0.986	0.46	6.8	68.0	3.08	37.3	0.01			503	
513		6.85	6.80	34.321	26.911	121.4	1.002	0.42	6.2	69.7	3.11	37.7	0.01			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.4 N	119 19.2 W	30/01/98	1356 UTC	1639 m	290 10 kn			1016.1 mb	15.6 C	13.1 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	16.68	16.68	33.822	24.686	324.7	0.000	5.53	99.8	2.6	0.35	0.2	0.11	0.61	0.31	0	
1		16.69	16.69	33.823	24.685	324.8	0.003									1	221
1		16.68	16.68	33.822	24.686	324.7	0.003	5.53	99.8	2.6	0.35	0.2	0.11	0.61	0.31	1	220
10	ISL	16.70	16.70	33.823	24.683	325.3	0.032	5.53	99.8	2.5	0.35	0.2	0.11	0.60	0.35	10	
11		16.70	16.70	33.823	24.683	325.4	0.036	5.53	99.8	2.5	0.35	0.2	0.11	0.60	0.35	11	219
20		16.71	16.71	33.823	24.681	325.8	0.065	5.53	99.8	2.5	0.35	0.2	0.11			20	218
30		16.68	16.68	33.821	24.687	325.6	0.098	5.53	99.8	2.5	0.34	0.2	0.11	0.64	0.27	30	217
38		16.47	16.46	33.788	24.710	323.6	0.124	5.55	99.7	2.4	0.34	0.2	0.10	0.64	0.32	38	216
50	ISL	15.66	15.65	33.650	24.788	316.5	0.162	5.38	95.0	3.4	0.43	1.4	0.19	0.33	0.23	50	
51		15.59	15.58	33.642	24.798	315.6	0.165	5.37	94.7	3.5	0.44	1.5	0.19	0.30	0.22	51	215
59		15.23	15.22	33.705	24.926	303.6	0.190	4.29	75.2	7.7	0.87	7.2	0.07	0.07	0.14	59	214
71		14.20	14.19	33.703	25.146	283.0	0.225	3.91	67.1	10.1	1.07	10.1	0.03	0.03	0.10	71	213
75	ISL	13.93	13.92	33.723	25.218	276.2	0.236	3.77	64.3	11.0	1.14	11.1	0.03	0.02	0.09	75	
85		13.25	13.24	33.790	25.409	258.3	0.263	3.39	57.1	13.7	1.33	13.9	0.02	0.01	0.08	85	212
98		12.09	12.08	33.886	25.710	229.8	0.295	2.89	47.5	18.4	1.62	18.3	0.01	0.01	0.06	98	211
100	ISL	11.98	11.97	33.899	25.741	226.9	0.299	2.83	46.4	19.0	1.65	18.8	0.01	0.01	0.06	100	
118		11.35	11.34	33.981	25.922	210.0	0.339	2.48	40.1	23.1	1.86	21.8	0.01	0.01	0.06	119	210
125	ISL	11.14	11.12	33.993	25.969	205.6	0.353	2.43	39.2	24.0	1.90	22.4	0.01	0.01	0.05	126	
140		10.76	10.74	34.013	26.053	198.0	0.383	2.35	37.6	25.6	1.97	23.4	0.01	0.00	0.04	141	209
150	ISL	10.52	10.50	34.047	26.122	191.6	0.403	2.23	35.5	27.2	2.04	24.4	0.01	0.00	0.04	151	
167		10.18	10.16	34.105	26.226	182.0	0.435	2.03	32.1	30.0	2.15	26.0	0.01	0.00	0.04	168	208
199		9.76	9.74	34.146	26.330	172.8	0.491	1.90	29.7	33.3	2.26	27.3	0.01	0.00	0.04	200	207
200	ISL	9.74	9.72	34.146	26.333	172.4	0.493	1.90	29.7	33.4	2.26	27.3	0.01			201	
228		9.25	9.22	34.149	26.416	164.9	0.540	1.85	28.6	35.9	2.33	28.4	0.00			229	206
250	ISL	9.08	9.05	34.176	26.465	160.7	0.576	1.72	26.5	37.9	2.40	29.2	0.00			251	
270		8.98	8.95	34.205	26.504	157.4	0.608	1.57	24.2	39.8	2.46	29.9	0.00			272	205
300	ISL	8.68	8.65	34.237	26.576	150.9	0.654	1.36	20.8	43.2	2.56	31.0	0.00			302	
319		8.47	8.44	34.253	26.622	146.9	0.683	1.23	18.7	45.7	2.63	31.7	0.00			321	204
378		7.80	7.76	34.283	26.746	135.7	0.766	0.82	12.3	55.2	2.87	34.4	0.00			380	203
400	ISL	7.54	7.50	34.291	26.790	131.7	0.795	0.69	10.3	58.8	2.95	35.4	0.00			403	
434		7.17	7.13	34.302	26.851	126.1	0.839	0.53	7.8	64.1	3.05	36.8	0.00			437	202
500	ISL	6.70	6.65	34.317	26.928	119.5	0.920	0.39	5.7	71.4	3.15	38.3	0.00			503	
515		6.59	6.54	34.321	26.946	117.9	0.938	0.36	5.2	73.0	3.17	38.7	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 19.6 N	119 39.7 W	30/01/98	1914 UTC	78 m	260 02 kn	290 08 14	0	1018.0 mb	17.5 C	15.5 C	27m 02	0/8	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	16.16	16.16	33.699	24.712	322.2	0.000	5.58	99.6	2.5	0.37	0.6	0.15	0.68	0.24	0	
2		16.22	16.22	33.700	24.699	323.5	0.006									2	208
2	A	16.16	16.16	33.699	24.712	322.3	0.006	5.58	99.6	2.5	0.37	0.6	0.15	0.68	0.24	2	207
10	ISL	16.12	16.12	33.699	24.721	321.7	0.032	5.58	99.5	2.5	0.37	0.6	0.15	0.72	0.27	10	
18	A	16.07	16.07	33.699	24.733	320.8	0.058	5.58	99.4	2.4	0.37	0.6	0.15	0.76	0.30	18	206
20	ISL	16.06	16.06	33.699	24.735	320.7	0.064	5.58	99.4	2.4	0.37	0.6	0.15	0.76	0.30	20	
29		16.04	16.04	33.698	24.739	320.6	0.093	5.57	99.2	2.4	0.37	0.6	0.15	0.75	0.32	29	205
30	ISL	15.99	15.99	33.694	24.747	319.8	0.096	5.55	98.7	2.5	0.38	0.7	0.16	0.69	0.31	30	
36	A	15.59	15.58	33.663	24.813	313.7	0.115	5.36	94.6	3.2	0.45	1.7	0.23	0.33	0.23	36	204
45		14.88	14.87	33.607	24.926	303.1	0.143	5.00	86.9	5.2	0.63	4.4	0.20	0.17	0.15	45	203
50	ISL	14.73	14.72	33.609	24.960	300.1	0.158	4.95	85.8	5.6	0.66	4.8	0.19	0.16	0.15	50	
55	A	14.64	14.63	33.619	24.987	297.6	0.173	4.93	85.3	5.8	0.68	5.0	0.19	0.16	0.14	55	202
66		14.33	14.32	33.630	25.062	290.8	0.206	4.76	81.8	7.1	0.78	6.6	0.18	0.14	0.15	66	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 0.6 W	31/01/98	0210 UTC	1188 m	180 09 kn	180 08 06	1	1015.0 mb	15.3 C	13.9 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	15.73	15.73	33.511	24.664	326.8	0.000	5.75	101.6	1.9	0.26	0.1	0.00	0.28	0.16	0	
1		15.74	15.74	33.509	24.660	327.1	0.003									1	221
1		15.73	15.73	33.511	24.664	326.8	0.003	5.75	101.6	1.9	0.26	0.1	0.00	0.28	0.16	1	220
10	ISL	15.70	15.70	33.509	24.670	326.6	0.033	5.76	101.8	2.0	0.26	0.1	0.00	0.27	0.14	10	
15		15.68	15.68	33.509	24.674	326.3	0.049	5.76	101.7	2.0	0.26	0.1	0.00	0.27	0.14	15	219
20	ISL	15.68	15.68	33.511	24.676	326.3	0.065	5.76	101.7	2.0	0.26	0.1	0.00	0.30	0.16	20	
30		15.67	15.67	33.519	24.685	325.7	0.098	5.76	101.7	2.0	0.27	0.1	0.00	0.38	0.22	30	218
46		15.69	15.68	33.558	24.711	323.8	0.150	5.69	100.5	2.3	0.31	0.1	0.08	0.51	0.33	46	217
50	ISL	15.68	15.67	33.562	24.716	323.4	0.163	5.68	100.3	2.4	0.31	0.2	0.10	0.47	0.33	50	
55		15.67	15.66	33.562	24.719	323.3	0.179	5.66	99.9	2.5	0.32	0.4	0.14	0.41	0.33	55	216
63		15.63	15.62	33.550	24.719	323.6	0.205	5.58	98.4	2.6	0.34	0.6	0.23	0.31	0.26	63	215
74		15.59	15.58	33.571	24.744	321.5	0.240	5.44	95.9	3.1	0.40	1.3	0.34	0.21	0.24	74	214
75	ISL	15.57	15.56	33.573	24.750	320.9	0.244	5.42	95.5	3.2	0.41	1.4	0.34	0.20	0.23	75	
85		15.23	15.22	33.581	24.832	313.4	0.275	5.21	91.2	4.2	0.51	2.9	0.27	0.15	0.18	85	213
95		14.71	14.70	33.553	24.923	305.0	0.306	5.01	86.8	5.6	0.63	4.7	0.15	0.14	0.15	95	212
100	ISL	14.35	14.34	33.542	24.991	298.6	0.321	4.89	84.1	6.4	0.70	5.7	0.10	0.13	0.15	100	
111		13.53	13.51	33.517	25.142	284.4	0.353	4.69	79.3	7.8	0.83	7.6	0.04	0.10	0.15	111	211
123		12.77	12.75	33.477	25.262	273.1	0.387	4.74	78.8	8.6	0.87	8.4	0.03	0.09	0.15	124	210
125	ISL	12.67	12.65	33.482	25.286	270.9	0.392	4.70	78.0	8.9	0.89	8.8	0.03	0.09	0.14	126	
142		12.02	12.00	33.577	25.484	252.3	0.437	4.23	69.3	12.4	1.14	12.5	0.01	0.05	0.10	143	209
150	ISL	11.82	11.80	33.619	25.554	245.8	0.457	4.05	66.1	13.8	1.23	13.8	0.01	0.04	0.10	151	
170		11.36	11.34	33.743	25.736	228.9	0.504	3.55	57.4	17.8	1.47	17.2	0.01	0.02	0.12	171	208
198		10.41	10.39	33.996	26.102	194.5	0.563	2.46	39.0	26.8	1.98	23.9	0.01	0.01	0.05	199	207
200	ISL	10.37	10.35	34.007	26.118	193.1	0.567	2.42	38.3	27.2	2.00	24.2	0.01			201	
227		9.88	9.85	34.093	26.269	179.2	0.618	2.09	32.8	31.5	2.17	26.3	0.01			228	206
250	ISL	9.24	9.21	34.107	26.385	168.3	0.657	2.14	33.1	35.0	2.23	27.6	0.01			251	
266		8.79	8.76	34.105	26.455	161.8	0.684	2.17	33.2	37.4	2.25	28.4	0.01			267	205
300	ISL	8.10	8.07	34.115	26.569	151.2	0.737	2.05	30.9	43.0	2.38	30.4	0.00			302	
318		7.83	7.80	34.121	26.614	147.1	0.764	1.94	29.1	45.9	2.46	31.4	0.00			320	204
377		7.34	7.30	34.154	26.710	138.6	0.848	1.49	22.1	53.7	2.66	34.0	0.00			379	203
400	ISL	6.96	6.92	34.163	26.770	133.0	0.879	1.25	18.4	59.3	2.79	35.7	0.00			402	
433		6.45	6.41	34.180	26.852	125.3	0.922	0.93	13.5	67.2	2.97	37.9	0.00			436	202
500	ISL	6.22	6.18	34.236	26.927	119.0	1.004	0.62	8.9	74.2	3.12	39.5	0.00			503	
506		6.20	6.15	34.241	26.933	118.4	1.011	0.59	8.5	74.8	3.13	39.6	0.00			509	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 59.4 N	120 20.9 W	31/01/98	0658 UTC	718 m	150 24 kn			1012.2 mb	15.3 C	13.2 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	15.90	15.90	33.461	24.587	334.1	0.000	5.70	101.1	2.0	0.24	0.1	0.00	0.16	0.04	0	
1		15.87	15.87	33.460	24.594	333.5	0.003									1	221
2		15.90	15.90	33.461	24.588	334.1	0.007	5.70	101.1	2.0	0.24	0.1	0.00	0.16	0.04	2	220
10	ISL	15.89	15.89	33.461	24.590	334.1	0.033	5.70	101.0	2.0	0.24	0.1	0.00	0.16	0.04	10	
16		15.88	15.88	33.460	24.592	334.2	0.053	5.70	101.0	2.0	0.24	0.1	0.00	0.16	0.04	16	219
20	ISL	15.87	15.87	33.460	24.594	334.0	0.067	5.70	101.0	2.0	0.25	0.1	0.00	0.16	0.04	20	
30	ISL	15.86	15.86	33.459	24.596	334.2	0.100	5.70	101.0	2.0	0.26	0.1	0.00	0.16	0.05	30	
31		15.86	15.86	33.459	24.596	334.2	0.104	5.70	101.0	2.0	0.26	0.1	0.00	0.16	0.05	31	218
45		15.84	15.83	33.459	24.601	334.2	0.150	5.69	100.8	2.0	0.25	0.1	0.00	0.19	0.06	45	217
50	ISL	15.82	15.81	33.464	24.609	333.6	0.167	5.71	101.1	2.0	0.24	0.1	0.00	0.24	0.09	50	
54		15.79	15.78	33.467	24.619	332.8	0.180	5.73	101.4	2.0	0.24	0.1	0.00	0.28	0.12	54	216
66		15.59	15.58	33.460	24.658	329.4	0.220	5.76	101.5	2.0	0.27	0.0	0.06	0.35	0.25	66	215
75		15.25	15.24	33.443	24.720	323.7	0.250	5.61	98.2	2.2	0.33	0.6	0.19	0.26	0.22	75	214
83		14.45	14.44	33.390	24.852	311.3	0.275	5.53	95.2	3.4	0.42	1.9	0.07	0.21	0.20	83	213
95		13.78	13.77	33.381	24.985	298.9	0.312	5.42	92.0	4.2	0.52	3.3	0.04	0.17	0.17	95	212
100	ISL	13.63	13.62	33.380	25.015	296.1	0.326	5.39	91.2	4.4	0.54	3.6	0.04	0.16	0.17	100	
111		13.22	13.20	33.385	25.102	288.1	0.359	5.29	88.8	5.3	0.62	4.9	0.03	0.15	0.17	111	211
125	ISL	11.99	11.97	33.424	25.371	262.7	0.397	4.95	80.9	8.4	0.87	9.0	0.02	0.09	0.13	126	
126		11.90	11.88	33.428	25.391	260.8	0.400	4.92	80.3	8.7	0.89	9.3	0.02	0.09	0.13	127	210
145		11.24	11.22	33.489	25.560	245.0	0.448	4.59	73.9	11.9	1.10	12.6	0.01	0.06	0.08	146	209
150	ISL	11.05	11.03	33.526	25.623	239.1	0.460	4.40	70.6	13.4	1.19	13.9	0.01	0.05	0.07	151	
170		10.37	10.35	33.682	25.864	216.5	0.505	3.65	57.7	19.0	1.52	18.9	0.01	0.02	0.04	171	208
200	ISL	10.01	9.99	33.776	25.999	204.2	0.568	3.43	53.8	22.0	1.65	20.7	0.01	0.01	0.04	201	
202		9.99	9.97	33.781	26.006	203.5	0.573	3.43	53.8	22.2	1.65	20.8	0.01	0.01	0.04	203	207
228		9.50	9.47	33.940	26.212	184.4	0.623	2.89	44.9	28.0	1.93	24.4	0.01			229	206
250	ISL	9.05	9.02	34.017	26.345	172.0	0.662	2.61	40.2	32.4	2.09	26.6	0.01			251	
269		8.66	8.63	34.055	26.436	163.5	0.694	2.46	37.5	35.9	2.18	28.0	0.01			270	205
300	ISL	8.06	8.03	34.075	26.543	153.6	0.743	2.33	35.1	40.7	2.28	29.7	0.01			302	
316		7.82	7.79	34.081	26.583	149.9	0.768	2.25	33.7	43.0	2.33	30.4	0.01			318	204
376		7.62	7.58	34.204	26.710	138.9	0.854	1.24	18.5	53.3	2.72	34.0	0.01			378	203
400	ISL	7.32	7.28	34.216	26.762	134.1	0.887	1.05	15.6	57.9	2.83	35.3	0.01			402	
429		6.94	6.90	34.219	26.818	129.0	0.925	0.92	13.5	62.8	2.92	36.7	0.01			432	202
500	ISL	6.55	6.50	34.216	26.868	124.9	1.015	0.84	12.2	67.8	3.01	38.0	0.01			503	
504		6.53	6.48	34.216	26.871	124.7	1.020	0.84	12.2	68.1	3.01	38.1	0.01			507	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 39.8 N	121 1.9 W	31/01/98	1838 UTC	3771 m	090 04 kn	210 05 08	1	1013.1 mb	17.2 C	15.5 C	49m 01	3/8	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	16.07	16.07	33.308	24.431	348.9	0.000	5.66	100.6	2.0	0.24	0.1	0.00	0.13	0.05	0	
2		16.08	16.08	33.307	24.428	349.3	0.007									2	224
2	B	16.07	16.07	33.308	24.432	349.0	0.007	5.66	100.6	2.0	0.24	0.1	0.00	0.13	0.05	2	223
10	ISL	16.07	16.07	33.378	24.486	344.1	0.035	5.67	100.8	2.0	0.24	0.1	0.00	0.14	0.04	10	
18		16.06	16.06	33.463	24.553	337.9	0.062	5.69	101.2	2.0	0.24	0.1	0.00	0.15	0.04	18	222
20	ISL	16.06	16.06	33.464	24.554	337.9	0.069	5.69	101.2	2.0	0.24	0.1	0.00	0.15	0.04	20	
30	ISL	16.06	16.06	33.470	24.559	337.7	0.103	5.67	100.9	1.9	0.24	0.1	0.00	0.17	0.05	30	
33	B	16.06	16.05	33.472	24.561	337.6	0.113	5.67	100.9	1.9	0.24	0.1	0.00	0.17	0.05	33	221
44		16.05	16.04	33.472	24.564	337.7	0.150	5.67	100.8	1.9	0.24	0.1	0.00	0.16	0.04	44	220
50	ISL	16.04	16.03	33.468	24.563	338.0	0.170	5.67	100.8	1.9	0.24	0.1	0.00	0.17	0.04	50	
55		16.03	16.02	33.465	24.563	338.1	0.187	5.68	101.0	1.9	0.24	0.1	0.00	0.18	0.05	55	219
66	B	15.89	15.88	33.468	24.597	335.2	0.224	5.69	100.9	1.9	0.24	0.1	0.00	0.22	0.06	66	218
75	ISL	15.84	15.83	33.467	24.608	334.5	0.254	5.72	101.3	1.9	0.25	0.1	0.00	0.29	0.10	75	
77		15.82	15.81	33.467	24.613	334.1	0.261	5.72	101.2	1.9	0.25	0.1	0.00	0.31	0.11	77	217
89		15.53	15.52	33.476	24.685	327.6	0.301	5.66	99.6	1.9	0.28	0.1	0.05	0.32	0.18	89	216
100	B	15.50	15.48	33.480	24.695	326.9	0.337	5.66	99.5	2.0	0.28	0.2	0.05	0.31	0.18	100	215
110		14.15	14.13	33.394	24.919	305.7	0.368	5.49	93.9	3.4	0.46	2.4	0.07	0.21	0.19	110	214
122		12.59	12.57	33.391	25.231	276.0	0.403	5.10	84.5	6.7	0.75	6.9	0.02	0.14	0.14	123	213
125	ISL	12.47	12.45	33.391	25.254	273.9	0.411	5.07	83.7	6.9	0.77	7.3	0.02	0.13	0.14	126	
132	B	12.25	12.23	33.400	25.303	269.3	0.430	5.00	82.2	7.5	0.82	8.2	0.02	0.11	0.14	133	212
145		10.93	10.91	33.488	25.614	239.7	0.463	4.58	73.2	11.8	1.11	12.8	0.01	0.06	0.08	146	211
150	ISL	10.60	10.58	33.530	25.705	231.1	0.475	4.36	69.2	13.4	1.21	14.3	0.01	0.05	0.07	151	
157		10.24	10.22	33.589	25.813	220.9	0.491	4.06	64.0	15.8	1.35	16.4	0.01	0.04	0.07	158	210
169		9.67	9.65	33.683	25.982	204.9	0.517	3.79	59.0	21.2	1.59	20.7	0.01	0.01	0.04	170	209
185	B	9.34	9.32	33.775	26.108	193.2	0.548	3.48	53.8	24.3	1.72	22.5	0.01	0.00	0.03	186	208
200	ISL	8.92	8.90	33.856	26.239	181.0	0.576	3.19	48.9	28.0	1.87	24.8	0.01	0.00	0.02	201	
205		8.80	8.78	33.880	26.276	177.5	0.585	3.11	47.6	29.1	1.91	25.5	0.01	0.00 A	0.02 A	206	207
229		8.63	8.61	33.941	26.351	170.8	0.627	2.92	44.5	31.7	1.99	26.5	0.01			230	206
250	ISL	8.34	8.31	33.993	26.436	163.0	0.662	2.75	41.6	34.6	2.08	27.7	0.01			251	
269		8.04	8.01	34.035	26.514	155.8	0.693	2.55	38.4	37.9	2.19	29.0	0.01			270	205
300	ISL	7.61	7.58	34.083	26.615	146.5	0.739	2.05	30.5	45.2	2.42	31.6	0.01			302	
318		7.38	7.35	34.105	26.665	141.9	0.765	1.75	25.9	49.6	2.55	33.1	0.01			320	204
377		6.84	6.80	34.166	26.789	130.8	0.846	1.08	15.8	60.7	2.85	36.5	0.01			379	203
400	ISL	6.61	6.57	34.179	26.830	127.1	0.875	0.90	13.1	65.0	2.94	37.6	0.01			402	
437		6.28	6.24	34.199	26.889	121.7	0.921	0.69	10.0	71.2	3.05	39.1	0.01			440	202
500	ISL	5.95	5.91	34.250	26.972	114.4	0.996	0.46	6.6	78.4	3.17	40.5	0.01			503	
514		5.88	5.84	34.262	26.990	112.8	1.012	0.41	5.9	80.0	3.20	40.8	0.01			517	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 DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 19.8 N	121 42.7 W	01/02/98	0028 UTC	3946 m	270 11 kn	280 04 06	1	1012.2 mb	16.7 C	14.7 C	27m 01	6/8	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	16.26	16.26	33.471	24.513	341.1	0.000	5.76	102.9	2.0	0.25	0.1	0.00	0.14	0.04	0	
1		16.26	16.26	33.471	24.514	341.1	0.003	5.76	102.9	2.0	0.25	0.1	0.00	0.14	0.04	1	220
1		16.26	16.26	33.467	24.510	341.4	0.003									1	221
10	ISL	16.18	16.18	33.464	24.527	340.2	0.034	5.73	102.2	2.0	0.25	0.1	0.00	0.14	0.04	10	
14		16.12	16.12	33.458	24.536	339.4	0.048	5.71	101.7	2.0	0.25	0.1	0.00	0.14	0.04	14	219
20	ISL	16.03	16.03	33.448	24.549	338.4	0.068	5.72	101.7	2.0	0.25	0.1	0.00	0.16	0.04	20	
30		15.85	15.85	33.435	24.580	335.7	0.102	5.74	101.7	1.9	0.25	0.1	0.00	0.20	0.05	30	218
45		15.51	15.50	33.442	24.661	328.4	0.152	5.81	102.2	1.9	0.26	0.1	0.00	0.26	0.10	45	217
50	ISL	15.50	15.49	33.446	24.667	328.0	0.168	5.80	102.0	1.9	0.26	0.1	0.00	0.28	0.11	50	
55		15.50	15.49	33.449	24.669	328.0	0.184	5.79	101.8	1.9	0.26	0.1	0.00	0.32	0.14	55	216
66		15.33	15.32	33.441	24.701	325.3	0.220	5.80	101.6	2.0	0.27	0.1	0.01	0.56	0.28	66	215
74		15.01	15.00	33.426	24.760	319.9	0.246	5.74	99.9	2.2	0.32	0.5	0.15	0.57	0.36	74	214
75	ISL	14.94	14.93	33.425	24.774	318.6	0.249	5.72	99.5	2.3	0.33	0.6	0.15	0.55	0.36	75	
86		13.77	13.76	33.423	25.019	295.4	0.283	5.37	91.2	4.3	0.51	3.5	0.05	0.25	0.34	86	213
93		12.56	12.55	33.444	25.277	270.9	0.303	5.03	83.3	7.4	0.78	7.6	0.02	0.11	0.15	93	212
100	ISL	12.01	12.00	33.475	25.406	258.7	0.321	4.91	80.4	8.6	0.88	9.2	0.02	0.09	0.12	100	
110		11.62	11.61	33.512	25.507	249.2	0.347	4.82	78.2	9.6	0.94	10.4	0.01	0.06	0.08	110	211
125		10.67	10.66	33.556	25.713	229.9	0.383	4.37	69.5	14.2	1.24	15.1	0.01	0.03	0.06	126	210
142		9.77	9.75	33.655	25.943	208.1	0.420	3.89	60.7	19.8	1.53	19.7	0.00	0.01	0.05	143	209
150	ISL	9.46	9.44	33.705	26.033	199.6	0.436	3.73	57.8	22.2	1.63	21.3	0.00	0.01	0.04	151	
169		8.92	8.90	33.811	26.203	183.8	0.473	3.49	53.5	26.7	1.80	24.1	0.00	0.00	0.03	170	208
198		8.47	8.45	33.896	26.340	171.2	0.524	3.36	51.0	30.1	1.87	25.4	0.00	0.00	0.03	199	207
200	ISL	8.44	8.42	33.902	26.349	170.3	0.528	3.34	50.7	30.4	1.88	25.5	0.00			201	
229		7.96	7.94	33.971	26.475	158.7	0.575	3.05	45.8	35.5	2.03	27.7	0.00			230	206
250	ISL	7.71	7.69	34.001	26.536	153.2	0.608	2.79	41.7	39.2	2.15	29.3	0.00			251	
270		7.50	7.47	34.020	26.581	149.2	0.638	2.53	37.6	42.9	2.28	30.8	0.00			272	205
300	ISL	7.09	7.06	34.045	26.658	142.1	0.682	2.12	31.2	49.5	2.47	33.1	0.00			302	
317		6.86	6.83	34.058	26.700	138.2	0.706	1.89	27.7	53.3	2.58	34.4	0.00			319	204
378		6.35	6.32	34.117	26.815	127.9	0.787	1.16	16.8	64.8	2.88	37.9	0.00			380	203
400	ISL	6.19	6.15	34.139	26.853	124.5	0.815	0.97	14.0	68.6	2.96	38.8	0.00			402	
432		5.98	5.94	34.171	26.905	119.8	0.854	0.76	10.9	73.7	3.06	39.9	0.00			435	202
500	ISL	5.66	5.62	34.234	26.995	111.9	0.933	0.47	6.7	82.0	3.20	41.4	0.00			503	
509		5.62	5.58	34.242	27.006	110.9	0.943	0.43	6.1	83.1	3.22	41.6	0.00			512	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | 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 23.5 W	01/02/98	0622 UTC	4080 m	180 04 kn			1014.0 mb	16.2 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	15.79	15.79	33.437	24.594	333.5	0.000	5.78	102.3	1.7	0.26	0.1	0.00	0.14	0.03	0	
1		15.79	15.79	33.437	24.594	333.5	0.003	5.78	102.3	1.7	0.26	0.1	0.00	0.14	0.03	1	220
2		15.79	15.79	33.430	24.588	334.0	0.007									2	221
10	ISL	15.78	15.78	33.436	24.595	333.6	0.033	5.80	102.6	1.7	0.26	0.1	0.00	0.14	0.04	10	
14		15.78	15.78	33.436	24.596	333.7	0.047	5.81	102.8	1.7	0.26	0.1	0.00	0.14	0.04	14	219
20	ISL	15.76	15.76	33.442	24.605	333.0	0.067	5.80	102.5	1.7	0.26	0.1	0.00	0.14	0.04	20	
30		15.71	15.71	33.453	24.625	331.4	0.100	5.78	102.1	1.8	0.26	0.1	0.00	0.15	0.05	30	218
46		15.60	15.59	33.461	24.656	329.0	0.153	5.83	102.7	1.8	0.26	0.1	0.00	0.22	0.07	46	217
50	ISL	15.50	15.49	33.463	24.680	326.8	0.166	5.82	102.4	1.8	0.26	0.1	0.00	0.27	0.11	50	
54		15.40	15.39	33.464	24.703	324.7	0.179	5.80	101.8	1.8	0.27	0.1	0.00	0.33	0.17	54	216
66		15.31	15.30	33.455	24.716	323.8	0.218	5.78	101.3	2.0	0.29	0.1	0.00	0.57	0.36	66	215
75		14.82	14.81	33.441	24.812	314.9	0.247	5.65	98.0	2.7	0.34	0.8	0.09	0.74	0.63	75	214
84		13.55	13.54	33.422	25.063	291.1	0.274	5.15	87.0	5.7	0.68	5.7	0.08	0.44	0.37	84	213
94		12.20	12.19	33.426	25.332	265.6	0.302	4.86	79.8	8.7	0.93	9.8	0.03	0.22	0.29	94	212
100	ISL	11.74	11.73	33.466	25.449	254.5	0.317	4.63	75.3	10.6	1.06	11.8	0.03	0.14	0.22	100	
109		11.24	11.23	33.534	25.594	240.9	0.340	4.30	69.3	13.4	1.22	14.4	0.02	0.08	0.12	109	211
123		10.40	10.39	33.597	25.791	222.3	0.372	3.97	62.8	17.1	1.44	18.1	0.02	0.04	0.06	124	210
125	ISL	10.30	10.29	33.609	25.818	219.8	0.376	3.93	62.0	17.7	1.47	18.5	0.02	0.04	0.06	126	
145		9.53	9.51	33.723	26.036	199.3	0.418	3.59	55.8	23.0	1.67	21.8	0.02	0.01	0.03	146	209
150	ISL	9.38	9.36	33.742	26.075	195.6	0.428	3.58	55.4	23.8	1.69	22.3	0.02	0.01	0.03	151	
168		8.94	8.92	33.802	26.193	184.7	0.462	3.55	54.4	26.3	1.76	23.6	0.02	0.00	0.03	169	208
199		8.48	8.46	33.924	26.360	169.3	0.517	3.11	47.2	31.7	1.97	26.4	0.01	0.00	0.02	200	207
200	ISL	8.46	8.44	33.927	26.365	168.8	0.519	3.09	46.9	31.9	1.98	26.5	0.01			201	
226		8.00	7.98	33.994	26.487	157.5	0.561	2.68	40.3	37.6	2.15	29.1				227	206
250	ISL	7.83	7.81	34.041	26.550	152.0	0.599	2.38	35.6	41.5	2.29	30.5	0.01			251	
269		7.74	7.71	34.069	26.585	148.9	0.627	2.17	32.4	44.2	2.38	31.3				271	205
300	ISL	7.45	7.42	34.095	26.647	143.4	0.672	1.88	27.9	49.0	2.51	32.9	0.01			302	
317		7.29	7.26	34.107	26.679	140.5	0.697	1.72	25.4	51.5	2.58	33.7	0.01			319	204
379		6.99	6.95	34.186	26.784	131.4	0.781	1.06	15.6	60.0	2.85	36.2	0.01			381	203
400	ISL	6.71	6.67	34.180	26.817	128.3	0.808	0.96	14.0	63.9	2.92	37.3	0.01			402	
438		6.18	6.14	34.166	26.876	122.9	0.856	0.84	12.1	70.9	3.02	39.2	0.01			441	202
500	ISL	5.87	5.83	34.224	26.961	115.3	0.930	0.53	7.6	79.6	3.16	40.8	0.01			503	
515		5.79	5.75	34.238	26.982	113.5	0.947	0.45	6.4	81.7	3.20	41.2	0.01			518	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 39.3 N	123 4.1 W	01/02/98	1241 UTC	4124 m	220 12 kn			1013.1 mb	16.8 C	15.3 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.81	15.81	33.329	24.506	341.8	0.000	5.72	101.2	1.9	0.25	0.0	0.00	0.11	0.02	0	
2		15.80	15.80	33.329	24.509	341.6	0.007									2	221
2		15.81	15.81	33.329	24.506	341.9	0.007	5.72	101.2	1.9	0.25	0.0	0.00	0.11	0.02	2	220
10	ISL	15.80	15.80	33.329	24.509	341.9	0.034	5.73	101.3	1.8	0.25	0.0	0.00	0.11	0.02	10	
14		15.79	15.79	33.329	24.511	341.8	0.048	5.73	101.3	1.8	0.25	0.0	0.00	0.11	0.02	14	219
20	ISL	15.78	15.78	33.328	24.513	341.8	0.068	5.73	101.3	1.8	0.25	0.0	0.00	0.11	0.02	20	
30		15.77	15.77	33.329	24.516	341.8	0.103	5.74	101.4	1.8	0.25	0.0	0.00	0.11	0.02	30	218
43		15.76	15.75	33.336	24.524	341.4	0.147	5.74	101.4	1.8	0.25	0.0	0.00	0.12	0.03	43	217
50	ISL	15.74	15.73	33.346	24.537	340.5	0.171	5.74	101.4	1.8	0.26	0.0	0.00	0.14	0.03	50	
54		15.72	15.71	33.351	24.545	339.8	0.184	5.74	101.3	1.8	0.26	0.0	0.00	0.15	0.04	54	216
64		15.66	15.65	33.352 D	24.560	338.7	0.218	5.73	101.0	1.8	0.25	0.0	0.00	0.19	0.07	64	215
75		15.60	15.59	33.381	24.596	335.6	0.255	5.69	100.2	1.8	0.25	0.0	0.00	0.27	0.17	75	214
86		15.07	15.06	33.357	24.694	326.5	0.292	5.64	98.3	2.2	0.33	0.4	0.20	0.31	0.19	86	213
94		14.54	14.53	33.404	24.844	312.4	0.317	5.55	95.7	2.5	0.38	1.2	0.11	0.28	0.20	94	212
100	ISL	14.11	14.10	33.407	24.937	303.7	0.336	5.50	94.0	3.0	0.43	1.9	0.06	0.24	0.19	100	
111		13.22	13.20	33.403	25.116	286.8	0.368	5.36	89.9	4.6	0.57	4.0	0.02	0.16	0.15	111	211
124		12.02	12.00	33.462	25.395	260.4	0.404	4.97	81.3	7.8	0.82	8.3	0.02	0.07	0.09	125	210
125	ISL	11.93	11.91	33.463	25.412	258.7	0.407	4.95	80.9	8.0	0.84	8.6	0.02	0.07	0.09	126	
144		10.42	10.40	33.507	25.718	229.7	0.453	4.56	72.1	12.9	1.16	13.8	0.01	0.04	0.06	145	209
150	ISL	10.11	10.09	33.553	25.807	221.3	0.466	4.38	68.8	15.0	1.27	15.6	0.01	0.03	0.05	151	
170		9.41	9.39	33.718	26.052	198.3	0.508	3.80	58.9	21.9	1.61	21.0	0.01	0.01	0.03	171	208
199		8.94	8.92	33.845	26.227	182.1	0.564	3.35	51.4	27.4	1.84	24.5	0.01	0.01	0.02	200	207
200	ISL	8.92	8.90	33.849	26.233	181.5	0.565	3.34	51.2	27.6	1.84	24.6	0.01			201	
230		8.19	8.17	33.939	26.416	164.4	0.617	3.24	48.9	33.1	1.95	26.7	0.01			231	206
250	ISL	7.82	7.80	33.963	26.490	157.6	0.649	3.21	48.0	36.2	2.01	27.7	0.01			251	
270		7.52	7.49	33.975	26.543	152.8	0.681	3.11	46.2	39.2	2.08	28.7	0.01			271	205
300	ISL	7.23	7.20	34.006	26.608	146.9	0.725	2.64	39.0	44.6	2.27	31.0	0.01			302	
318		7.09	7.06	34.026	26.643	143.7	0.752	2.30	33.8	48.2	2.40	32.5	0.01			320	204
377		6.50	6.47	34.100	26.782	131.2	0.833	1.37	19.9	61.5	2.79	37.0	0.01			379	203
400	ISL	6.28	6.24	34.115	26.822	127.5	0.862	1.15	16.6	65.9	2.89	38.2	0.01			402	
435		5.98	5.94	34.134	26.876	122.6	0.906	0.91	13.1	72.0	3.00	39.6	0.01			438	202
500	ISL	5.59	5.55	34.190	26.969	114.3	0.983	0.59	8.4	81.3	3.17	41.4	0.01			503	
513		5.51	5.47	34.201	26.987	112.6	0.998	0.53	7.5	83.1	3.20	41.8	0.01			516	201

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — 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 44.6 W	01/02/98	1856 UTC	3863 m	200 16 kn	250 06 09	0	1014.9 mb	18.5 C	17.0 C	50m 01	0/8	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	16.43	16.43	33.474	24.477	344.6	0.000	5.65	101.2	2.1	0.23	0.1	0.00	0.11	0.03	0	
1		16.49	16.49	33.474	24.463	345.9	0.003									1	224
2	A	16.43	16.43	33.474	24.477	344.7	0.007	5.65	101.2	2.1	0.23	0.1	0.00	0.11	0.03	2	223
10	ISL	16.42	16.42	33.474	24.479	344.7	0.034	5.65	101.2	2.1	0.23	0.1	0.00	0.11	0.02	10	
18		16.42	16.42	33.474	24.480	344.9	0.062	5.64	101.0	2.1	0.23	0.1	0.00	0.12	0.02	18	222
20	ISL	16.42	16.42	33.475	24.481	344.9	0.069	5.64	101.0	2.1	0.23	0.1	0.00	0.12	0.02	20	
30	ISL	16.40	16.40	33.475	24.486	344.7	0.103	5.64	101.0	2.1	0.24	0.1	0.00	0.12	0.03	30	
32	A	16.39	16.38	33.475	24.488	344.6	0.110	5.64	101.0	2.1	0.24	0.1	0.00	0.12	0.03	32	221
44		16.31	16.30	33.462	24.497	344.1	0.152	5.65	101.0	2.1	0.23	0.1	0.00	0.13	0.03	44	220
50	ISL	16.30	16.29	33.461	24.498	344.2	0.172	5.66	101.1	2.1	0.23	0.1	0.00	0.13	0.03	50	
57		16.29	16.28	33.460	24.500	344.2	0.196	5.66	101.1	2.1	0.23	0.1	0.00	0.13	0.04	57	219
68	A	16.22	16.21	33.445	24.505	344.1	0.234	5.66	101.0	2.1	0.23	0.1	0.00	0.15	0.04	68	218
75	ISL	16.11	16.10	33.435	24.523	342.6	0.258	5.67	100.9	2.0	0.23	0.1	0.00	0.18	0.05	75	
79		16.05	16.04	33.431	24.533	341.7	0.272	5.67	100.8	2.0	0.23	0.1	0.00	0.19	0.06	79	217
90		16.03	16.02	33.435	24.541	341.3	0.310	5.68	100.9	2.0	0.23	0.1	0.00	0.20	0.08	90	216
100	ISL	16.02	16.00	33.462	24.565	339.4	0.344	5.67	100.7	2.0	0.23	0.1	0.00	0.24	0.12	100	
102	A	16.02	16.00	33.470	24.571	338.9	0.350	5.66	100.6	2.0	0.23	0.1	0.00	0.25	0.13	102	215
112		15.90	15.88	33.488	24.612	335.3	0.384	5.63	99.8	2.0	0.24	0.1	0.04	0.30	0.21	112	214
122		15.38	15.36	33.495	24.734	323.9	0.417	5.56	97.6	2.4	0.30	0.6	0.13	0.26	0.20	123	213
125	ISL	14.79	14.77	33.466	24.840	313.8	0.427	5.51	95.5	2.8	0.36	1.3	0.11	0.24	0.19	126	
136	A	12.39	12.37	33.400	25.276	272.0	0.459	5.23	86.2	5.6	0.67	5.6	0.02	0.14	0.15	137	212
148		10.92	10.90	33.466	25.599	241.2	0.490	4.68	74.8	11.5	1.08	12.5	0.02	0.05	0.08	149	211
150	ISL	10.79	10.77	33.479	25.632	238.1	0.494	4.61	73.5	12.3	1.13	13.2	0.02	0.05	0.07	151	
160		10.31	10.29	33.539	25.762	225.8	0.518	4.34	68.5	15.6	1.31	16.1	0.02	0.04	0.05	161	210
174		9.71	9.69	33.618	25.925	210.5	0.548	4.01	62.5	19.2	1.49	19.2	0.02	0.02	0.03	175	209
187	A	9.30	9.28	33.728	26.078	196.1	0.575	3.58	55.3	23.7	1.70	22.5	0.02	0.00	0.03	188	208
200	ISL	9.06	9.04	33.795	26.169	187.7	0.600	3.38	52.0	26.1	1.80	24.0	0.02	0.00	0.02	201	
209		8.94	8.92	33.828	26.214	183.5	0.616	3.30	50.6	27.3	1.84	24.6	0.02	0.00	0.02	210	207
229		8.62	8.60	33.903	26.323	173.5	0.652	3.12	47.5	30.5	1.94	26.1	0.02			230	206
250	ISL	8.32	8.29	33.973	26.424	164.2	0.687	2.88	43.6	34.3	2.06	27.5	0.02			251	
269		8.05	8.02	34.022	26.503	156.9	0.718	2.66	40.0	37.9	2.17	28.8	0.02			270	205
300	ISL	7.59	7.56	34.049	26.591	148.7	0.765	2.35	35.0	43.4	2.32	30.8	0.02			302	
318		7.34	7.31	34.054	26.631	145.1	0.792	2.17	32.1	46.7	2.41	32.0	0.02			320	204
377		6.72	6.69	34.095	26.749	134.5	0.874	1.53	22.3	58.6	2.71	35.8	0.02			379	203
400	ISL	6.49	6.45	34.102	26.785	131.2	0.905	1.35	19.6	62.6	2.80	37.0	0.02			402	
436		6.17	6.13	34.115	26.837	126.5	0.951	1.10	15.8	68.3	2.92	38.6	0.02			439	202
500	ISL	5.87	5.83	34.176	26.923	118.9	1.030	0.70	10.0	76.7	3.09	40.4	0.01			503	
514		5.81	5.77	34.190	26.942	117.3	1.046	0.61	8.7	78.5	3.13	40.8	0.01			517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 28.5 N	117 45.5 W	29/01/98	1817 UTC	64 m	170 20 kn	170 02 03	6	1016.2 mb	17.0 C	17.0 C	13m 03	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	17.54	17.54	33.940	24.573	335.4	0.000	5.45	100.1	2.7	0.38	0.4	0.22	1.55	0.63	0	
1		17.54	17.54	33.941	24.574	335.4	0.003									1	209
2	A	17.54	17.54	33.940	24.573	335.5	0.007	5.45	100.1	2.7	0.38	0.4	0.22	1.55	0.63	2	208
9	A	17.55	17.55	33.943	24.573	335.7	0.030	5.44	99.9	2.7	0.37	0.4	0.22	1.54	0.63	9	207
10	ISL	17.55	17.55	33.944	24.574	335.7	0.034	5.44	99.9	2.7	0.37	0.4	0.22	1.51	0.62	10	
18	A	17.57	17.57	33.957	24.580	335.4	0.060	5.44	100.0	2.8	0.37	0.3	0.22	1.23	0.51	18	206
20	ISL	17.57	17.57	33.957	24.580	335.5	0.067	5.43	99.8	2.8	0.37	0.3	0.23	1.17	0.49	20	
27	A	17.57	17.57	33.965	24.586	335.1	0.091	5.40	99.2	2.8	0.36	0.4	0.25	0.92	0.42	27	205
30	ISL	17.50	17.49	33.954	24.595	334.4	0.101	5.40	99.1	2.8	0.36	0.4	0.21	0.73	0.38	30	
35	A	17.36	17.35	33.931	24.611	333.1	0.117	5.39	98.6	2.8	0.36	0.3	0.18	0.43	0.32	35	204
42		17.22	17.21	33.906	24.625	331.9	0.141	5.13	93.6	3.8	0.48	1.5	0.33	0.28	0.22	42	203
49	A	17.24	17.23	33.919	24.631	331.6	0.164	5.06	92.4	4.1	0.50	1.8	0.43	0.27	0.24	49	202
50	ISL	17.22	17.21	33.918	24.635	331.3	0.167	5.03	91.8	4.2	0.52	1.9	0.45	0.27	0.24	50	
57		17.10	17.09	33.912	24.659	329.2	0.190	4.86	88.5	5.2	0.63	2.7	0.62	0.24	0.27	57	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — 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 54.3 W	29/01/98	1205 UTC	607 m	110 12 kn			1016.5 mb	17.0 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	17.60	17.60	33.990	24.597	333.2	0.000	5.41	99.5	2.1	0.35	0.3	0.21	0.60	0.29	0	
1		17.60	17.60	33.990	24.597	333.2	0.003	5.41	99.5	2.1	0.35	0.3	0.21	0.60	0.29	1	220
1		17.61	17.61	33.990	24.595	333.4	0.003									1	221
9		17.61	17.61	33.991	24.596	333.6	0.030	5.41	99.5	2.2	0.35	0.2	0.20	0.64	0.27	9	219
10	ISL	17.61	17.61	33.991	24.596	333.6	0.033	5.41	99.5	2.2	0.35	0.2	0.20	0.64	0.27	10	
20		17.60	17.60	33.990	24.598	333.8	0.067	5.41	99.5	2.2	0.36	0.2	0.19	0.67	0.28	20	218
29		17.48	17.48	33.934	24.584	335.4	0.097	5.40	99.0	2.1	0.35	0.3	0.20	0.58	0.36	29	217
30	ISL	17.46	17.45	33.927	24.583	335.5	0.100	5.40	99.0	2.1	0.35	0.3	0.19	0.58	0.35	30	
39		17.25	17.24	33.871	24.591	335.0	0.130	5.45	99.5	2.1	0.33	0.2	0.12	0.55	0.26	39	216
49		17.11	17.10	33.840	24.601	334.5	0.164	5.47	99.5	2.1	0.32	0.1	0.08	0.51	0.27	49	215
50	ISL	17.10	17.09	33.838	24.602	334.4	0.167	5.47	99.5	2.1	0.32	0.1	0.08	0.51	0.27	50	
58		17.05	17.04	33.822	24.602	334.7	0.194	5.46	99.2	2.1	0.33	0.2	0.11	0.45	0.25	58	214
70		16.32	16.31	33.684	24.666	328.9	0.234	5.31	95.1	3.1	0.38	1.0	0.30	0.13	0.16	70	213
75	ISL	15.98	15.97	33.697	24.754	320.7	0.250	4.91	87.3	4.8	0.55	3.2	0.21	0.07	0.13	75	
83		15.39	15.38	33.733	24.913	305.6	0.275	4.24	74.5	7.8	0.85	7.1	0.03	0.04	0.10	83	212
100		13.82	13.81	33.653	25.187	279.8	0.325	4.07	69.3	10.1	1.01	9.8	0.02	0.04	0.08	100	211
119		13.32	13.30	33.847	25.440	256.3	0.376	3.21	54.1	14.6	1.38	14.9	0.01	0.01	0.06	120	210
125	ISL	13.03	13.01	33.839	25.492	251.4	0.391	3.23	54.1	15.0	1.39	15.3	0.01	0.01	0.06	126	
139		12.34	12.32	33.811	25.605	240.9	0.425	3.28	54.2	16.1	1.41	16.1	0.01	0.01	0.06	140	209
150	ISL	12.06	12.04	33.904	25.731	229.2	0.451	2.90	47.6	19.0	1.60	18.5	0.01	0.01	0.06	151	
169		11.71	11.69	34.099	25.948	208.9	0.493	2.11	34.4	24.7	1.96	23.0	0.01	0.01	0.05	170	208
199		10.89	10.87	34.206	26.182	187.2	0.552	1.71	27.4	29.4	2.19	25.6	0.00	0.00	0.04	200	207
200	ISL	10.86	10.84	34.205	26.186	186.8	0.554	1.72	27.6	29.5	2.19	25.6	0.00			201	
228		10.03	10.00	34.148	26.286	177.6	0.605	1.94	30.5	31.9	2.18	26.6	0.00			229	206
250	ISL	9.64	9.61	34.175	26.373	169.7	0.643	1.82	28.4	34.5	2.26	27.8	0.00			251	
267		9.41	9.38	34.209	26.438	163.8	0.672	1.66	25.8	36.7	2.34	28.8	0.00			268	205
300	ISL	8.95	8.92	34.239	26.536	154.9	0.724	1.46	22.4	40.7	2.46	30.2	0.00			302	
318		8.72	8.69	34.250	26.581	150.9	0.752	1.36	20.8	43.0	2.52	30.9	0.00			320	204
377		8.11	8.07	34.279	26.697	140.6	0.838	1.00	15.1	51.1	2.73	33.2	0.00			379	203
400	ISL	7.93	7.89	34.281	26.726	138.1	0.870	0.90	13.5	53.5	2.79	33.9	0.00			402	
435		7.67	7.63	34.283	26.766	134.7	0.918	0.77	11.5	57.3	2.87	34.9	0.00			438	202
500	ISL	7.02	6.97	34.310	26.879	124.4	1.002	0.47	6.9	67.3	3.04	37.1	0.00			503	
514		6.88	6.83	34.316	26.903	122.3	1.019	0.41	6.0	69.4	3.08	37.6	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 15.0 W	29/01/98	0824 UTC	355 m	210 10 kn			1017.5 mb	17.5 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	17.22	17.22	33.873	24.598	333.0	0.000	5.52	100.7	1.6	0.31	0.2	0.01	0.28	0.15	0	
1		17.21	17.21	33.873	24.601	332.8	0.003									1	219
2		17.22	17.22	33.873	24.598	333.1	0.007	5.52	100.7	1.6	0.31	0.2	0.01	0.28	0.15	2	218
10	ISL	17.21	17.21	33.873	24.601	333.1	0.033	5.52	100.7	1.6	0.31	0.2	0.01	0.27	0.14	10	
15		17.21	17.21	33.874	24.602	333.2	0.050	5.52	100.7	1.6	0.31	0.2	0.01	0.26	0.13	15	217
20	ISL	17.20	17.20	33.872	24.603	333.3	0.067	5.53	100.8	1.6	0.31	0.2	0.01	0.26	0.14	20	
30		17.15	17.15	33.861	24.607	333.2	0.100	5.54	100.9	1.6	0.30	0.1	0.01	0.27	0.15	30	216
45		16.97	16.96	33.816	24.615	332.9	0.150	5.52	100.2	1.7	0.31	0.1	0.01	0.34	0.24	45	215
50	ISL	16.72	16.71	33.760	24.631	331.6	0.167	5.55	100.2	1.7	0.30	0.2	0.01	0.33	0.23	50	
55		16.46	16.45	33.703	24.648	330.1	0.183	5.57	100.0	1.8	0.29	0.2	0.01	0.32	0.23	55	214
66		16.24	16.23	33.634	24.646	330.6	0.219	5.55	99.2	1.9	0.30	0.2	0.04	0.30	0.19	66	213
75		15.84	15.83	33.618	24.724	323.4	0.249	5.25	93.0	3.2	0.47	2.1	0.16	0.16	0.13	75	212
86		14.61	14.60	33.613	24.990	298.3	0.283	4.40	76.1	7.2	0.84	7.0	0.04	0.05	0.10	86	211
95		14.30	14.29	33.684	25.111	287.0	0.309	4.04	69.4	9.1	1.01	9.1	0.03	0.03	0.07	95	210
100	ISL	14.16	14.15	33.718	25.167	281.8	0.324	3.86	66.2	10.0	1.09	10.2	0.03	0.02	0.06	100	
111		13.79	13.77	33.800	25.307	268.7	0.354	3.44	58.6	12.5	1.27	12.9	0.02	0.01	0.05	111	209
124		13.01	12.99	33.934	25.569	244.1	0.387	2.79	46.8	17.1	1.60	17.4	0.01	0.01	0.05	125	208
125	ISL	12.96	12.94	33.939	25.583	242.8	0.390	2.77	46.4	17.3	1.61	17.6	0.01	0.01	0.05	126	
144		12.20	12.18	33.997	25.776	224.7	0.434	2.50	41.2	20.5	1.80	20.3	0.01	0.01	0.05	145	207
150	ISL	12.04	12.02	34.026	25.829	219.8	0.447	2.38	39.1	21.6	1.86	21.1	0.01	0.01	0.05	151	
169		11.51	11.49	34.100	25.986	205.2	0.488	2.09	34.0	24.9	2.02	23.3	0.01	0.00	0.05	170	206
199		10.14	10.12	34.091	26.223	183.0	0.546	2.17	34.2	29.0	2.11	25.4	0.00	0.00	0.04	200	205
200	ISL	10.13	10.11	34.095	26.228	182.6	0.548	2.16	34.1	29.2	2.12	25.5	0.00			201	
228		9.92	9.89	34.201	26.346	171.9	0.597	1.73	27.2	33.3	2.31	27.5	0.02			229	204
250	ISL	9.54	9.51	34.222	26.426	164.6	0.634	1.62	25.2	35.9	2.39	28.5	0.02			251	
267		9.23	9.20	34.224	26.479	159.8	0.662	1.59	24.6	37.7	2.43	29.0	0.01			268	203
300	ISL	8.94	8.91	34.248	26.544	154.1	0.714	1.42	21.8	40.7	2.53	30.1	0.01			302	
304		8.91	8.88	34.250	26.551	153.6	0.720	1.40	21.5	41.1	2.54	30.2	0.01			306	202
342		8.51	8.47	34.251	26.614	148.0	0.777	1.26	19.2	45.4	2.63	31.5	0.01			344	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 23.2 W	29/01/98	0554 UTC	1174 m	230 09 kn			1017.6 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	16.60	16.60	33.703	24.613	331.6	0.000	5.62	101.2	1.7	0.28	0.1	0.00	0.21	0.07	0	
1		16.60	16.60	33.703	24.613	331.6	0.003	5.62	101.2	1.7	0.28	0.1	0.00	0.21	0.07	1	220
2		16.59	16.59	33.703	24.616	331.4	0.007									2	221
10	ISL	16.54	16.54	33.692	24.619	331.4	0.033	5.64	101.4	1.7	0.28	0.0	0.00	0.22	0.09	10	
15		16.49	16.49	33.683	24.624	331.1	0.050	5.65	101.5	1.7	0.28	0.0	0.00	0.22	0.10	15	219
20	ISL	16.46	16.46	33.674	24.624	331.2	0.066	5.65	101.4	1.7	0.28	0.0	0.00	0.23	0.11	20	
29		16.41	16.41	33.660	24.625	331.4	0.096	5.66	101.5	1.7	0.28	0.0	0.00	0.26	0.12	29	218
30	ISL	16.41	16.41	33.660	24.625	331.4	0.099	5.65	101.3	1.7	0.28	0.0	0.00	0.27	0.13	30	
44		16.35	16.34	33.663	24.642	330.3	0.146	5.60	100.3	1.7	0.28	0.1	0.00	0.44	0.26	44	217
50	ISL	16.34	16.33	33.666	24.647	330.0	0.166	5.63	100.8	1.7	0.28	0.1	0.00	0.43	0.28	50	
54		16.33	16.32	33.667	24.650	329.9	0.179	5.64	101.0	1.8	0.28	0.1	0.01	0.43	0.28	54	216
64		16.23	16.22	33.658	24.666	328.6	0.212	5.58	99.7	2.0	0.30	0.0	0.03	0.38	0.30	64	215
75		16.11	16.10	33.643	24.682	327.4	0.248	5.50	98.0	2.1	0.33	0.4	0.09	0.34	0.24	75	214
84		15.31	15.30	33.537	24.780	318.3	0.277	5.28	92.5	3.7	0.48	2.3	0.17	0.29	0.23	84	213
95		13.81	13.80	33.529	25.093	288.6	0.310	4.61	78.4	7.3	0.82	7.1	0.03	0.10	0.14	95	212
100	ISL	13.35	13.34	33.559	25.210	277.5	0.324	4.38	73.8	8.8	0.93	8.8	0.03	0.08	0.11	100	
110		12.71	12.70	33.636	25.397	260.0	0.351	4.02	66.8	11.4	1.12	11.7	0.02	0.05	0.07	110	211
125		12.20	12.18	33.717	25.558	244.9	0.389	3.60	59.2	14.6	1.34	15.0	0.01	0.02	0.06	126	210
144		11.22	11.20	33.826	25.825	219.8	0.433	3.11	50.2	19.6	1.65	19.3	0.01	0.01	0.05	145	209
150	ISL	11.21	11.19	33.905	25.889	213.9	0.446	2.85	46.0	21.2	1.76	20.6	0.01	0.01	0.05	151	
168		11.17	11.15	34.098	26.047	199.4	0.483	2.15	34.7	25.6	2.02	23.8	0.01	0.00	0.05	169	208
199		9.89	9.87	34.065	26.245	180.8	0.542	2.26	35.5	29.7	2.09	25.8	0.00	0.00	0.04	200	207
200	ISL	9.87	9.85	34.069	26.251	180.2	0.544	2.25	35.3	29.9	2.10	25.9	0.00			201	
226		9.62	9.59	34.182	26.381	168.4	0.589	1.87	29.2	33.9	2.28	27.7	0.00			227	206
250	ISL	9.34	9.31	34.244	26.476	159.8	0.629	1.57	24.4	37.5	2.43	29.1	0.00			251	
268		9.13	9.10	34.270	26.531	154.9	0.657	1.40	21.6	39.9	2.52	29.9	0.00			269	205
300	ISL	8.80	8.77	34.275	26.587	150.0	0.706	1.27	19.5	42.8	2.59	30.9	0.00			302	
317		8.63	8.60	34.269	26.609	148.1	0.731	1.23	18.8	44.3	2.62	31.4	0.00			319	204
378		7.99	7.95	34.279	26.715	138.8	0.819	0.92	13.8	52.6	2.81	33.8	0.00			380	203
400	ISL	7.75	7.71	34.284	26.754	135.3	0.849	0.80	12.0	55.7	2.88	34.7	0.00			402	
439		7.34	7.30	34.296	26.823	129.1	0.900	0.61	9.0	61.3	3.00	36.3	0.00			442	202
500	ISL	6.76	6.71	34.316	26.919	120.4	0.977	0.43	6.3	70.5	3.13	38.2	0.00			503	
512		6.65	6.60	34.320	26.937	118.7	0.991	0.39	5.7	72.3	3.16	38.6	0.00			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.7 N	118 55.4 W	29/01/98	0051	UTC	1696 m	270 09 kn	270 03 04	1	1017.0 mb	18.6 C	16.8 C		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	16.57	16.57	33.649	24.579	334.9	0.000	5.65	101.6	2.1	0.30	0.1	0.00	0.24	0.07	0	
1		16.58	16.58	33.649	24.577	335.1	0.003									1	221
1		16.57	16.57	33.649	24.579	334.9	0.003	5.65	101.6	2.1	0.30	0.1	0.00	0.24	0.07	1	220
10	ISL	16.56	16.56	33.671	24.598	333.3	0.033	5.66	101.8	2.1	0.29	0.1	0.00	0.27	0.10	10	
15		16.56	16.56	33.694	24.616	331.8	0.050	5.66	101.8	2.0	0.29	0.1	0.00	0.30	0.12	15	219
20	ISL	16.53	16.53	33.706	24.633	330.4	0.067	5.65	101.6	1.9	0.30	0.1	0.00	0.34	0.13	20	
30		16.48	16.48	33.755	24.682	326.0	0.099	5.64	101.3	1.7	0.32	0.1	0.01	0.43	0.18	30	218
44		15.02	15.01	33.511	24.822	313.1	0.144	5.33	92.9	3.7	0.46	2.0	0.17	0.47	0.36	44	217
50	ISL	14.47	14.46	33.489	24.923	303.6	0.163	5.17	89.1	5.1	0.58	4.0	0.12	0.32	0.28	50	
53		14.25	14.24	33.503	24.980	298.2	0.172	5.02	86.1	6.0	0.67	5.2	0.08	0.23	0.23	53	216
64		14.08	14.07	33.742	25.201	277.5	0.203	3.70	63.3	11.3	1.17	11.4	0.03	0.02	0.09	64	215
71		13.60	13.59	33.772	25.323	266.0	0.222	3.55	60.2	12.6	1.27	12.8	0.03	0.01	0.09	71	214
75	ISL	13.44	13.43	33.797	25.375	261.2	0.233	3.41	57.6	13.3	1.33	13.6	0.03	0.01	0.09	75	
83		13.23	13.22	33.849	25.458	253.5	0.254	3.16	53.2	14.7	1.44	15.0	0.02	0.01	0.09	83	213
93		12.96	12.95	33.898	25.550	245.0	0.278	3.08	51.6	16.3	1.53	16.4	0.01	0.01	0.08	93	212
100	ISL	12.72	12.71	33.959	25.645	236.1	0.295	2.81	46.8	18.1	1.65	18.1	0.01	0.01	0.07	100	
109		12.34	12.33	34.017	25.764	225.0	0.316	2.51	41.5	20.2	1.79	20.0	0.01	0.01	0.07	110	211
123		11.56	11.54	33.958	25.865	215.6	0.347	2.67	43.4	21.5	1.79	20.5	0.02	0.01	0.08	124	210
125	ISL	11.56	11.54	33.976	25.880	214.3	0.351	2.61	42.4	21.9	1.82	20.8	0.02	0.01	0.08	126	
144		11.61	11.59	34.154	26.009	202.5	0.391	1.94	31.6	25.9	2.10	23.8	0.01	0.01	0.05	145	209
150	ISL	11.39	11.37	34.168	26.061	197.7	0.403	1.93	31.3	26.9	2.14	24.4	0.01	0.01	0.04	151	
168		10.57	10.55	34.165	26.206	184.1	0.437	1.88	30.0	29.5	2.20	25.7	0.01	0.01	0.03	169	208
199		9.66	9.64	34.148	26.348	171.0	0.492	1.90	29.7	33.5	2.27	27.2	0.01	0.00	0.04	200	207
200	ISL	9.63	9.61	34.150	26.354	170.4	0.494	1.89	29.5	33.7	2.28	27.3	0.01			201	
225		9.08	9.06	34.199	26.482	158.5	0.535	1.66	25.6	38.5	2.41	29.2	0.01			226	206
250	ISL	8.83	8.80	34.223	26.541	153.3	0.574	1.50	23.0	41.2	2.49	30.1	0.01			251	
267		8.70	8.67	34.231	26.568	151.1	0.600	1.40	21.4	42.8	2.54	30.6	0.01			269	205
300	ISL	8.20	8.17	34.243	26.654	143.2	0.648	1.19	18.0	48.5	2.68	32.3	0.01			302	
317		7.96	7.93	34.250	26.696	139.5	0.672	1.08	16.2	51.4	2.75	33.1	0.01			319	204
377		7.75	7.71	34.292	26.760	134.3	0.755	0.79	11.8	55.9	2.87	34.4	0.01			379	203
400	ISL	7.63	7.59	34.298	26.783	132.5	0.785	0.71	10.6	57.7	2.92	34.9	0.01			403	
435		7.40	7.36	34.303	26.820	129.3	0.831	0.61	9.1	60.9	2.99	35.7	0.01			438	202
500	ISL	6.87	6.82	34.311	26.901	122.3	0.913	0.50	7.3	68.6	3.10	37.5	0.01			503	
514		6.76	6.71	34.313	26.917	120.8	0.930	0.48	7.0	70.3	3.12	37.9	0.01			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 39.0 N	119 28.9 W	28/01/98	1833	UTC	1315 m	270 10 kn	300 06 06	2	1018.5 mb	17.5 C	16.0 C	37m 02	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	16.15	16.15	33.515	24.572	335.5	0.000	5.64	100.5	1.7	0.26	0.0	0.00	0.22	0.08	0	
1		16.24	16.24	33.515	24.552	337.5	0.003									1	223
1	A	16.15	16.15	33.515	24.572	335.5	0.003	5.64	100.5	1.7	0.26	0.0	0.00	0.22	0.08	1	222
10	ISL	16.14	16.14	33.514	24.574	335.6	0.034	5.64	100.5	1.7	0.26	0.0	0.00	0.23	0.08	10	
13		16.14	16.14	33.514	24.574	335.7	0.044	5.64	100.5	1.7	0.26	0.0	0.00	0.24	0.08	13	221
20	ISL	16.14	16.14	33.514	24.575	335.9	0.067	5.64	100.5	1.7	0.26	0.0	0.00	0.24	0.08	20	
25	A	16.14	16.14	33.514	24.575	336.1	0.084	5.64	100.5	1.7	0.26	0.0	0.00	0.23	0.08	25	220
30	ISL	16.14	16.14	33.514	24.575	336.2	0.101	5.64	100.5	1.7	0.26	0.0	0.00	0.23	0.08	30	
38		16.14	16.13	33.514	24.575	336.4	0.128	5.63	100.3	1.7	0.26	0.0	0.00	0.23	0.09	38	219
50	ISL	16.14	16.13	33.514	24.576	336.8	0.168	5.64	100.5	1.7	0.26	0.0	0.00	0.26	0.10	50	
51	A	16.14	16.13	33.514	24.576	336.8	0.171	5.64	100.5	1.7	0.26	0.0	0.00	0.26	0.10	51	218
62		16.14	16.13	33.514	24.576	337.1	0.208	5.62	100.1	1.7	0.26	0.0	0.00	0.24	0.08	62	217
75	ISL	16.14	16.13	33.514	24.577	337.5	0.252	5.64	100.5	1.7	0.26	0.0	0.00	0.23	0.09	75	
76	A	16.14	16.13	33.514	24.577	337.5	0.256	5.64	100.5	1.7	0.26	0.0	0.00	0.23	0.09	76	216
82		16.14	16.13	33.514	24.577	337.7	0.276	5.63	100.3	1.7	0.26	0.0	0.00	0.24	0.09	82	215
90		15.96	15.95	33.508	24.613	334.5	0.303	5.59	99.2	1.8	0.29	0.2	0.04	0.22	0.10	90	214
99	A	15.53	15.51	33.474	24.683	328.0	0.333	5.57	98.0	2.2	0.33	0.6	0.08	0.19	0.14	99	213
100	ISL	15.35	15.33	33.461	24.713	325.2	0.336	5.56	97.5	2.4	0.35	0.8	0.08	0.19	0.14	100	
109		13.61	13.59	33.370	25.012	296.7	0.364	5.39	91.2	4.0	0.53	3.2	0.03	0.16	0.17	109	212
120		12.88	12.86	33.378	25.164	282.4	0.396	5.19	86.5	5.8	0.68	5.5	0.02	0.12	0.15	121	211
125	ISL	12.59	12.57	33.399	25.237	275.5	0.410	5.05	83.6	6.6	0.76	6.8	0.01	0.10	0.12	126	
129		12.37	12.35	33.424	25.299	269.7	0.421	4.92	81.1	7.5	0.83	8.0	0.01	0.08	0.10	130	210
138	A	11.83	11.81	33.502	25.461	254.3	0.444	4.51	73.5	10.9	1.06	11.1	0.01	0.05	0.08	139	209
150	ISL	11.29	11.27	33.622	25.654	236.2	0.474	3.96	63.9	15.0	1.32	14.9	0.01	0.03	0.06	151	
164		10.83	10.81	33.758	25.843	218.5	0.505	3.37	53.9	19.2	1.56	18.6	0.01	0.01	0.05	165	208
194		10.29	10.27	33.965	26.099	194.7	0.567	2.52	39.9	25.8	1.94	23.2	0.01	0.00	0.03	195	207
200	ISL	10.19	10.17	33.989	26.135	191.4	0.579	2.45	38.7	26.7	1.98	23.8	0.01			201	
231		9.67	9.64	34.078	26.292	176.9	0.636	2.20	34.3	31.0	2.14	26.0	0.01			232	206
250	ISL	9.37	9.34	34.143	26.392	167.7	0.669	1.91	29.6	34.4	2.28	27.4	0.01			251	
269		9.06	9.03	34.190	26.479	159.7	0.700	1.67	25.7	37.8	2.40	28.7	0.01			270	205
300	ISL	8.39	8.36	34.165	26.564	151.9	0.748	1.77	26.9	42.1	2.43	30.1	0.01			302	
321		7.93	7.90	34.130	26.606	148.0	0.780	1.90	28.5	44.9	2.45	30.9	0.01			323	204
378		7.08	7.04	34.116	26.717	137.8	0.861	1.61	23.7	53.8	2.64	33.9	0.01			380	203
400	ISL	6.96	6.92	34.151	26.761	133.9	0.891	1.33	19.5	57.4	2.75	35.0	0.01			402	
438		6.85	6.81	34.218	26.829	128.0	0.941	0.84	12.3	63.3	2.94	36.6	0.00			441	202
500	ISL	6.47	6.42	34.247	26.903	121.5	1.018	0.60	8.7	70.3	3.08	38.2	0.00			503	
517		6.37	6.32	34.256	26.923	119.7	1.039	0.54	7.8	72.2	3.12	38.7	0.00			520	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | 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 57.7 W	28/01/98	1336 UTC	834 m	270 10 kn			1017.5 mb	16.0 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	16.06	16.06	33.500	24.581	334.6	0.000	5.66	100.7	1.1	0.25	0.0	0.00	0.21	0.05	0	
1	16.06	16.06	33.500	24.581	334.7	0.003	5.66	100.7	1.1	0.25	0.0	0.00	0.21	0.05	1	220
1	16.06	16.06	33.501	24.582	334.6	0.003									1	221
10 ISL	16.06	16.06	33.500	24.582	334.9	0.033	5.67	100.9	1.1	0.25	0.0	0.00	0.20	0.06	10	
14	16.06	16.06	33.500	24.582	335.0	0.047	5.68	101.1	1.1	0.25	0.0	0.00	0.20	0.06	14	219
20 ISL	16.06	16.06	33.500	24.582	335.2	0.067	5.68	101.1	1.1	0.25	0.0	0.00	0.23	0.07	20	
28	16.06	16.06	33.501	24.583	335.4	0.094	5.67	100.9	1.2	0.26	0.0	0.00	0.28	0.09	28	218
30 ISL	16.06	16.06	33.501	24.583	335.4	0.101	5.67	100.9	1.2	0.26	0.0	0.00	0.28	0.09	30	
45	16.04	16.03	33.506	24.592	335.1	0.151	5.69	101.2	1.2	0.25	0.0	0.00	0.29	0.12	45	217
50 ISL	16.04	16.03	33.508	24.594	335.1	0.168	5.69	101.2	1.2	0.25	0.0	0.00	0.29	0.12	50	
59	16.04	16.03	33.520	24.603	334.4	0.198	5.69	101.2	1.1	0.25	0.0	0.00	0.29	0.11	59	216
73	15.88	15.87	33.539	24.654	330.0	0.244	5.62	99.6	1.3	0.30	0.2	0.05	0.35	0.22	73	215
75 ISL	15.84	15.83	33.531	24.657	329.8	0.251	5.61	99.4	1.3	0.31	0.3	0.06	0.35	0.22	75	
85	15.43	15.42	33.483	24.712	324.8	0.284	5.57	97.8	1.6	0.33	0.7	0.08	0.28	0.19	85	214
94	14.68	14.67	33.460	24.858	311.1	0.312	5.30	91.7	3.3	0.49	3.0	0.09	0.17 A	0.17 A	94	213
100 ISL	13.94	13.93	33.449	25.005	297.2	0.330	5.13	87.4	4.6	0.61	4.7	0.06	0.13	0.16	100	
104	13.50	13.49	33.444	25.091	289.0	0.342	5.04	85.1	5.4	0.67	5.7	0.03	0.11	0.16	104	212
115	13.21	13.19	33.424	25.134	285.2	0.374	5.02	84.2	5.8	0.72	6.3	0.02	0.09	0.14	116	211
125	12.75	12.73	33.454	25.248	274.5	0.402	4.84	80.4	7.4	0.84	8.0	0.02	0.07	0.13	126	210
139	11.69	11.67	33.544	25.520	248.7	0.438	4.33	70.4	11.6	1.12	12.4	0.01	0.04	0.07	140	209
150 ISL	11.20	11.18	33.630	25.677	234.0	0.465	3.94	63.4	14.5	1.31	15.2	0.01	0.02	0.06	151	
165	10.70	10.68	33.730	25.844	218.4	0.499	3.55	56.6	18.0	1.50	18.2	0.01	0.01	0.05	166	208
194	9.47	9.45	33.788	26.097	194.5	0.559	3.58	55.5	22.9	1.65	21.4	0.01	0.00	0.03	195	207
200 ISL	9.31	9.29	33.808	26.139	190.6	0.570	3.55	54.9	23.8	1.69	22.0	0.01			201	
228	8.76	8.74	33.901	26.299	175.7	0.621	3.34	51.0	28.1	1.85	24.5	0.00			229	206
250 ISL	8.37	8.34	33.951	26.399	166.5	0.659	3.15	47.7	31.7	1.96	26.2	0.00			251	
269	8.07	8.04	33.982	26.468	160.1	0.690	2.99	45.0	34.8	2.04	27.4	0.00			270	205
300 ISL	7.71	7.68	34.005	26.539	153.7	0.739	2.81	41.9	39.0	2.15	29.0	0.00			302	
319	7.51	7.48	34.011	26.573	150.7	0.768	2.69	40.0	41.6	2.22	29.9	0.00			321	204
377	6.84	6.80	34.038	26.688	140.3	0.852	2.08	30.4	51.8	2.50	33.4	0.00			379	203
400 ISL	6.60	6.56	34.059	26.737	135.8	0.884	1.77	25.8	57.3	2.64	35.0	0.00			402	
437	6.27	6.23	34.099	26.812	129.0	0.933	1.30	18.8	65.8	2.84	37.4	0.00			440	202
500 ISL	6.00	5.96	34.166	26.899	121.3	1.012	0.81	11.6	73.8	3.04	39.4	0.00			503	
513	5.95	5.91	34.180	26.917	119.8	1.027	0.71	10.2	75.4	3.08	39.8	0.00			516	201

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

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 4.9 N	120 37.9 W	28/01/98	0744 UTC	3812 m	310 09 kn			1019.1 mb	16.8 C	15.3 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.45	16.45	33.528	24.514	341.1	0.000	5.62	100.8	2.0	0.24	0.1	0.00	0.12	0.04	0	
2	16.45	16.45	33.528	24.514	341.1	0.007									2	221
2	16.45	16.45	33.528	24.514	341.1	0.007	5.62	100.8	2.0	0.24	0.1	0.00	0.12	0.04	2	220
10 ISL	16.41	16.41	33.525	24.521	340.7	0.034	5.62	100.7	2.0	0.24	0.1	0.00	0.12	0.03	10	
16	16.37	16.37	33.522	24.528	340.2	0.055	5.63	100.8	2.0	0.24	0.1	0.00	0.13	0.03	16	219
20 ISL	16.36	16.36	33.521	24.530	340.2	0.068	5.63	100.8	2.0	0.24	0.1	0.00	0.13	0.03	20	
29	16.33	16.33	33.513	24.531	340.4	0.099	5.64	100.9	2.0	0.24	0.1	0.00	0.14	0.04	29	218
30 ISL	16.32	16.32	33.510	24.531	340.4	0.102	5.64	100.9	2.0	0.24	0.1	0.00	0.14	0.04	30	
44	16.09	16.08	33.476	24.558	338.3	0.150	5.68	101.1	2.0	0.24	0.1	0.00	0.14	0.04	44	217
50 ISL	16.01	16.00	33.472	24.573	337.1	0.170	5.68	100.9	2.0	0.24	0.1	0.00	0.15	0.04	50	
59	15.92	15.91	33.471	24.593	335.4	0.200	5.68	100.7	2.0	0.25	0.1	0.00	0.17	0.05	59	216
75 ISL	15.80	15.79	33.464	24.615	333.8	0.254	5.69	100.7	2.0	0.25	0.1	0.00	0.25	0.09	75	
77	15.79	15.78	33.463	24.616	333.7	0.260	5.69	100.7	2.0	0.25	0.1	0.00	0.26	0.09	77	215
85	15.77	15.76	33.461	24.620	333.7	0.287	5.69	100.6	2.0	0.25	0.1	0.00	0.25	0.08	85	214
96	15.73	15.72	33.462	24.630	333.1	0.324	5.67	100.2	2.0	0.26	0.1	0.00	0.27	0.11	96	213
100 ISL	15.62	15.60	33.459	24.652	331.0	0.337	5.65	99.6	2.1	0.27	0.2	0.04	0.27	0.14	100	
105	15.41	15.39	33.451	24.693	327.3	0.354	5.61	98.5	2.2	0.30	0.4	0.09	0.27	0.18	105	212
113	14.90	14.88	33.426	24.785	318.7	0.379	5.55	96.4	2.7	0.37	1.2	0.13	0.22	0.19	113	211
125	13.80	13.78	33.363	24.968	301.4	0.417	5.45	92.5	3.7	0.49	2.8	0.03	0.19	0.22	126	210
139	12.60	12.58	33.386	25.225	277.0	0.457	5.14	85.1	6.1	0.72	6.5	0.02	0.12	0.15	140	209
150 ISL	11.84	11.82	33.422	25.398	260.7	0.487	4.89	79.7	8.4	0.90	9.4	0.01	0.08	0.11	151	
163	11.06	11.04	33.484	25.588	242.6	0.519	4.58	73.4	11.6	1.10	12.8	0.01	0.05	0.07	164	208
195	9.44	9.42	33.731	26.058	198.2	0.590	3.73	57.8	22.0	1.60	21.0	0.00	0.00	0.02	196	207
200 ISL	9.33	9.31	33.762	26.100	194.3	0.600	3.61	55.8	23.2	1.66	21.8	0.00			201	
229	8.93	8.91	33.897	26.270	178.6	0.654	3.08	47.2	28.7	1.89	25.1	0.00			230	206
250 ISL	8.59	8.56	33.953	26.367	169.7	0.690	3.05	46.4	31.1	1.95	26.1	0.00			251	
267	8.31	8.28	33.982	26.432	163.6	0.719	3.03	45.8	32.9	1.99	26.6	0.00			268	205
300 ISL	7.76	7.73	34.020	26.544	153.3	0.771	2.73	40.8	38.7	2.16	29.0	0.00			302	
319	7.48	7.45	34.039	26.599	148.2	0.800	2.44	36.2	43.2	2.29	30.7	0.00			321	204
336	7.29	7.26	34.066	26.648	143.8	0.824	2.10	31.1	48.2	2.44	32.3	0.00			338	202
374	7.46	7.42	34.195	26.726	137.2	0.878	1.22	18.1	54.0	2.74	34.2	0.00			376	203
400 ISL	7.13	7.09	34.193	26.771	133.1	0.913	1.13	16.7	58.3	2.80	35.3	0.00			402	
437	6.48	6.44	34.154 D	26.828	127.7	0.961									440	222
500 ISL	5.88	5.84	34.165	26.913	119.8	1.039	0.78	11.2	74.6	3.05	39.7	0.00			503	
511	5.77	5.73	34.168	26.929	118.3	1.052	0.74	10.6	76.4	3.08	40.2	0.00			514	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 45.3 N	121 19.2 W	28/01/98	0154 UTC	3744 m	280 10 kn	290 05 06	1	1018.0 mb	17.0 C	16.0 C		2/8	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	15.91	15.91	33.451	24.578	335.0	0.000	5.76	102.2	1.9	0.25	0.0	0.00	0.13	0.03	0	
1		15.91	15.91	33.451	24.578	335.0	0.003	5.76	102.2	1.9	0.25	0.0	0.00	0.13	0.03	1	220
1		15.90	15.90	33.452	24.581	334.7	0.003									1	221
10	ISL	15.81	15.81	33.449	24.599	333.3	0.033	5.77	102.1	1.9	0.25	0.0	0.00	0.14	0.04	10	
16		15.73	15.73	33.447	24.615	331.9	0.053	5.78	102.1	1.9	0.25	0.0	0.00	0.14	0.04	16	219
20	ISL	15.72	15.72	33.447	24.618	331.8	0.067	5.77	101.9	1.9	0.25	0.0	0.00	0.15	0.04	20	
30		15.69	15.69	33.446	24.624	331.5	0.100	5.75	101.5	1.9	0.25	0.0	0.00	0.18	0.04	30	218
45		15.56	15.55	33.437	24.647	329.8	0.149	5.78	101.8	1.9	0.25	0.0	0.00	0.22	0.06	45	217
50	ISL	15.55	15.54	33.441	24.652	329.5	0.166	5.80	102.1	1.9	0.25	0.0	0.00	0.23	0.08	50	
61		15.48	15.47	33.452	24.676	327.5	0.202	5.82	102.3	1.9	0.26	0.0	0.00	0.30	0.12	61	216
74		15.21	15.20	33.462	24.744	321.4	0.244	5.76	100.7	2.0	0.29	0.0	0.02	0.53	0.32	74	215
75	ISL	15.20	15.19	33.462	24.746	321.3	0.247	5.75	100.5	2.0	0.29	0.0	0.04	0.54	0.33	75	
84		15.00	14.99	33.455	24.784	317.8	0.276	5.65	98.4	2.3	0.34	0.6	0.19	0.59	0.38	84	214
94		14.24	14.23	33.438	24.934	303.8	0.307	5.49	94.1	3.3	0.42	1.8	0.22	0.44	0.37	94	213
100	ISL	13.22	13.21	33.414	25.124	285.7	0.325	5.18	86.9	5.4	0.64	4.8	0.10	0.26	0.24	100	
104		12.58	12.57	33.410	25.247	274.0	0.336	4.99	82.6	6.8	0.79	6.9	0.02	0.15	0.15	104	212
113		12.14	12.13	33.454	25.365	262.9	0.360	4.93	80.9	8.0	0.86	8.4	0.02	0.09	0.12	113	211
125	ISL	11.42	11.40	33.505	25.539	246.5	0.391	4.62	74.7	11.1	1.06	12.0	0.02	0.06	0.08	126	
126		11.36	11.34	33.509	25.553	245.2	0.393	4.59	74.1	11.4	1.08	12.3	0.02	0.06	0.08	127	210
140		10.56	10.54	33.574	25.746	227.0	0.426	4.35	69.0	14.6	1.28	15.3	0.01	0.03	0.05	141	209
150	ISL	10.08	10.06	33.616	25.861	216.2	0.449	4.14	65.0	17.3	1.42	17.7	0.01	0.02	0.04	151	
165		9.51	9.49	33.681	26.007	202.5	0.480	3.83	59.4	21.3	1.62	20.9	0.01	0.01	0.03	166	208
194		8.84	8.82	33.831	26.232	181.5	0.536	3.35	51.3	27.5	1.86	24.6	0.00	0.00	0.02	195	207
200	ISL	8.70	8.68	33.864	26.279	177.0	0.546	3.23	49.3	29.0	1.91	25.4	0.00			201	
227		8.13	8.11	33.988	26.463	159.9	0.592	2.77	41.7	35.6	2.12	28.3	0.00			228	206
250	ISL	7.83	7.81	34.020	26.533	153.5	0.628	2.59	38.8	39.1	2.23	29.6	0.00			251	
266		7.65	7.62	34.024	26.563	150.9	0.652	2.51	37.4	41.3	2.29	30.3	0.00			267	205
300	ISL	7.16	7.13	34.040	26.645	143.4	0.702	2.22	32.7	47.6	2.44	32.3	0.00			302	
316		6.96	6.93	34.049	26.679	140.2	0.725	2.06	30.2	50.6	2.51	33.3	0.00			318	204
378		6.65	6.62	34.126	26.782	131.2	0.809	1.22	17.8	60.7	2.86	36.7	0.00			380	203
400	ISL	6.43	6.39	34.139	26.822	127.6	0.838	1.03	14.9	64.7	2.95	37.8	0.00			402	
436		6.07	6.03	34.160	26.885	121.9	0.883	0.80	11.5	71.0	3.06	39.3	0.00			439	202
500	ISL	5.76	5.72	34.227	26.977	113.7	0.958	0.56	8.0	79.8	3.23	40.8	0.00			503	
512		5.70	5.66	34.240	26.995	112.1	0.971	0.51	7.3	81.5	3.26	41.1	0.00			515	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | 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 59.0 W	27/01/98	1916 UTC	3928 m	230 06 kn	300 06 07	0	1020.3 mb	18.5 C	17.5 C	34m 02	0/8	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	15.66	15.66	33.465	24.644	328.6	0.000			2.2	0.28	0.0	0.00	0.17	0.04	0	
2		15.66	15.66	33.464	24.644	328.8	0.007									2	222
2	A	15.66	15.66	33.465	24.644	328.7	0.007	5.97 U	105.4 U	2.2	0.28	0.0	0.00	0.17	0.04	2	221
10	ISL	15.62	15.62	33.464	24.653	328.1	0.033			2.2	0.28	0.0	0.00	0.19	0.04	10	
12		15.60	15.60	33.464	24.657	327.8	0.039	5.77	101.7	2.2	0.28	0.0	0.00	0.19	0.04	12	220
20	ISL	15.55	15.55	33.461	24.666	327.2	0.066	5.78	101.8	2.1	0.28	0.0	0.00	0.20	0.05	20	
23	A	15.53	15.53	33.459	24.669	327.0	0.075	5.79	101.9	2.1	0.28	0.0	0.00	0.20	0.06	23	219
30	ISL	15.51	15.51	33.458	24.673	326.8	0.098	5.78	101.7	2.1	0.28	0.0	0.00	0.23	0.07	30	
35		15.49	15.48	33.458	24.678	326.5	0.115	5.77	101.5	2.1	0.28	0.0	0.00	0.26	0.08	35	218
48	A	15.42	15.41	33.460	24.695	325.3	0.157	5.78	101.5	2.0	0.28	0.0	0.00	0.35	0.11	48	217
50	ISL	15.43	15.42	33.464	24.696	325.2	0.164	5.77	101.3	2.0	0.28	0.0	0.00	0.39	0.14	50	
58		15.45	15.44	33.478	24.703	324.9	0.190	5.72	100.5	2.1	0.30	0.1	0.02	0.50	0.25	58	216
68	A	15.22	15.21	33.474	24.751	320.6	0.222	5.64	98.6	2.4	0.33	0.4	0.12	0.44	0.26	68	215
75	ISL	14.84	14.83	33.433	24.802	315.9	0.244	5.59	97.0	2.7	0.37	0.9	0.13	0.39	0.25	75	
79		14.58	14.57	33.409	24.839	312.4	0.257	5.55	95.8	3.0	0.41	1.4	0.13	0.36	0.24	79	214
92	A	13.72	13.71	33.394	25.007	296.7	0.296	5.29	89.7	4.8	0.58	4.0	0.03	0.18	0.16	92	213
100	ISL	12.40	12.39	33.417	25.287	270.1	0.319	4.95	81.7	7.9	0.86	8.1	0.02	0.11	0.11	100	
104		11.76	11.75	33.442	25.427	256.7	0.329	4.78	77.8	9.5	0.99	10.2	0.02	0.08	0.09	104	212
115		11.18	11.17	33.506	25.583	242.0	0.357	4.57	73.5	11.7	1.10	12.5	0.01	0.06	0.07	116	211
125	ISL	10.68	10.67	33.584	25.733	228.0	0.380	4.24	67.5	15.2	1.30	15.7	0.01	0.03	0.05	126	
128	A	10.54	10.52	33.606	25.774	224.0	0.387	4.14	65.7	16.2	1.36	16.6	0.01	0.02	0.04	129	210
144		10.00	9.98	33.664	25.912	211.2	0.422	3.91	61.3	19.0	1.50	19.0	0.01	0.01	0.03	145	209
150	ISL	9.76	9.74	33.689	25.972	205.6	0.434	3.82	59.6	20.5	1.57	20.1	0.01	0.01	0.03	151	
168		9.07	9.05	33.773	26.149	188.9	0.470	3.57	54.9	25.1	1.75	23.2	0.00	0.00	0.02	169	208
198		8.40	8.38	33.917	26.367	168.6	0.524	3.36	50.9	30.6	1.88	25.5	0.00	0.00	0.02	199	207
200	ISL	8.37	8.35	33.922	26.375	167.8	0.527	3.34	50.6	30.9	1.89	25.6	0.00			201	
229		8.01	7.99	33.979	26.474	158.8	0.574	2.98	44.8	36.0	2.06	27.8	0.00			230	206
250	ISL	7.80	7.78	34.017	26.535	153.3	0.607	2.63	39.3	40.2	2.22	29.6	0.00			251	
268		7.66	7.63	34.049	26.581	149.2	0.634	2.31	34.5	43.8	2.35	31.0	0.00			269	205
300	ISL	7.50	7.47	34.107	26.650	143.2	0.681	1.77	26.3	48.6	2.55	32.8	0.00			302	
318		7.40	7.37	34.133	26.685	140.1	0.707	1.51	22.4	51.2	2.64	33.7	0.00			320	204
378		6.72	6.69	34.150	26.792	130.4	0.788	1.07	15.6	61.5	2.87	36.9	0.00			380	203
400	ISL	6.49	6.45	34.156	26.828	127.2	0.816	0.94	13.7	65.4	2.94	37.9	0.00			402	
437		6.13	6.09	34.170	26.885	121.9	0.862	0.75	10.8	71.7	3.04	39.4	0.00			440	202
500	ISL	5.67	5.63	34.219	26.982	113.2	0.936	0.47	6.7	81.2	3.19	41.1	0.00			503	
517		5.55	5.51	34.232	27.007	110.9	0.955	0.40	5.7	83.8	3.23	41.6	0.00			520	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 39.9 W	27/01/98	1315 UTC	3971 m	300 06 kn			1013.9 mb	18.0 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	16.85	16.85	33.537	24.428	349.3	0.000	5.57	100.7	2.1	0.24	0.0	0.00	0.11	0.02	0	220
10 ISL	16.84	16.84	33.537	24.430	349.3	0.035	5.58	100.8	2.1	0.23	0.0	0.00	0.11	0.02	10	
15	16.84	16.84	33.537	24.431	349.5	0.052	5.58	100.8	2.1	0.23	0.0	0.00	0.11	0.02	15	219
20 ISL	16.84	16.84	33.541	24.434	349.3	0.070	5.58	100.8	2.1	0.23	0.0	0.00	0.11	0.02	20	
29	16.82	16.82	33.545	24.442	348.9	0.101	5.59	101.0	2.1	0.23	0.0	0.00	0.11	0.03	29	218
30 ISL	16.81	16.81	33.543	24.443	348.8	0.105	5.59	101.0	2.1	0.23	0.0	0.00	0.11	0.03	30	
45	16.72	16.71	33.523	24.449	348.7	0.157	5.59	100.8	2.1	0.24	0.0	0.00	0.15	0.04	45	217
50 ISL	16.72	16.71	33.528	24.453	348.5	0.175	5.59	100.8	2.0	0.23	0.0	0.00	0.15	0.04	50	
55	16.72	16.71	33.539	24.462	347.9	0.192	5.59	100.8	2.0	0.23	0.0	0.00	0.14	0.04	55	216
65	16.38	16.37	33.488	24.501	344.4	0.227	5.60	100.2	2.0	0.26	0.0	0.00	0.22	0.11	65	215
75	16.13	16.12	33.463	24.540	341.0	0.261	5.61	99.9	2.0	0.24	0.0	0.01	0.26	0.15	75	214
83	15.85	15.84	33.456	24.598	335.7	0.288	5.61	99.3	2.1	0.27	0.1	0.05	0.29	0.22	83	213
94	15.48	15.47	33.433	24.663	329.8	0.324	5.61	98.6	2.2	0.29	0.3	0.11	0.31	0.22	94	212
100 ISL	15.15	15.13	33.433	24.735	323.0	0.344	5.59	97.6	2.3	0.30	0.4	0.11	0.27	0.20	100	
110	14.41	14.39	33.428	24.891	308.4	0.376	5.55	95.5	2.9	0.36	1.3	0.12	0.19	0.16	110	211
123	13.06	13.04	33.386	25.135	285.3	0.414	5.32	89.0	4.9	0.58	4.4	0.02	0.16	0.15	124	210
125 ISL	12.88	12.86	33.390	25.173	281.6	0.420	5.27	87.8	5.4	0.62	5.0	0.02	0.15	0.14	126	
144	11.41	11.39	33.486	25.526	248.2	0.470	4.68	75.6	11.3	1.04	11.8	0.01	0.06	0.08	145	209
150 ISL	10.95	10.93	33.530	25.644	237.1	0.485	4.44	71.0	13.7	1.18	14.1	0.01	0.04	0.07	151	
169	9.72	9.70	33.691	25.980	205.2	0.527	3.67	57.2	21.6	1.61	20.6	0.01	0.01	0.04	170	208
199	8.81	8.79	33.953	26.332	172.1	0.583	2.62	40.1	31.9	2.06	26.9	0.00	0.00	0.03	200	207
200 ISL	8.81	8.79	33.962	26.339	171.5	0.585	2.59	39.6	32.2	2.07	27.0	0.00			201	
229	8.73	8.71	34.125	26.480	158.7	0.633	1.89	28.9	38.1	2.34	29.5	0.00			230	206
250 ISL	8.64	8.61	34.182	26.539	153.5	0.666	1.59	24.3	41.0	2.45	30.5	0.00			251	
269	8.54	8.51	34.208	26.575	150.4	0.695	1.40	21.3	43.2	2.53	31.2	0.00			270	205
300 ISL	8.30	8.27	34.238	26.635	145.1	0.740	1.15	17.4	46.9	2.65	32.4	0.00			302	
316	8.14	8.11	34.245	26.665	142.5	0.763	1.06	16.0	49.0	2.71	33.1	0.00			318	204
378	7.28	7.24	34.232	26.780	132.0	0.849	0.82	12.1	59.1	2.89	35.9	0.00			380	203
400 ISL	7.11	7.07	34.245	26.814	129.0	0.877	0.71	10.5	61.9	2.97	36.6	0.00			402	
435	6.91	6.87	34.272	26.864	124.7	0.922	0.53	7.8	65.9	3.08	37.5	0.00			438	202
500 ISL	6.47	6.42	34.315	26.957	116.5	1.000	0.33	4.8	73.9	3.19	39.0	0.00			503	
514	6.38	6.33	34.325	26.977	114.7	1.016	0.29	4.2	75.6	3.21	39.3	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 19.6 W	27/01/98	0732 UTC	4007 m	160 01 kn			1019.4 mb	17.6 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	17.38	17.38	33.597	24.349	356.8	0.000	5.53	101.0	1.7	0.21	0.0	0.00	0.09	0.02	0	
2	17.36	17.36	33.591	24.349	356.9	0.007									2	221
2	17.38	17.38	33.597	24.349	356.9	0.007	5.53	101.0	1.7	0.21	0.0	0.00	0.09	0.02	2	220
10 ISL	17.35	17.35	33.591	24.351	356.9	0.036	5.54	101.1	1.7	0.21	0.0	0.00	0.08	0.02	10	
15	17.32	17.32	33.586	24.355	356.7	0.054	5.55	101.3	1.7	0.21	0.0	0.00	0.08	0.02	15	219
20 ISL	17.28	17.28	33.581	24.361	356.3	0.071	5.55	101.2	1.7	0.21	0.0	0.00	0.08	0.02	20	
30 ISL	17.20	17.20	33.574	24.375	355.3	0.107	5.55	101.0	1.7	0.21	0.0	0.00	0.09	0.03	30	
31	17.19	17.18	33.573	24.377	355.2	0.110	5.55	101.0	1.7	0.21	0.0	0.00	0.09	0.03	31	218
45	17.18	17.17	33.572	24.379	355.5	0.160	5.55	101.0	1.7	0.21	0.0	0.00	0.11	0.04	45	217
50 ISL	17.19	17.18	33.576	24.380	355.6	0.178	5.55	101.0	1.7	0.21	0.0	0.00	0.12	0.04	50	
60	17.20	17.19	33.580	24.381	355.8	0.214	5.56	101.2	1.7	0.21	0.0	0.00	0.13	0.04	60	216
75	17.13	17.12	33.576	24.395	354.9	0.267	5.55	100.9	1.7	0.21	0.0	0.00	0.15	0.05	75	215
85	17.07	17.06	33.578	24.411	353.7	0.302	5.55	100.7	1.8	0.21	0.0	0.00	0.17	0.05	85	214
94	16.94	16.92	33.556	24.425	352.7	0.334	5.57	100.8	1.8	0.21	0.0	0.00	0.17	0.06	94	213
100 ISL	16.84	16.82	33.539	24.435	351.9	0.355	5.58	100.8	1.8	0.21	0.0	0.00	0.18	0.07	100	
105	16.74	16.72	33.523	24.447	351.0	0.373	5.59	100.8	1.8	0.21	0.0	0.00	0.19	0.07	105	212
116	16.44	16.42	33.483	24.486	347.5	0.411	5.58	100.0	1.8	0.22	0.0	0.02	0.23	0.15	116	211
125	15.06	15.04	33.439	24.760	321.4	0.441	5.55	96.7	2.4	0.31	0.8	0.10	0.22	0.18	125	210
139	13.40	13.38	33.409	25.085	290.5	0.484	5.36	90.3	4.3	0.55	3.8	0.01	0.14	0.15	140	209
150 ISL	12.39	12.37	33.408	25.283	271.7	0.515	5.17	85.3	6.3	0.72	6.5	0.01	0.09	0.12	151	
164	11.32	11.30	33.439	25.507	250.5	0.552	4.85	78.2	9.6	0.95	10.4	0.01	0.05	0.08	165	208
194	9.46	9.44	33.663	26.001	203.6	0.620	3.87	60.0	20.7	1.56	20.1	0.01	0.01	0.04	195	207
200 ISL	9.28	9.26	33.703	26.062	197.9	0.632	3.73	57.6	22.3	1.63	21.3	0.01			201	
229	8.78	8.76	33.857	26.262	179.3	0.686	3.27	50.0	28.2	1.85	24.8	0.01			230	206
250 ISL	8.44	8.41	33.920	26.364	169.9	0.723	3.12	47.3	31.2	1.93	26.1	0.00			251	
269	8.15	8.12	33.957	26.437	163.2	0.755	3.01	45.4	33.8	2.00	27.0	0.00			270	205
300 ISL	7.65	7.62	34.007	26.550	152.7	0.804	2.64	39.4	40.5	2.19	29.4	0.00			302	
319	7.38	7.35	34.032	26.608	147.4	0.832	2.37	35.1	44.8	2.32	31.0	0.00			321	204
378	6.98	6.94	34.102	26.719	137.5	0.916	1.56	22.9	54.9	2.64	34.6	0.00			380	203
400 ISL	6.80	6.76	34.119	26.757	134.1	0.946	1.35	19.7	58.6	2.74	35.7	0.00			402	
437	6.47	6.43	34.140	26.818	128.6	0.995	1.07	15.5	64.7	2.87	37.4	0.00			440	202
500 ISL	5.88	5.84	34.154	26.905	120.7	1.073	0.81	11.6	74.6	3.02	39.6	0.00			503	
515	5.74	5.70	34.158	26.925	118.8	1.091	0.75	10.7	76.9	3.05	40.1	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 25.7 N	124 0.5 W	27/01/98	0137 UTC	4206 m	250 11 kn	240 03 05	1	1020.2 mb	17.9 C	16.2 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	17.79	17.79	33.727	24.349	356.7	0.000	5.51	101.5	2.0	0.22	0.0	0.00	0.09	0.03	0	
1	17.79	17.79	33.727	24.349	356.8	0.004	5.51	101.5	2.0	0.22	0.0	0.00	0.09	0.03	1	220
1	17.78	17.78	33.726	24.351	356.6	0.004									1	221
10 ISL	17.80	17.80	33.730	24.350	357.1	0.036	5.50	101.4	2.0	0.22	0.0	0.00	0.09	0.02	10	
15	17.80	17.80	33.732	24.351	357.1	0.054	5.49	101.2	2.0	0.22	0.0	0.00	0.09	0.02	15	219
20 ISL	17.78	17.78	33.734	24.358	356.6	0.071	5.50	101.3	2.0	0.22	0.0	0.00	0.09	0.02	20	
30	17.74	17.73	33.736	24.370	355.9	0.107	5.51	101.4	2.1	0.22	0.0	0.00	0.09	0.02	30	218
44	17.72	17.71	33.736	24.375	355.8	0.157	5.49	101.0	2.0	0.22	0.0	0.00	0.13	0.04	44	217
50 ISL	17.39	17.38	33.655	24.393	354.3	0.178	5.53	101.1	2.0	0.22	0.0	0.00	0.16	0.06	50	
59	16.87	16.86	33.533	24.422	351.8	0.210	5.60	101.2	2.0	0.22	0.0	0.00	0.21	0.09	59	216
73	16.71	16.70	33.513	24.445	350.1	0.259	5.62	101.3	2.0	0.22	0.0	0.00	0.21	0.08	73	215
75 ISL	16.71	16.70	33.514	24.446	350.1	0.266	5.62	101.3	2.0	0.22	0.0	0.00	0.21	0.08	75	
85	16.69	16.68	33.524	24.458	349.2	0.301	5.60	100.9	2.1	0.22	0.0	0.00	0.23	0.09	85	214
94	16.52	16.50	33.505	24.483	347.1	0.332	5.61	100.7	2.1	0.23	0.0	0.02	0.28	0.17	94	213
100 ISL	15.97	15.95	33.509	24.612	334.9	0.353	5.61	99.6	2.4	0.27	0.1	0.09	0.29	0.23	100	
102	15.73	15.71	33.508	24.665	329.9	0.359	5.61	99.1	2.6	0.29	0.1	0.11	0.29	0.25	102	212
113	14.22	14.20	33.411	24.918	305.9	0.394	5.57	95.4	3.4	0.42	1.7	0.06	0.21	0.19	113	211
123	13.08	13.06	33.372	25.120	286.7	0.424	5.36	89.7	5.1	0.59	4.3	0.02	0.15	0.15	123	210
125 ISL	12.90	12.88	33.371	25.155	283.4	0.430	5.32	88.7	5.4	0.62	4.7	0.02	0.14	0.14	126	
139	11.87	11.85	33.399	25.374	262.7	0.468	5.08	82.8	7.5	0.79	7.6	0.01	0.09	0.11	140	209
150 ISL	11.29	11.27	33.439	25.512	249.7	0.496	4.87	78.5	9.7	0.93	10.1	0.00	0.06	0.09	151	
164	10.70	10.68	33.504	25.668	235.0	0.530	4.60	73.2	12.9	1.12	13.3	0.00	0.04	0.06	165	208
195	9.53	9.51	33.695	26.015	202.3	0.598	3.94	61.2	20.7	1.51	19.7	0.00	0.01	0.02	196	207
200 ISL	9.39	9.37	33.723	26.060	198.1	0.608	3.85	59.6	21.9	1.56	20.5	0.00			201	
229	8.70	8.68	33.864	26.280	177.6	0.662	3.41	52.0	28.7	1.83	24.5	0.00			230	206
250 ISL	8.21	8.18	33.937	26.412	165.2	0.698	3.13	47.2	33.6	1.99	26.8	0.00			251	
269	7.81	7.78	33.984	26.508	156.2	0.729	2.90	43.4	37.8	2.11	28.5	0.00			270	205
300 ISL	7.31	7.28	34.014	26.603	147.4	0.776	2.56	37.9	43.9	2.28	30.8	0.00			302	
319	7.07	7.04	34.021	26.642	143.9	0.804	2.34	34.4	47.6	2.37	32.0	0.00			321	204
378	6.51	6.48	34.078	26.763	132.9	0.885	1.49	21.6	60.2	2.71	36.2	0.00			380	203
400 ISL	6.33	6.29	34.101	26.805	129.1	0.914	1.25	18.1	64.3	2.82	37.4	0.00			402	
438	6.05	6.01	34.141	26.873	123.0	0.962	0.91	13.1	70.6	2.97	39.1	0.00			441	202
500 ISL	5.71	5.67	34.200	26.962	115.1	1.036	0.57	8.1	79.3	3.13	40.8	0.00			503	
513	5.64	5.60	34.213	26.981	113.4	1.051	0.50	7.1	81.1	3.16	41.1	0.00			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 57.2 N	117 18.5 W	23/01/98	1920 UTC	75 m	290 04 kn	290 01 04	1	1019.8 mb	17.3 C	13.2 C	27m 02	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	17.95	17.95	34.049	24.557	336.9	0.000	5.30	98.2	2.1	0.40	0.5	0.32	0.80	0.26	0	
1 A	17.95	17.95	34.049	24.557	337.0	0.003	5.30	98.2	2.1	0.40	0.5	0.32	0.80	0.26	1	209
2	17.95	17.95	34.049	24.557	337.0	0.007									2	210
10 ISL	17.86	17.86	34.047	24.578	335.3	0.034	5.30	98.0	2.1	0.40	0.5	0.32	0.69	0.29	10	
11	17.85	17.85	34.047	24.580	335.1	0.037	5.30	98.0	2.1	0.40	0.5	0.32	0.68	0.29	11	208
18 A	17.85	17.85	34.048	24.581	335.3	0.060	5.29	97.8	2.1	0.40	0.5	0.32	0.70	0.31	18	207
20 ISL	17.85	17.85	34.048	24.582	335.3	0.067	5.29	97.8	2.1	0.40	0.5	0.32	0.70	0.31	20	
28	17.84	17.84	34.049	24.585	335.3	0.094	5.28	97.6	2.1	0.41	0.4	0.33	0.70	0.31	28	206
30 ISL	17.84	17.83	34.049	24.585	335.3	0.101	5.28	97.6	2.1	0.41	0.4	0.33	0.70	0.32	30	
37 A	17.83	17.82	34.047	24.586	335.5	0.124	5.28	97.6	2.1	0.41	0.5	0.34	0.71	0.35	37	205
46	17.83	17.82	34.047	24.587	335.8	0.154	5.27	97.4	2.1	0.41	0.6	0.33	0.63	0.31	46	204
50 ISL	17.50	17.49	33.988	24.621	332.6	0.168	5.03	92.3	3.0	0.50	2.0	0.27	0.46	0.25	50	
56 A	16.94	16.93	33.897	24.685	326.7	0.188	4.65	84.4	4.5	0.66	4.2	0.20	0.19	0.16	56	203
62	16.68	16.67	33.864	24.721	323.4	0.207	4.49	81.0	5.3	0.74	5.0	0.22	0.08	0.15	62	202
66	16.70	16.69	33.867	24.719	323.8	0.220	4.48	80.9	5.4	0.74	5.2	0.26	0.09	0.16	66	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.8 N	117 23.7 W	23/01/98	2209 UTC	634 m	280 10 kn	290 01 04	1	1018.2 mb	18.0 C	15.3 C	17m 03	4/8	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	18.13	18.13	34.071	24.530	339.5	0.000	5.37	99.8	2.0	0.39	0.3	0.21	1.28	0.23	0	
1		18.13	18.13	34.071	24.530	339.6	0.003	5.37	99.8	2.0	0.39	0.3	0.21	1.28	0.23	1	220
1		18.12	18.12	34.070	24.531	339.4	0.003									1	221
10		17.93	17.93	34.065	24.575	335.6	0.034	5.38	99.6	2.0	0.40	0.3	0.21	1.05	0.34	10	219
20		17.91	17.91	34.065	24.580	335.5	0.067	5.34	98.8	2.0	0.39	0.3	0.21	0.97	0.37	20	218
30		17.89	17.88	34.061	24.582	335.6	0.101	5.31	98.2	2.0	0.40	0.4	0.25	0.84	0.31	30	217
39		17.88	17.87	34.059	24.583	335.8	0.131	5.30	98.0	2.1	0.39	0.4	0.25	0.83	0.32	39	216
50		17.85	17.84	34.050	24.584	336.1	0.168	5.30	98.0	2.1	0.40	0.5	0.27	0.79	0.28	50	215
59		17.74	17.73	34.02 D	24.589	336.0	0.198	5.04	92.9	2.9	0.50	2.0	0.20	0.41	0.22	59	214
69		17.07	17.06	33.909	24.664	329.1	0.232	4.68	85.1	4.2	0.63	3.8	0.10	0.06	0.13	69	213
75	ISL	16.85	16.84	33.882	24.695	326.3	0.251	4.50	81.5	5.1	0.71	4.7	0.22	0.08	0.15	75	
85		16.42	16.41	33.849	24.770	319.5	0.284	4.26	76.5	6.5	0.84	6.2	0.41	0.11	0.19	85	212
100		15.03	15.01	33.753	25.008	297.1	0.330	3.98	69.5	8.4	1.00	8.4	0.07	0.03	0.09	100	211
119		13.89	13.87	33.796	25.284	271.2	0.384	3.52	60.0	11.3	1.25	12.2	0.02	0.02	0.06	120	210
125	ISL	13.56	13.54	33.850	25.393	260.9	0.400	3.24	54.9	13.2	1.38	14.1	0.02	0.02	0.06	126	
139		12.90	12.88	33.986	25.632	238.5	0.435	2.60	43.5	17.6	1.69	18.5	0.01	0.01	0.06	140	209
150	ISL	12.64	12.62	34.039	25.724	230.0	0.460	2.47	41.1	19.4	1.81	20.0	0.01	0.01	0.06	151	
170		12.21	12.19	34.079	25.839	219.5	0.505	2.22	36.6	21.6	1.92	21.5	0.01	0.01	0.06	171	208
199		10.88	10.86	34.099	26.100	194.9	0.565	2.15	34.5	25.6	2.05	24.1	0.01	0.00	0.04	200	207
200	ISL	10.88	10.86	34.106	26.106	194.4	0.567	2.13	34.2	25.8	2.06	24.2	0.01			201	
230		10.88	10.85	34.260	26.226	183.8	0.624	1.51	24.2	30.3	2.32	26.5	0.00			231	206
250	ISL	10.42	10.39	34.260	26.307	176.3	0.660	1.54	24.5	32.4	2.35	27.3	0.00			251	
269		9.90	9.87	34.234	26.376	169.9	0.693	1.56	24.5	34.0	2.37	27.8	0.01			270	205
300	ISL	9.41	9.38	34.237	26.460	162.4	0.745	1.52	23.6	36.8	2.42	28.7	0.01			302	
319		9.17	9.13	34.243	26.504	158.5	0.775	1.46	22.6	38.7	2.46	29.3	0.01			321	204
378		8.44	8.40	34.260	26.633	146.9	0.865	1.18	17.9	45.8	2.64	31.6	0.00			380	203
400	ISL	8.18	8.14	34.258	26.671	143.5	0.897	1.09	16.5	48.4	2.70	32.5	0.00			402	
437		7.73	7.69	34.258	26.737	137.5	0.949	0.93	13.9	53.5	2.80	34.1	0.00			440	202
500	ISL	6.86	6.81	34.297	26.891	123.2	1.031	0.52	7.6	67.1	3.05	37.4	0.00			503	
513		6.68	6.63	34.306	26.922	120.2	1.047	0.43	6.3	69.9	3.10	38.1	0.00			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 50.9 N	117 32.1 W	24/01/98	0156 UTC	852 m	290 10 kn			1018.0 mb	17.5 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	17.99	17.99	34.063	24.558	336.9	0.000	5.40	100.1	2.2	0.40	0.2	0.15	0.89	0.31	0	
1		18.03	18.03	34.064	24.549	337.7	0.003									1	221
1		17.99	17.99	34.063	24.558	336.9	0.003	5.40	100.1	2.2	0.40	0.2	0.15	0.89	0.31	1	220
10		17.98	17.98	34.071	24.567	336.4	0.034	5.42	100.5	2.2	0.43	0.2	0.15	0.97	0.31	10	219
20		17.92	17.92	34.064	24.577	335.8	0.067	5.38	99.6	2.2	0.43	0.2	0.17	0.90	0.38	20	218
30		17.93	17.92	34.076	24.584	335.5	0.101	5.39	99.8	2.2	0.40	0.2	0.18	1.04	0.35	30	217
39		17.91	17.90	34.060	24.577	336.5	0.131	5.35	99.0	2.2	0.42	0.1	0.20	0.75	0.31	39	216
49		17.90	17.89	34.055	24.576	336.9	0.165	5.32	98.4	2.2	0.40	0.2	0.21	1.00	0.33	49	215
50	ISL	17.90	17.89	34.056	24.577	336.8	0.168	5.32	98.4	2.2	0.40	0.2	0.21	0.98	0.33	50	
59		17.89	17.88	34.060	24.583	336.6	0.198	5.35	99.0	2.2	0.41	0.3	0.21	0.63	0.32	59	214
69		17.88	17.87	34.055 D	24.582	337.1	0.232									69	213
75	ISL	17.47	17.46	33.989	24.630	332.6	0.252	4.85	88.9	4.2	0.64	3.1	0.10	0.19	0.19	75	
84		16.53	16.52	33.865	24.757	320.7	0.282	4.47	80.4	5.9	0.81	5.3	0.04	0.05	0.11	84	212
98		14.81	14.80	33.729	25.037	294.2	0.325	4.10	71.2	8.2	1.00	8.0	0.03	0.02	0.09	98	211
100	ISL	14.76	14.75	33.756	25.069	291.3	0.330	4.00	69.4	8.7	1.04	8.6	0.03	0.02	0.09	100	
119		14.33	14.31	33.936	25.300	269.8	0.384	3.05	52.5	13.6	1.46	13.9	0.02	0.01	0.05	120	210
125	ISL	14.15	14.13	33.965	25.360	264.2	0.400	2.88	49.4	14.6	1.54	15.0	0.02	0.01	0.05	126	
138		13.72	13.70	34.009	25.484	252.7	0.433	2.62	44.6	16.6	1.69	16.9	0.01	0.01	0.06	139	209
150	ISL	13.24	13.22	34.043	25.608	241.2	0.463	2.41	40.6	18.7	1.81	18.7	0.01	0.01	0.06	151	
169		12.51	12.49	34.110	25.805	222.8	0.507	2.09	34.7	22.3	2.00	21.4	0.01	0.01	0.05	170	208
198		11.83	11.80	34.294	26.078	197.4	0.568	1.48	24.2	28.2	2.33	25.3	0.00	0.01	0.04	199	207
200	ISL	11.74	11.71	34.291	26.093	196.0	0.572	1.48	24.2	28.5	2.33	25.4	0.00			201	
227		10.45	10.42	34.207	26.260	180.2	0.623	1.69	26.9	31.5	2.34	26.5	0.01			228	206
250	ISL	9.90	9.87	34.198	26.348	172.2	0.663	1.74	27.3	33.1	2.35	27.1	0.01			251	
267		9.66	9.63	34.208	26.396	167.9	0.692	1.78	27.8	34.2	2.37	27.6	0.00			268	205
300	ISL	9.27	9.24	34.243	26.488	159.7	0.746	1.55	24.0	38.1	2.45	28.9	0.00			302	
316		9.10	9.07	34.260	26.529	156.0	0.772	1.40	21.6	40.3	2.50	29.6	0.00			318	204
375		8.20	8.16	34.255	26.665	143.6	0.860	1.15	17.4	48.5	2.68	32.2	0.00			377	203
400	ISL	7.93	7.89	34.263	26.712	139.4	0.895	1.01	15.2	51.7	2.76	33.2	0.00			402	
436		7.60	7.56	34.277	26.771	134.2	0.945	0.81	12.1	56.4	2.87	34.5	0.00			439	202
500	ISL	6.99	6.94	34.290	26.868	125.5	1.028	0.56	8.2	65.3	3.02	36.8	0.00			503	
515		6.85	6.80	34.294	26.890	123.5	1.046	0.50	7.3	67.4	3.05	37.3	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 41.0 N	117 52.6 W	24/01/98	0545 UTC	610 m	300 11 kn			1019.0 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	17.87	17.87	34.059	24.584	334.4	0.000	5.39	99.7	2.1	0.39	0.3	0.19	0.57	0.19	0	
1		17.87	17.87	34.059 D	24.584	334.4	0.003	5.39	99.7	2.1	0.39	0.3	0.19	0.57	0.19	1	220
1		17.86	17.86	34.060	24.588	334.1	0.003									1	221
10		17.86	17.86	34.058	24.586	334.5	0.033	5.39	99.7	2.2	0.40	0.3	0.19	0.63	0.22	10	219
20		17.83	17.83	34.062	24.597	333.8	0.067	5.37	99.2	2.1	0.39	0.3	0.20	0.61	0.27	20	218
30		17.82	17.81	34.055	24.595	334.4	0.100	5.34	98.7	2.2	0.41	0.3	0.21	0.51	0.24	30	217
40		17.81	17.80	34.060	24.601	334.2	0.134	5.33	98.4	2.2	0.41	0.4	0.22	0.59	0.20	40	216
50		17.81	17.80	34.068	24.608	333.9	0.167	5.35	98.8	2.2	0.41	0.4	0.22	0.65	0.19	50	215
59		17.78	17.77	34.056	24.606	334.3	0.197	5.31	98.0	2.2	0.41	0.5	0.26	0.61	0.19	59	214
69		16.88	16.87	33.914	24.713	324.5	0.230	4.54	82.3	5.4	0.73	5.0	0.11	0.05	0.10	69	213
75	ISL	16.32	16.31	33.863	24.804	315.9	0.249	4.24	76.0	6.9	0.86	6.6	0.07	0.04	0.09	75	
84		15.43	15.42	33.807	24.962	301.1	0.277	3.95	69.5	8.7	0.99	8.3	0.04	0.03	0.07	84	212
99		13.80	13.79	33.720	25.243	274.5	0.320	3.78	64.3	10.6	1.15	10.8	0.03	0.02	0.06	99	211
100	ISL	13.76	13.75	33.724	25.254	273.4	0.323	3.76	63.9	10.7	1.16	11.0	0.03	0.02	0.06	100	
119		13.14	13.12	33.834	25.466	253.8	0.373	3.27	54.9	13.9	1.39	14.7	0.02	0.01	0.05	120	210
125	ISL	12.70	12.68	33.846	25.562	244.7	0.388	3.18	52.9	15.3	1.46	15.9	0.02	0.01	0.05	126	
139		11.65	11.63	33.872	25.782	223.9	0.421	3.01	49.0	18.4	1.62	18.6	0.01	0.01	0.05	140	209
150	ISL	11.25	11.23	33.907	25.883	214.5	0.445	2.87	46.3	20.2	1.72	20.0	0.01	0.01	0.05	151	
168		10.88	10.86	33.965	25.995	204.2	0.483	2.65	42.5	22.7	1.85	21.7	0.01	0.01	0.04	169	208
198		10.30	10.28	34.041	26.156	189.4	0.542	2.38	37.7	26.8	2.03	24.2	0.01	0.00	0.04	199	207
200	ISL	10.27	10.25	34.049	26.168	188.3	0.545	2.35	37.2	27.1	2.04	24.4	0.01			201	
228		9.92	9.89	34.167	26.320	174.4	0.596	1.94	30.5	31.6	2.23	26.6	0.01			229	206
250	ISL	9.72	9.69	34.221	26.396	167.6	0.634	1.69	26.4	34.3	2.34	27.7	0.01			251	
267		9.57	9.54	34.247	26.441	163.6	0.662	1.53	23.9	36.2	2.41	28.4	0.01			268	205
300	ISL	9.18	9.15	34.276	26.528	155.8	0.715	1.35	20.9	39.6	2.50	29.6	0.01			302	
318		8.93	8.90	34.281	26.572	151.9	0.742	1.28	19.7	41.7	2.55	30.2	0.01			320	204
377		8.01	7.97	34.278	26.711	139.1	0.828	0.98	14.8	51.6	2.78	33.1	0.00			379	203
400	ISL	7.76	7.72	34.279	26.749	135.8	0.860	0.88	13.2	54.5	2.84	34.0	0.00			402	
437		7.42	7.38	34.282	26.801	131.2	0.909	0.73	10.8	58.8	2.92	35.3	0.00			440	202
500	ISL	6.91	6.86	34.296	26.883	123.9	0.990	0.52	7.6	66.5	3.05	37.2	0.00			503	
516		6.78	6.73	34.300	26.904	122.1	1.009	0.47	6.9	68.4	3.08	37.7	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 30.8 N	118 12.7 W	24/01/98	0943 UTC	1658 m	300 10 kn			1018.0 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	15.89	15.89	33.609	24.703	323.0	0.000	5.69	101.0	2.0	0.29	0.0	0.00	0.60	0.23	0	
1		15.89	15.89	33.609	24.703	323.0	0.003	5.69	101.0	2.0	0.29	0.0	0.00	0.60	0.23	1	220
2		15.91	15.91	33.611	24.701	323.3	0.006									2	221
10	ISL	15.89	15.89	33.607	24.702	323.4	0.032	5.70	101.1	2.0	0.30	0.0	0.00	0.59	0.22	10	
16		15.89	15.89	33.606	24.702	323.7	0.052	5.70	101.1	2.0	0.30	0.0	0.00	0.58	0.21	16	219
20	ISL	15.81	15.81	33.588	24.706	323.4	0.065	5.71	101.1	2.0	0.30	0.0	0.00	0.51	0.20	20	
30	ISL	15.56	15.56	33.526	24.715	322.9	0.097	5.74	101.1	2.2	0.29	0.0	0.00	0.39	0.19	30	
31		15.53	15.53	33.519	24.716	322.8	0.100	5.74	101.1	2.2	0.29	0.0	0.00	0.38	0.19	31	218
44		15.23	15.22	33.496	24.765	318.5	0.142	5.70	99.7	2.4	0.31	0.3	0.02	0.61	0.37	44	217
50	ISL	14.44	14.43	33.442	24.893	306.4	0.161	5.43	93.5	3.9	0.49	2.5	0.07	0.56	0.47	50	
55		13.73	13.72	33.407	25.014	295.0	0.176	5.18	87.9	5.3	0.65	4.7	0.10	0.52	0.51	55	216
64		13.05	13.04	33.420	25.161	281.1	0.202	4.90	82.0	7.1	0.82	7.4	0.05	0.27	0.36	64	215
75		12.52	12.51	33.448	25.287	269.4	0.232	4.70	77.7	8.7	0.94	9.3	0.03	0.17	0.21	75	214
85		11.89	11.88	33.496	25.444	254.6	0.258	4.42	72.2	11.0	1.11	11.9	0.02	0.09	0.13	85	213
95		11.67	11.66	33.514	25.499	249.6	0.283	4.34	70.5	11.8	1.16	12.6	0.02	0.07	0.11	95	212
100	ISL	11.47	11.46	33.539	25.556	244.3	0.296	4.22	68.3	12.9	1.22	13.6	0.02	0.06	0.10	100	
109		11.12	11.11	33.592	25.661	234.5	0.317	3.98	64.0	15.0	1.33	15.5	0.01	0.04	0.08	110	211
123		10.84	10.83	33.659	25.763	225.1	0.349	3.71	59.3	17.2	1.46	17.4	0.01	0.03	0.06	124	210
125	ISL	10.78	10.76	33.675	25.786	222.9	0.354	3.64	58.1	17.8	1.49	17.8	0.01	0.03	0.06	126	
144		10.23	10.21	33.842	26.012	201.8	0.394	2.99	47.2	23.4	1.77	21.6	0.01	0.01	0.04	145	209
150	ISL	10.13	10.11	33.886	26.063	197.0	0.406	2.83	44.6	24.8	1.84	22.5	0.01	0.01	0.04	151	
168		9.95	9.93	33.992	26.177	186.6	0.441	2.45	38.5	28.2	2.02	24.5	0.01	0.01	0.04	169	208
198		9.74	9.72	34.094	26.292	176.3	0.495	2.11	33.0	31.6	2.18	26.5	0.00	0.00	0.03	199	207
200	ISL	9.72	9.70	34.098	26.299	175.7	0.499	2.10	32.8	31.8	2.19	26.6	0.00			201	
229		9.40	9.37	34.137	26.382	168.2	0.549	1.96	30.4	34.2	2.27	27.6	0.00			230	206
250	ISL	9.22	9.19	34.175	26.442	163.0	0.583	1.77	27.4	36.6	2.37	28.5	0.00			251	
269		9.05	9.02	34.208	26.495	158.2	0.614	1.58	24.3	39.0	2.46	29.4	0.00			271	205
300	ISL	8.67	8.64	34.237	26.578	150.8	0.662	1.36	20.8	43.2	2.57	30.8	0.00			302	
318		8.43	8.40	34.247	26.623	146.7	0.688	1.25	19.0	45.7	2.63	31.6	0.00			320	204
378		7.71	7.67	34.251	26.734	136.8	0.774	0.97	14.5	54.3	2.80	34.2	0.00			380	203
400	ISL	7.56	7.52	34.264	26.766	134.0	0.803	0.84	12.5	57.0	2.87	34.9	0.00			403	
437		7.34	7.30	34.287	26.816	129.7	0.852	0.64	9.5	61.2	2.98	36.0	0.00			440	202
500	ISL	6.84	6.79	34.294	26.891	123.1	0.932	0.49	7.2	67.9	3.09	37.6	0.00			503	
514		6.73	6.68	34.296	26.908	121.6	0.949	0.46	6.7	69.4	3.11	38.0	0.00			517	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | 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 33.2 W	24/01/98	1341 UTC	1337 m	300 14 kn			1017.5 mb	16.5 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	16.33	16.33	33.680	24.658	327.3	0.000	5.61	100.5	1.9	0.32	0.0	0.02	0.61	0.26	0	
1		16.33	16.33	33.680	24.658	327.4	0.003	5.61	100.5	1.9	0.32	0.0	0.02	0.61	0.26	1	220
1		16.33	16.33	33.670	24.650	328.1	0.003									1	221
10	ISL	16.45	16.45	33.717	24.659	327.6	0.033	5.60	100.5	1.9	0.33	0.0	0.03	0.65	0.29	10	
15		16.55	16.55	33.746	24.659	327.8	0.049	5.59	100.6	1.9	0.33	0.0	0.03	0.69	0.31	15	219
20	ISL	16.59	16.59	33.767	24.666	327.3	0.066	5.58	100.5	1.9	0.33	0.0	0.03	0.75	0.31	20	
30		16.67	16.67	33.803	24.675	326.7	0.098	5.57	100.5	1.9	0.33	0.1	0.04	0.87	0.30	30	218
45		16.82	16.81	33.844	24.672	327.5	0.147	5.55	100.4	1.9	0.34	0.1	0.05	0.96	0.34	45	217
50	ISL	16.82	16.81	33.844	24.672	327.7	0.164	5.55	100.4	1.9	0.35	0.1	0.05	0.96	0.34	50	
56		16.82	16.81	33.845	24.673	327.8	0.183	5.56	100.6	1.9	0.35	0.1	0.05	0.97	0.33	56	216
65		16.83	16.82	33.851	24.676	327.8	0.213	5.56	100.6	1.8	0.35	0.1	0.05	0.94	0.34	65	215
75	ISL	15.62	15.61	33.591	24.753	320.7	0.245	5.51	97.2	2.6	0.39	0.8	0.06	0.46	0.25	75	
76		15.45	15.44	33.562	24.768	319.2	0.248	5.50	96.7	2.8	0.39	0.9	0.06	0.41	0.24	76	214
86		13.85	13.84	33.458	25.030	294.4	0.279	4.95	84.2	6.0	0.73	5.3	0.03	0.13	0.16	86	213
95		13.10	13.09	33.458	25.182	280.1	0.305	4.83	80.9	7.4	0.83	7.1	0.03	0.10	0.12	95	212
100	ISL	12.95	12.94	33.492	25.238	274.8	0.319	4.66	77.8	8.4	0.91	8.2	0.03	0.09	0.11	100	
109		12.80	12.79	33.567	25.326	266.7	0.343	4.30	71.6	10.3	1.06	10.3	0.02	0.07	0.09	109	211
124		12.09	12.07	33.638	25.518	248.7	0.382	3.88	63.7	13.2	1.28	13.6	0.01	0.03	0.05	125	210
125	ISL	12.05	12.03	33.646	25.532	247.4	0.384	3.84	63.0	13.5	1.30	13.9	0.01	0.03	0.05	126	
144		11.35	11.33	33.798	25.780	224.1	0.429	3.19	51.6	18.6	1.61	18.4	0.01	0.01	0.04	145	209
150	ISL	11.22	11.20	33.828	25.827	219.8	0.442	3.06	49.3	19.6	1.68	19.2	0.01	0.01	0.04	151	
169		10.89	10.87	33.901	25.943	209.1	0.483	2.76	44.2	22.5	1.84	21.2	0.01	0.01	0.04	170	208
199		10.16	10.14	34.024	26.167	188.3	0.543	2.33	36.8	28.1	2.08	24.7	0.00	0.00	0.04	200	207
200	ISL	10.14	10.12	34.027	26.173	187.8	0.545	2.32	36.6	28.3	2.09	24.8	0.00			201	
230		9.68	9.65	34.100	26.307	175.5	0.599	2.07	32.3	32.2	2.23	26.7	0.00			231	206
250	ISL	9.47	9.44	34.135	26.370	169.9	0.634	1.96	30.5	33.9	2.29	27.5	0.00			251	
268		9.31	9.28	34.160	26.416	165.8	0.664	1.87	29.0	35.2	2.34	28.1	0.00			269	205
300	ISL	9.03	9.00	34.195	26.489	159.5	0.716	1.69	26.0	38.1	2.40	29.2	0.00			302	
319		8.85	8.82	34.212	26.531	155.7	0.746	1.56	23.9	40.2	2.44	29.9	0.00			321	204
376		8.10	8.06	34.261	26.685	141.7	0.831	1.03	15.5	50.2	2.71	32.9	0.00			378	203
400	ISL	7.82	7.78	34.265	26.729	137.7	0.864	0.91	13.6	53.3	2.78	33.9	0.00			402	
436		7.43	7.39	34.265	26.786	132.6	0.913	0.78	11.6	57.8	2.87	35.3	0.00			439	202
500	ISL	6.78	6.73	34.282	26.890	123.2	0.995	0.52	7.6	67.6	3.04	37.7	0.00			503	
518		6.60	6.55	34.288	26.919	120.5	1.017	0.45	6.6	70.3	3.09	38.4	0.00			521	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 10.7 N	118 53.8 W	24/01/98	1751 UTC	1473 m	300 18 kn	310 04 07	1	1020.0 mb	17.0 C	15.0 C	18m 02	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	16.30	16.30	33.598	24.602	332.7	0.000	5.62	100.5	1.8	0.29	0.1	0.00	0.39	0.14	0	
2	A	16.30	16.30	33.598	24.602	332.7	0.007	5.62	100.5	1.8	0.29	0.1	0.00	0.39	0.14	2	222
2		16.29	16.29	33.598	24.604	332.5	0.007									2	223
10	ISL	16.27	16.27	33.598	24.609	332.3	0.033	5.62	100.5	1.7	0.29	0.1	0.00	0.38	0.15	10	
13	A	16.26	16.26	33.598	24.612	332.2	0.043			1.7	0.29	0.1	0.00	0.37	0.15	13	221
20	ISL	16.26	16.26	33.598	24.612	332.4	0.066	5.62	100.4	1.7	0.29	0.1	0.00	0.37	0.15	20	
25	A	16.26	16.26	33.598	24.612	332.5	0.083	5.62	100.4	1.7	0.29	0.1	0.00	0.37	0.15	25	220
30	ISL	16.26	16.26	33.598	24.612	332.7	0.100	5.63	100.6	1.7	0.29	0.1	0.00	0.37	0.15	30	
36	A	16.26	16.25	33.598	24.612	332.9	0.120	5.63	100.6	1.7	0.30	0.1	0.00	0.37	0.16	36	219
42		16.26	16.25	33.598	24.613	333.0	0.140	5.62	100.4	1.7	0.30	0.1	0.00	0.37	0.16	42	218
48	A	16.24	16.23	33.620	24.634	331.2	0.160	5.60	100.1	1.8	0.30	0.2	0.01	0.50	0.22	48	217
50	ISL	16.23	16.22	33.629	24.644	330.3	0.166	5.60	100.0	1.8	0.30	0.2	0.01	0.54	0.23	50	
58		16.14	16.13	33.647	24.678	327.3	0.193	5.61	100.0	1.9	0.32	0.2	0.01	0.63	0.26	58	216
68	A	15.94	15.93	33.592	24.682	327.3	0.225	5.62	99.8	1.9	0.32	0.2	0.02	0.43	0.23	68	215
75	ISL	15.61	15.60	33.535	24.712	324.6	0.248	5.51	97.2	2.6	0.39	1.1	0.08	0.30	0.19	75	
77		15.51	15.50	33.519	24.722	323.7	0.255	5.47	96.3	2.9	0.42	1.5	0.09	0.27	0.18	77	214
84		14.08	14.07	33.389	24.929	304.0	0.277	5.37	91.7	4.0	0.53	3.0	0.05	0.19	0.18	84	213
94		13.48	13.47	33.451	25.100	287.8	0.306	4.87	82.2	6.6	0.77	6.4	0.02	0.12	0.13	94	212
100	ISL	13.06	13.05	33.488	25.213	277.2	0.323	4.63	77.5	8.0	0.89	8.2	0.02	0.08	0.10	100	
110		12.37	12.36	33.550	25.396	260.0	0.350	4.29	70.8	10.3	1.08	11.1	0.01	0.04	0.06	110	211
125		11.55	11.53	33.646	25.625	238.4	0.387	3.79	61.5	14.6	1.33	15.2	0.00	0.02	0.05	126	210
144		10.88	10.86	33.838	25.896	213.0	0.430	3.05	48.8	20.6	1.67	20.2	0.00	0.01	0.04	145	209
150	ISL	10.71	10.69	33.877	25.956	207.4	0.443	2.88	45.9	22.2	1.75	21.3	0.00	0.01	0.04	151	
169		10.29	10.27	33.964	26.097	194.3	0.481	2.50	39.5	26.1	1.95	23.7	0.00	0.00	0.04	170	208
198		9.94	9.92	34.063	26.235	181.8	0.535	2.22	34.9	29.4	2.11	25.7	0.00	0.00	0.03	199	207
200	ISL	9.92	9.90	34.067	26.241	181.2	0.539	2.21	34.7	29.5	2.12	25.8	0.00			201	
226		9.67	9.64	34.102	26.311	175.1	0.585	2.11	32.9	31.4	2.18	26.6	0.00			227	206
250	ISL	9.36	9.33	34.142	26.393	167.6	0.627	1.99	30.9	34.0	2.26	27.7	0.00			251	
268		9.12	9.09	34.173	26.456	161.9	0.656	1.86	28.7	36.3	2.33	28.7	0.00			269	205
300	ISL	8.72	8.69	34.222	26.558	152.6	0.707	1.51	23.1	41.1	2.49	30.4	0.00			302	
318		8.51	8.48	34.244	26.608	148.1	0.734	1.30	19.8	44.0	2.58	31.3	0.00			320	204
377		7.86	7.82	34.268	26.725	137.7	0.818	0.91	13.7	53.5	2.81	34.1	0.00			379	203
400	ISL	7.56	7.52	34.260	26.763	134.3	0.849	0.83	12.4	56.6	2.87	35.1	0.00			402	
440		7.08	7.04	34.250	26.823	128.8	0.902	0.73	10.8	61.6	2.95	36.6	0.00			443	202
500	ISL	6.76	6.71	34.295	26.903	121.9	0.977	0.48	7.0	68.5	3.11	38.1	0.00			503	
510		6.71	6.66	34.302	26.915	120.9	0.989	0.44	6.4	69.7	3.14	38.3	0.00			513	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 0.5 N	119 13.6 W	24/01/98	2301	UTC	1490 m	300 21 kn	300 06 04	1	1018.0 mb	17.2 C	16.1 C	25m 01	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	16.29	16.29	33.519	24.543	338.2	0.000	5.64	100.8	1.7	0.24	0.1	0.00	0.22	0.07	0	
2	16.29	16.29	33.519	24.544	338.3	0.007	5.64	100.8	1.7	0.24	0.1	0.00	0.22	0.07	2	220
3	16.29	16.29	33.521	24.545	338.2	0.010									3	221
10 ISL	16.29	16.29	33.520	24.545	338.5	0.034	5.65	101.0	1.7	0.26	0.0	0.00	0.22	0.07	10	
16	16.29	16.29	33.521	24.546	338.6	0.054	5.66	101.2	1.7	0.28	0.0	0.00	0.22	0.07	16	219
20 ISL	16.28	16.28	33.521	24.548	338.5	0.068	5.65	101.0	1.7	0.28	0.0	0.00	0.22	0.08	20	
30	16.24	16.24	33.520	24.557	338.0	0.102	5.64	100.7	1.7	0.27	0.0	0.00	0.23	0.09	30	218
46	16.24	16.23	33.52 D	24.557	338.4	0.156	5.65	100.9	1.7	0.24	0.0	0.00	0.26	0.09	46	217
50 ISL	16.24	16.23	33.521	24.558	338.5	0.169	5.65	100.9	1.7	0.24	0.0	0.00	0.26	0.09	50	
54	16.24	16.23	33.521	24.558	338.6	0.183	5.65	100.9	1.7	0.24	0.0	0.00	0.26	0.09	54	216
64	16.24	16.23	33.521	24.559	338.9	0.217	5.65	100.9	1.7	0.23	0.0	0.00	0.27	0.09	64	215
75	16.24	16.23	33.520	24.558	339.3	0.254	5.66	101.1	1.7	0.23	0.0	0.01	0.27	0.09	75	214
85	16.12	16.11	33.508	24.577	337.8	0.288	5.63	100.3	1.7	0.25	0.1	0.02	0.26	0.12	85	213
96	14.59	14.58	33.424	24.849	312.0	0.323	5.30	91.5	4.0	0.49	2.8	0.04	0.18	0.16	96	212
100 ISL	14.11	14.10	33.397	24.929	304.4	0.336	5.29	90.4	4.3	0.52	3.4	0.04	0.16	0.16	100	
108	13.27	13.26	33.368	25.079	290.3	0.360	5.28	88.7	5.1	0.57	4.6	0.02	0.14	0.15	108	211
124	12.00	11.98	33.457	25.394	260.4	0.404	4.70	76.9	9.4	0.90	9.9	0.01	0.06	0.08	125	210
125 ISL	11.95	11.93	33.470	25.414	258.6	0.406	4.64	75.8	9.8	0.93	10.3	0.01	0.06	0.08	126	
143	11.22	11.20	33.714	25.738	228.0	0.450	3.58	57.7	16.8	1.40	17.0	0.01	0.01	0.04	144	209
150 ISL	10.98	10.96	33.771	25.826	219.8	0.466	3.35	53.7	18.6	1.50	18.6	0.01	0.01	0.04	151	
169	10.44	10.42	33.879	26.005	203.1	0.506	2.96	46.9	22.6	1.69	21.5	0.01	0.01	0.04	170	208
200	9.89	9.87	34.031	26.218	183.4	0.566	2.45	38.4	28.4	1.97	24.8	0.00	0.00	0.03	201	207
227	9.52	9.49	34.106	26.339	172.4	0.614	2.24	34.9	32.0	2.13	26.5	0.00			228	206
250 ISL	9.25	9.22	34.172	26.434	163.7	0.652	1.95	30.2	35.4	2.27	28.0	0.00			251	
269	9.02	8.99	34.214	26.504	157.3	0.683	1.71	26.3	38.2	2.37	29.2	0.00			270	205
300 ISL	8.55	8.52	34.220	26.583	150.2	0.731	1.52	23.2	42.7	2.49	30.7	0.00			302	
319	8.27	8.24	34.213	26.620	146.8	0.759	1.44	21.8	45.3	2.55	31.5	0.00			321	204
375	7.83	7.79	34.245	26.712	138.9	0.839	1.04	15.6	52.3	2.75	33.6	0.00			377	203
400 ISL	7.63	7.59	34.265	26.757	134.9	0.873	0.86	12.8	55.7	2.84	34.5	0.00			402	
435	7.35	7.31	34.289	26.816	129.7	0.919	0.65	9.6	60.4	2.96	35.7	0.00			438	202
500 ISL	6.83	6.78	34.288	26.888	123.4	1.002	0.52	7.6	67.3	3.09	37.5	0.00			503	
508	6.77	6.72	34.288	26.896	122.7	1.011	0.50	7.3	68.1	3.11	37.7	0.00			511	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 34.5 W	25/01/98	0352	UTC	1850 m	310 16 kn			1019.5 mb	16.2 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	16.13	16.13	33.488	24.556	337.0	0.000	5.66	100.8	1.9	0.24	0.0	0.00	0.23	0.07	0	
1	16.13	16.13	33.488	24.556	337.1	0.003	5.66	100.8	1.9	0.24	0.0	0.00	0.23	0.07	1	220
1	16.13	16.13	33.489	24.557	337.0	0.003									1	221
10 ISL	16.14	16.14	33.490	24.556	337.4	0.034	5.66	100.9	1.9	0.24	0.0	0.00	0.22	0.07	10	
15	16.14	16.14	33.491	24.557	337.5	0.051	5.66	100.9	1.9	0.24	0.0	0.00	0.22	0.07	15	219
20 ISL	16.14	16.14	33.490	24.556	337.7	0.067	5.67	101.0	1.9	0.24	0.0	0.00	0.22	0.07	20	
30	16.14	16.14	33.489	24.556	338.0	0.101	5.67	101.0	1.9	0.23	0.0	0.00	0.23	0.07	30	218
45	16.14	16.13	33.493	24.559	338.2	0.152	5.63	100.3	1.9	0.22	0.0	0.00	0.23	0.06	45	217
50 ISL	16.15	16.14	33.494	24.558	338.5	0.169	5.64	100.5	1.9	0.22	0.0	0.00	0.24	0.07	50	
59	16.16	16.15	33.496	24.558	338.8	0.199	5.66	100.9	1.9	0.22	0.0	0.00	0.25	0.08	59	216
74	16.17	16.16	33.505	24.563	338.8	0.250	5.65	100.7	1.9	0.23	0.0	0.00	0.25	0.09	74	215
75 ISL	16.17	16.16	33.505	24.563	338.8	0.254	5.65	100.7	1.9	0.23	0.0	0.00	0.25	0.09	75	
84	16.17	16.16	33.504	24.562	339.2	0.284	5.65	100.7	1.9	0.22	0.0	0.00	0.28	0.10	84	214
93	16.09	16.08	33.503	24.580	337.7	0.315	5.66	100.7	1.9	0.22	0.0	0.00	0.27	0.09	93	213
100 ISL	15.08	15.06	33.417	24.738	322.7	0.338	5.58	97.3	2.7	0.31	1.0	0.03	0.23	0.15	100	
104	14.43	14.41	33.372	24.843	312.8	0.350	5.53	95.1	3.3	0.37	1.8	0.05	0.21	0.19	104	212
113	13.70	13.68	33.360	24.986	299.3	0.378	5.45	92.3	4.2	0.45	3.1	0.02	0.21	0.19	113	211
124	12.89	12.87	33.380	25.164	282.5	0.410	5.15	85.8	5.9	0.61	5.8	0.02	0.13	0.13	125	210
125 ISL	12.82	12.80	33.384	25.180	280.9	0.413	5.12	85.2	6.1	0.63	6.1	0.02	0.12	0.13	126	
139	11.96	11.94	33.456	25.401	260.1	0.451	4.69	76.7	9.9	0.89	10.5	0.01	0.06	0.09	140	209
150 ISL	11.44	11.42	33.514	25.543	246.8	0.478	4.41	71.3	12.1	1.04	12.8	0.00	0.05	0.07	151	
164	10.87	10.85	33.589	25.704	231.6	0.512	4.11	65.7	14.9	1.21	15.3	0.00	0.03	0.05	165	208
194	9.63	9.61	33.763	26.052	198.9	0.577	3.54	55.1	22.7	1.59	21.3	0.00	0.01	0.03	195	207
200 ISL	9.44	9.42	33.794	26.107	193.7	0.588	3.48	54.0	24.0	1.64	22.1	0.00			201	
227	8.77	8.75	33.910	26.305	175.2	0.638	3.25	49.7	29.2	1.82	24.7	0.00			228	206
250 ISL	8.38	8.35	33.974	26.415	165.0	0.677	3.03	45.9	32.8	1.95	26.4	0.00			251	
268	8.16	8.13	34.011	26.478	159.3	0.706	2.84	42.8	35.5	2.05	27.5	0.00			269	205
300 ISL	7.85	7.82	34.074	26.573	150.6	0.756	2.35	35.2	41.5	2.27	29.8	0.00			302	
317	7.69	7.66	34.093	26.612	147.2	0.781	2.13	31.8	44.6	2.37	30.9	0.00			319	204
378	6.77	6.74	34.033	26.693	139.8	0.869	2.12	31.0	52.9	2.50	33.5	0.00			380	203
400 ISL	6.55	6.51	34.046	26.733	136.1	0.899	1.87	27.2	57.0	2.61	34.8	0.00			402	
437	6.25	6.21	34.087	26.805	129.6	0.948	1.37	19.8	64.3	2.83	37.0	0.00			440	202
500 ISL	5.84	5.80	34.169	26.922	119.0	1.027	0.79	11.3	76.1	3.11	39.6	0.00			503	
513	5.76	5.72	34.186	26.945	116.9	1.042	0.67	9.6	78.5	3.17	40.1	0.00			516	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | 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	25/01/98	0956 UTC	3929 m	310 16 kn			1019.9 mb	15.5 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	16.35	16.35	33.515	24.527	339.8	0.000	5.61	100.4	1.9	0.27	0.0	0.00	0.21	0.05	0	
2		16.35	16.35	33.515	24.527	339.9	0.007	5.61	100.4	1.9	0.27	0.0	0.00	0.21	0.05	2	220
10	ISL	16.36	16.36	33.515	24.525	340.4	0.034	5.62	100.6	1.9	0.26	0.0	0.00	0.20	0.05	10	
16		16.36	16.36	33.515	24.525	340.5	0.054	5.62	100.6	1.9	0.25	0.0	0.00	0.20	0.06	16	219
20	ISL	16.36	16.36	33.516	24.526	340.6	0.068	5.62	100.6	1.9	0.25	0.0	0.00	0.21	0.06	20	
30		16.36	16.36	33.518	24.528	340.7	0.102	5.61	100.4	1.9	0.26	0.0	0.00	0.22	0.07	30	218
46		16.37	16.36	33.519	24.527	341.3	0.157	5.60	100.2	1.7	0.26	0.0	0.00	0.22	0.06	46	217
50	ISL	16.37	16.36	33.519	24.527	341.4	0.170	5.61	100.4	1.7	0.26	0.0	0.00	0.22	0.06	50	
60		16.37	16.36	33.519	24.527	341.7	0.204	5.62	100.6	1.7	0.26	0.0	0.00	0.22	0.06	60	216
74		16.37	16.36	33.521	24.529	342.0	0.252	5.60	100.2	1.7	0.27	0.0	0.00	0.24	0.07	74	215
75	ISL	16.33	16.32	33.512	24.532	341.8	0.256	5.60	100.2	1.7	0.27	0.0	0.00	0.24	0.07	75	
86		15.93	15.92	33.525	24.633	332.5	0.293	5.59	99.2	1.7	0.27	0.0	0.00	0.24	0.07	86	214
97		13.80	13.79	33.376	24.977	299.7	0.328	5.36	91.0	4.0	0.52	3.1	0.04	0.25	0.19	97	213
100	ISL	13.49	13.48	33.374	25.039	293.9	0.337	5.27	88.9	4.7	0.60	4.0	0.03	0.23	0.19	100	
104		13.16	13.15	33.387	25.115	286.7	0.348	5.12	85.8	5.8	0.70	5.3	0.02	0.19	0.17	104	212
116		12.22	12.20	33.494	25.381	261.5	0.381	4.47	73.5	9.9	1.02	10.3	0.01	0.14	0.14	116	211
125		11.65	11.63	33.594	25.566	244.0	0.404	3.94	64.0	13.5	1.24	13.6	0.01	0.09	0.10	126	210
140		11.29	11.27	33.768	25.768	225.2	0.439	3.05	49.2	19.2	1.60	18.5	0.00	0.04	0.06	141	209
150	ISL	11.18	11.16	33.891	25.883	214.4	0.461	2.46	39.7	22.8	1.83	21.2	0.00	0.02	0.04	151	
163		11.11	11.09	34.031	26.005	203.2	0.488	1.81	29.2	26.7	2.09	23.8	0.00	0.01	0.03	164	208
196		10.96	10.94	34.165	26.137	191.4	0.553	1.32	21.2	30.5	2.32	26.1	0.00	0.00	0.02	197	207
200	ISL	10.94	10.92	34.175	26.149	190.4	0.561	1.31	21.0	30.8	2.33	26.2	0.00			201	
230		10.75	10.72	34.228	26.224	183.9	0.617	1.21	19.4	32.3	2.39	26.9	0.00			231	206
250	ISL	10.56	10.53	34.244	26.271	179.9	0.653	1.25	19.9	33.0	2.40	27.2	0.00			251	
267		10.36	10.33	34.252	26.312	176.3	0.684	1.31	20.8	33.6	2.41	27.5	0.00			268	205
300	ISL	9.93	9.90	34.270	26.400	168.4	0.740	1.34	21.1	35.5	2.44	28.2	0.00			302	
318		9.64	9.60	34.273	26.451	163.8	0.770	1.35	21.1	37.1	2.47	28.7	0.00			320	204
376		8.33	8.29	34.234	26.629	147.2	0.861	1.33	20.2	45.7	2.60	31.4	0.00			378	203
400	ISL	7.92	7.88	34.241	26.696	140.9	0.895	1.13	17.0	50.6	2.71	32.8	0.00			402	
436		7.41	7.37	34.259	26.784	132.8	0.944	0.83	12.3	58.0	2.88	35.0	0.00			439	202
500	ISL	6.84	6.79	34.270	26.872	124.9	1.027									503	
517		6.69	6.64	34.274 D	26.896	122.8	1.048									520	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9802 | STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 11.1 N	120 56.9 W	25/01/98	1834 UTC	3857 m	330 12 kn	330 03 06	2	1023.1 mb	16.7 C	15.0 C	30m 01	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	16.69	16.69	33.567	24.488	343.5	0.000	5.59	100.7	0.6	0.23	0.1	0.00	0.19	0.05	0	
1		16.69	16.69	33.566	24.487	343.6	0.003									1	224
2	A	16.69	16.69	33.567	24.488	343.6	0.007	5.59	100.7	0.6	0.23	0.1	0.00	0.19	0.05	2	223
10		16.68	16.68	33.569	24.492	343.4	0.034	5.61	101.1	0.6	0.24	0.0	0.00	0.17	0.05	10	222
20	A	16.68	16.68	33.568	24.492	343.8	0.069	5.60	100.9	0.6	0.24	0.0	0.00	0.02 U	0.21 U	20	221
30		16.68	16.68	33.565	24.490	344.3	0.103	5.59	100.7	0.6	0.24	0.0	0.00	0.19	0.03	30	220
41	A	16.68	16.67	33.58	24.502	343.6	0.141	5.60	100.9	0.6	0.24	0.0	0.00	0.18	0.04	41	219
50	ISL	16.68	16.67	33.567	24.492	344.8	0.172	5.60	100.9	0.6	0.23	0.0	0.00	0.18	0.04	50	
51		16.68	16.67	33.565	24.491	345.0	0.175	5.60	100.9	0.6	0.23	0.0	0.00	0.18	0.04	51	218
60	A	16.65	16.64	33.560	24.494	344.9	0.206	5.60	100.8	0.6	0.24	0.0	0.00	0.19	0.07	60	217
71		16.52	16.51	33.540	24.509	343.8	0.244	5.60	100.5	0.6	0.24	0.0	0.00	0.22	0.07	71	216
75	ISL	16.50	16.49	33.535	24.510	343.9	0.258	5.61	100.7	0.6	0.24	0.0	0.00	0.21	0.07	75	
81	A	16.43	16.42	33.517	24.513	343.8	0.279	5.62	100.7	0.6	0.24	0.0	0.00	0.20	0.06	81	215
92		16.01	16.00	33.463	24.567	338.9	0.316	5.63	100.0	0.8	0.26	0.0	0.03	0.28	0.13	92	214
100	ISL	15.30	15.28	33.441	24.709	325.6	0.343	5.55	97.2	2.5	0.35	0.7	0.11	0.28	0.20	100	
101		15.20	15.18	33.439	24.729	323.7	0.346	5.54	96.8	2.7	0.36	0.8	0.12	0.28	0.21	101	213
113	A	14.22	14.20	33.440	24.940	303.8	0.384	5.45	93.4	3.5	0.45	2.0	0.06	0.20	0.25	113	212
118		14.04	14.02	33.449	24.985	299.6	0.399	5.43	92.7	3.6	0.46	2.2	0.05	0.22	0.23	118	211
125		13.54	13.52	33.442	25.082	290.5	0.419	5.31	89.7	4.6	0.57	3.8	0.03	0.19	0.19	126	210
139		12.42	12.40	33.459	25.317	268.3	0.459	5.04	83.2	7.2	0.78	7.3	0.01	0.11	0.13	140	209
150	ISL	11.61	11.59	33.491	25.494	251.5	0.487	4.74	76.9	10.0	0.97	10.5	0.01	0.07	0.10	151	
164		10.71	10.69	33.556	25.706	231.4	0.521	4.34	69.1	14.1	1.22	14.6	0.01	0.04	0.07	165	208
194		9.44	9.42	33.768	26.087	195.5	0.585	3.61	56.0	22.7	1.65	21.3	0.01	0.01	0.04	195	207
200	ISL	9.29	9.27	33.806	26.141	190.4	0.597	3.50	54.1	24.1	1.71	22.2	0.01			201	
228		8.77	8.75	33.947	26.334	172.5	0.647	3.07	46.9	29.9	1.93	25.2	0.00			229	206
250	ISL	8.44	8.41	34.008	26.433	163.4	0.684	2.81	42.7	33.7	2.07	26.9	0.00			251	
270		8.18	8.15	34.042	26.499	157.3	0.716	2.58	38.9	37.0	2.18	28.3	0.00			271	205
300	ISL	7.80	7.77	34.086	26.590	149.0	0.762	2.15	32.2	43.1	2.37	30.6	0.00			302	
319		7.59	7.56	34.107	26.637	144.8	0.790	1.88	28.0	47.0	2.48	31.9	0.00			321	204
377		7.09	7.05	34.153	26.744	135.2	0.871	1.30	19.1	56.0	2.73	34.9	0.00			379	203
400	ISL	6.84	6.80	34.167	26.790	131.1	0.902	1.10	16.1	60.5	2.83	36.1	0.00			402	
437		6.47	6.43	34.191	26.858	124.8	0.949	0.83	12.0	67.3	2.99	37.9	0.00			440	202
500	ISL	6.19	6.15	34.248	26.940	117.7	1.026	0.52	7.5	74.2	3.17	39.3	0.00			503	
516		6.12	6.07	34.263	26.961	115.9	1.044	0.44	6.3	76.0	3.21	39.7	0.00			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 35.1 W	26/01/98	0017 UTC	4083 m	330 13 kn	340 03 04	1	1020.9 mb	16.8 C	15.8 C	27m 01	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		15.84	15.84	33.404	24.557	336.9	0.000	5.74	101.6	1.8	0.25	0.0	0.00	0.16	0.05	0	220
1		15.84	15.84	33.404	24.557	337.0	0.003									1	221
10	ISL	15.82	15.82	33.406	24.563	336.7	0.034	5.74	101.6	1.7	0.25	0.0	0.00	0.16	0.05	10	
14		15.81	15.81	33.407	24.567	336.5	0.047	5.74	101.6	1.7	0.25	0.0	0.00	0.16	0.05	14	219
20	ISL	15.79	15.79	33.409	24.573	336.1	0.067	5.74	101.5	1.7	0.25	0.0	0.00	0.16	0.04	20	
30		15.76	15.76	33.412	24.582	335.5	0.101	5.75	101.6	1.7	0.25	0.0	0.00	0.15	0.04	30	218
44		15.76	15.75	33.414	24.584	335.8	0.148	5.75	101.6	1.8	0.25	0.0	0.00	0.21	0.07	44	217
50	ISL	15.75	15.74	33.418	24.590	335.4	0.168	5.75	101.6	1.8	0.25	0.0	0.00	0.22	0.07	50	
59		15.70	15.69	33.423	24.605	334.2	0.198	5.75	101.5	1.8	0.26	0.1	0.00	0.24	0.08	59	216
74		15.48	15.47	33.426	24.657	329.7	0.248	5.73	100.7	2.1	0.28	0.1	0.03	0.40	0.21	74	215
75	ISL	15.47	15.46	33.428	24.661	329.4	0.251	5.73	100.7	2.1	0.28	0.1	0.03	0.40	0.22	75	
84		15.30	15.29	33.439	24.707	325.3	0.281	5.70	99.8	2.3	0.30	0.2	0.08	0.40	0.28	84	214
93		14.77	14.76	33.417	24.805	316.1	0.310	5.60	97.0	2.8	0.38	1.1	0.14	0.34	0.25	93	213
100	ISL	14.02	14.01	33.418	24.964	301.0	0.331	5.29	90.3	4.6	0.58	4.0	0.08	0.25	0.21	100	
103		13.62	13.61	33.421	25.049	293.0	0.340	5.14	87.0	5.6	0.67	5.4	0.05	0.21	0.19	103	212
112		12.15	12.14	33.428	25.343	265.0	0.365	4.88	80.1	8.1	0.86	8.5	0.01	0.13	0.14	112	211
123		11.97	11.95	33.457	25.400	259.8	0.394	4.69	76.7	9.8	1.00	10.6	0.01	0.09	0.11	124	210
125	ISL	11.85	11.83	33.468	25.431	256.9	0.399	4.63	75.5	10.4	1.04	11.2	0.01	0.08	0.10	126	
139		10.81	10.79	33.560	25.691	232.2	0.433	4.15	66.2	15.0	1.32	15.9	0.01	0.05	0.07	140	209
150	ISL	10.18	10.16	33.630	25.855	216.8	0.458	3.82	60.1	18.7	1.51	19.0	0.01	0.03	0.05	151	
163		9.60	9.58	33.707	26.012	201.9	0.485	3.53	54.9	22.6	1.68	21.8	0.01	0.01	0.04	164	208
191		8.95	8.93	33.836	26.218	182.8	0.539	3.39	52.0	27.3	1.81	24.0	0.00	0.00	0.03	192	207
200	ISL	8.80	8.78	33.872	26.270	178.0	0.555	3.26	49.9	28.9	1.87	24.9	0.00			201	
228		8.40	8.38	33.966	26.406	165.5	0.604	2.78	42.2	34.1	2.07	27.5	0.00			229	206
250	ISL	8.12	8.09	34.028	26.497	157.1	0.639	2.49	37.5	38.3	2.21	29.1	0.00			251	
266		7.91	7.88	34.058	26.552	152.1	0.664	2.33	35.0	41.2	2.29	30.0	0.00			267	205
300	ISL	7.27	7.24	34.041	26.630	144.9	0.714	2.29	33.8	46.1	2.37	31.5	0.00			302	
318		6.93	6.90	34.024	26.664	141.7	0.740	2.27	33.3	48.9	2.41	32.3	0.00			320	204
377		6.30	6.27	34.072	26.786	130.6	0.820	1.43	20.7	63.1	2.77	37.0	0.00			379	203
400	ISL	6.28	6.24	34.113	26.821	127.6	0.850	1.16	16.8	66.1	2.88	37.9	0.00			402	
438		6.24	6.20	34.174	26.875	123.1	0.898	0.80	11.6	70.1	3.03	38.8	0.00			441	202
500	ISL	5.86	5.82	34.240	26.975	114.0	0.971	0.49	7.0	79.6	3.18	40.5	0.00			503	
516		5.76	5.72	34.257	27.001	111.7	0.989	0.41	5.9	82.1	3.22	40.9	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 30.7 N	122 15.7 W	26/01/98	0612 UTC	4158 m	340 07 kn			1022.9 mb	15.8 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	16.91	16.91	33.561	24.432	348.9	0.000	5.60	101.4	1.9	0.24	0.0	0.00	0.11	0.03	0	
1		16.91	16.91	33.561	24.432	348.9	0.003	5.60	101.4	1.9	0.24	0.0	0.00	0.11	0.03	1	220
2		16.93	16.93	33.560	24.427	349.4	0.007									2	221
10	ISL	16.90	16.90	33.560	24.434	349.0	0.035	5.60	101.3	1.9	0.24	0.0	0.00	0.11	0.03	10	
16		16.90	16.90	33.559	24.434	349.3	0.056	5.61	101.5	1.9	0.24	0.0	0.00	0.12	0.03	16	219
20	ISL	16.87	16.87	33.554	24.437	349.1	0.070	5.61	101.4	1.9	0.24	0.0	0.00	0.12	0.04	20	
30	ISL	16.80	16.80	33.545	24.447	348.5	0.105	5.62	101.5	1.9	0.24	0.0	0.00	0.14	0.07	30	
31		16.79	16.78	33.544	24.448	348.3	0.108	5.62	101.5	1.9	0.24	0.0	0.00	0.14	0.07	31	218
44		16.80	16.79	33.554 D	24.454	348.2	0.153									44	217
50	ISL	16.79	16.78	33.554	24.457	348.2	0.174	5.61	101.3	1.9	0.24	0.1	0.00	0.16	0.07	50	
60		16.78	16.77	33.555	24.460	348.2	0.209	5.60	101.1	1.9	0.24	0.1	0.00	0.18	0.06	60	216
75	ISL	16.66	16.65	33.530	24.469	347.8	0.261	5.60	100.8	1.9	0.24	0.1	0.00	0.22	0.09	75	
76		16.65	16.64	33.528	24.470	347.7	0.265	5.60	100.8	1.9	0.24	0.1	0.00	0.22	0.09	76	215
83		16.54	16.53	33.511	24.483	346.7	0.289	5.59	100.4	1.9	0.25	0.1	0.01	0.22	0.12	83	214
93		16.18	16.17	33.473	24.537	341.9	0.324	5.61	100.0	1.9	0.25	0.1	0.01	0.25	0.19	93	213
100	ISL	15.95	15.93	33.468	24.585	337.5	0.347	5.60	99.4	2.1	0.27	0.1	0.07	0.24	0.18	100	
102		15.88	15.86	33.467	24.600	336.1	0.354	5.60	99.2	2.2	0.28	0.1	0.09	0.24	0.18	102	212
114		15.23	15.21	33.441	24.725	324.5	0.394	5.61	98.1	2.4	0.31	0.5	0.13	0.25	0.22	114	211
124		13.79	13.77	33.381	24.984	299.8	0.425	5.52	93.7	3.6	0.48	2.4	0.05	0.21	0.19	125	210
125	ISL	13.68	13.66	33.379	25.005	297.8	0.428	5.50	93.2	3.8	0.50	2.7	0.05	0.20	0.19	126	
138		12.47	12.45	33.380	25.246	275.0	0.465	5.20	85.9	6.3	0.73	6.5	0.01	0.11	0.15	139	209
150	ISL	11.70	11.68	33.407	25.412	259.3	0.497	4.99	81.1	8.3	0.89	9.1	0.01	0.07	0.12	151	
162		11.09	11.07	33.457	25.562	245.1	0.527	4.77	76.5	10.7	1.04	11.6	0.01	0.06	0.09	163	208
193		9.47	9.45	33.705	26.032	200.6	0.597	3.93	60.9	21.0	1.55	20.0	0.00	0.01	0.03	194	207
200	ISL	9.29	9.27	33.755	26.101	194.2	0.610	3.80	58.7	22.6	1.62	21.1	0.00			201	
228		8.79	8.77	33.911	26.303	175.4	0.662	3.37	51.5	28.2	1.82	24.2	0.00			229	206
250	ISL	8.34	8.31	33.968	26.417	164.8	0.700	3.05	46.2	32.6	1.97	26.5	0.00			251	
267		8.02	7.99	33.992	26.484	158.6	0.727	2.84	42.7	35.9	2.08	28.0	0.00			268	205
300	ISL	7.59	7.56	34.027	26.574	150.4	0.778	2.55	38.0	41.9	2.24	30.1	0.00			302	
316		7.43	7.40	34.039	26.606	147.5	0.802	2.41	35.8	44.7	2.31	31.0	0.00			318	204
377		6.96	6.92	34.096	26.717	137.6	0.889	1.62	23.8	54.7	2.65	34.8	0.00			379	203
400	ISL	6.74	6.70	34.110	26.758	133.9	0.920	1.40	20.4	59.0	2.75	36.3	0.00			402	
437		6.39	6.35	34.133	26.823	128.0	0.969	1.11	16.1	65.7	2.89	38.5	0.00			440	202
500	ISL	5.98	5.94	34.190	26.921	119.3	1.046	0.71	10.2	74.9	3.07	40.1	0.00			503	
518		5.86	5.82	34.207	26.949	116.7	1.068	0.60	8.6	77.5	3.12	40.5	0.00			521	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 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 55.4 W	26/01/98	1157 UTC	3989 m	310 02 kn			1022.0 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	17.10	17.10	33.550	24.379	353.9	0.000	5.56	101.0	1.5	0.22	0.0	0.00	0.10	0.03	0	
2		17.10	17.10	33.550	24.379	354.0	0.007	5.56	101.0	1.5	0.22	0.0	0.00	0.10	0.03	2	220
10	ISL	17.08	17.08	33.553	24.386	353.6	0.035	5.56	101.0	1.5	0.23	0.0	0.00	0.10	0.03	10	
15		17.07	17.07	33.556	24.391	353.3	0.053	5.56	100.9	1.5	0.23	0.0	0.00	0.10	0.03	15	219
20	ISL	17.06	17.06	33.560	24.397	352.9	0.071	5.56	100.9	1.5	0.23	0.0	0.00	0.11	0.04	20	
30		17.05	17.05	33.565	24.403	352.6	0.106	5.55	100.7	1.5	0.22	0.0	0.00	0.13	0.05	30	218
45		17.04	17.03	33.557	24.400	353.4	0.159	5.56	100.9	1.5	0.21	0.0	0.00	0.15	0.05	45	217
50	ISL	17.03	17.02	33.557	24.403	353.3	0.177	5.56	100.8	1.5	0.22	0.0	0.00	0.16	0.05	50	
60		17.02	17.01	33.552	24.402	353.8	0.212	5.57	101.0	1.5	0.23	0.0	0.00	0.17	0.05	60	216
74		16.93	16.92	33.536	24.411	353.3	0.261	5.56	100.6	1.5	0.22	0.0	0.00	0.18	0.06	74	215
75	ISL	16.93	16.92	33.536	24.411	353.4	0.265	5.56	100.6	1.5	0.22	0.0	0.00	0.18	0.06	75	
84		16.86	16.85	33.520	24.416	353.2	0.297	5.56	100.5	1.5	0.23	0.0	0.00	0.20	0.08	84	214
93		16.59	16.58	33.480	24.448	350.4	0.328	5.58	100.3	1.5	0.24	0.1	0.00	0.23	0.13	93	213
100	ISL	16.36	16.34	33.478	24.500	345.7	0.353	5.59	100.0	1.6	0.26	0.1	0.05	0.24	0.16	100	
104		16.12	16.10	33.478	24.554	340.5	0.367	5.59	99.5	1.8	0.27	0.1	0.08	0.24	0.18	104	212
116		14.48	14.46	33.447	24.891	308.6	0.405	5.56	95.8	2.7	0.35	1.2	0.10	0.20	0.22	116	211
124		13.18	13.16	33.428	25.143	284.5	0.429	5.37	90.0	3.8	0.50	3.1	0.03	0.16	0.16	124	210
125	ISL	13.15	13.13	33.442	25.160	282.9	0.432	5.35	89.7	3.9	0.52	3.3	0.03	0.15	0.15	125	
139		12.70	12.68	33.536	25.322	267.8	0.471	5.00	83.1	6.2	0.70	6.5	0.01	0.09	0.10	140	209
150	ISL	12.16	12.14	33.609	25.483	252.7	0.499	4.74	77.9	8.5	0.84	9.0	0.01	0.06	0.07	151	
165		11.40	11.38	33.691	25.688	233.3	0.536	4.42	71.5	11.7	1.03	12.2	0.00	0.03	0.05	166	208
194		10.49	10.47	33.742	25.890	214.5	0.601	3.97	63.0	16.5	1.34	16.7	0.00	0.01	0.03	195	207
200	ISL	10.34	10.32	33.788	25.952	208.7	0.613	3.75	59.3	18.4	1.45	18.2	0.00			201	
227		9.76	9.73	34.009	26.223	183.4	0.666	2.73	42.7	27.1	1.92	24.3	0.00			228	206
250	ISL	9.44	9.41	34.099	26.347	172.1	0.707	2.38	37.0	31.2	2.09	26.4	0.00			251	
269		9.17	9.14	34.131	26.416	165.8	0.739	2.25	34.7	33.9	2.16	27.2	0.00			270	205
300	ISL	8.40	8.37	34.141	26.544	153.8	0.789	2.07	31.4	39.9	2.30	29.3	0.00			302	
318		7.91	7.88	34.130	26.609	147.6	0.816	2.00	30.0	43.7	2.37	30.5	0.00			320	204
378		6.56	6.53	34.057	26.740	135.2	0.901	1.80	26.2	57.0	2.59	34.9	0.00			380	203
400	ISL	6.31	6.27	34.067	26.781	131.4	0.930	1.59	23.0	61.5	2.69	36.2	0.00			402	
439		6.03	5.99	34.102	26.844	125.7	0.980	1.18	16.9	68.6	2.85	38.2	0.00			442	202
500	ISL	5.67	5.63	34.140	26.919	119.0	1.055	0.85	12.1	76.7	3.01	40.0	0.00			503	
512		5.60	5.56	34.147	26.934	117.7	1.069	0.79	11.2	78.3	3.04	40.4	0.00			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9802 STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
29 50.9 N	123 35.9 W	26/01/98	1844 UTC	4057 m	280 02 kn	300 04 05	1	1023.9 mb	18.0 C	16.5 C	44m 01	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	17.86	17.86	33.720	24.327	358.9	0.000	5.48	101.1	1.6	0.22	0.1	0.00	0.09	0.02	0	
2		17.89	17.89	33.720	24.320	359.6	0.007									2	223
3	A	17.86	17.86	33.720	24.327	359.0	0.011	5.48	101.1	1.6	0.22	0.1	0.00	0.09	0.02	3	222
10	ISL	17.82	17.82	33.718	24.336	358.4	0.036	5.48	101.0	1.6	0.22	0.1	0.00	0.10	0.02	10	
17		17.78	17.78	33.717	24.345	357.8	0.061	5.49	101.1	1.6	0.23	0.1	0.00	0.10	0.02	17	221
20	ISL	17.78	17.78	33.717	24.345	357.8	0.072	5.49	101.1	1.6	0.23	0.1	0.00	0.09	0.02	20	
29	A	17.78	17.78	33.718	24.346	358.1	0.104	5.49	101.1	1.6	0.23	0.1	0.00	0.08	0.03	29	220
30	ISL	17.77	17.76	33.717	24.348	357.9	0.107	5.49	101.1	1.6	0.23	0.1	0.00	0.08	0.03	30	
44		17.66	17.65	33.704	24.365	356.8	0.158	5.49	100.9	1.6	0.23	0.2	0.00	0.11	0.03	44	219
50	ISL	17.66	17.65	33.699	24.361	357.3	0.179	5.49	100.9	1.6	0.23	0.2	0.00	0.11	0.03	50	
61	A	17.65	17.64	33.688	24.356	358.2	0.218	5.50	101.0	1.6	0.23	0.2	0.00	0.12	0.04	61	218
69		17.66	17.65	33.695	24.359	358.2	0.247	5.47	100.5	1.6	0.23	0.2	0.00	0.13	0.04	69	217
75	ISL	17.66	17.65	33.694	24.359	358.5	0.268	5.48	100.7	1.7	0.23	0.2	0.00	0.15	0.05	75	
78		17.66	17.65	33.694	24.359	358.6	0.279	5.49	100.9	1.7	0.23	0.2	0.00	0.16	0.05	78	216
89	A	17.63	17.61	33.684	24.359	358.9	0.319	5.50	101.0	1.8	0.23	0.2	0.00	0.18	0.05	89	215
100		17.59	17.57	33.681	24.367	358.6	0.358	5.48	100.5	1.8	0.23	0.2	0.00	0.18	0.07	100	214
110		16.74	16.72	33.522	24.446	351.2	0.394	5.57	100.4	1.8	0.23	0.2	0.01	0.26	0.17	110	213
118	A	15.97	15.95	33.476	24.587	337.8	0.421	5.60	99.4	1.9	0.25	0.2	0.07	0.25	0.19	118	212
125	ISL	15.10	15.08	33.444	24.756	321.8	0.444	5.59	97.5	2.3	0.30	0.6	0.09	0.22	0.19	125	
130		14.52	14.50	33.429	24.869	311.1	0.460	5.58	96.2	2.7	0.35	1.2	0.10	0.20	0.19	131	211
141		13.82	13.80	33.412	25.002	298.6	0.494	5.42	92.1	3.9	0.49	3.0	0.02	0.15	0.17	142	210
150	ISL	13.12	13.10	33.398	25.133	286.2	0.520	5.26	88.1	4.9	0.61	4.8	0.01	0.12	0.15	151	
153		12.86	12.84	33.399	25.185	281.3	0.528	5.20	86.6	5.4	0.66	5.6	0.01	0.11	0.14	154	209
165	A	11.66	11.64	33.468	25.467	254.4	0.561	4.82	78.3	9.1	0.94	10.1	0.00	0.05	0.07	166	208
194		10.23	10.21	33.673	25.881	215.3	0.629	4.19	66.1	16.4	1.31	16.6	0.00	0.01	0.03	195	207
200	ISL	9.97	9.95	33.707	25.952	208.6	0.641	4.07	63.8	18.2	1.39	17.9	0.00			201	
228		8.95	8.93	33.836	26.219	183.4	0.696	3.63	55.7	25.8	1.71	22.9	0.00			229	206
250	ISL	8.50	8.47	33.907	26.344	171.7	0.735	3.48	52.9	29.6	1.84	25.0	0.00			251	
270		8.21	8.18	33.950	26.422	164.6	0.769	3.29	49.7	32.6	1.92	26.2	0.00			271	205
300	ISL	7.70	7.67	33.989	26.528	154.8	0.817	2.45	36.6	38.3	2.07	28.3	0.00			302	
317		7.42	7.39	34.002	26.579	150.1	0.843	1.99	29.5	41.7	2.16	29.5	0.00			319	204
377		6.59	6.56	34.030	26.715	137.6	0.929	2.01	29.2	55.0	2.53	34.3	0.00			379	203
400	ISL	6.34	6.30	34.047	26.761	133.3	0.960	1.75	25.3	60.0	2.66	35.9	0.00			402	
436		6.01	5.97	34.077	26.827	127.2	1.007	1.28	18.4	67.3	2.83	38.1	0.00			439	202
500	ISL	5.55	5.51	34.126	26.923	118.5	1.086	0.87	12.4	78.0	3.03	40.4	0.00			503	
515		5.44	5.40	34.138	26.946	116.5	1.103	0.78	11.0	80.5	3.08	41.0	0.00			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 53.6 N	121 11.7 W	10/ 2/98	1849 UTC	32 m	02	1218 - 1807 PST	1219 PST	1807 PST	216.2 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	15.23	33.292	24.606	5.75	100.5	1.9	0.28	0.0	0.01	0.30	0.11	95. A	3.5	3.9	3.7	0.03
11	15.14	33.293	24.627	5.75	100.3	1.9	0.28	0.0	0.01	0.33	0.12					
21	15.13	33.294	24.630	5.76	100.5	1.9	0.27	0.0	0.01	0.33	0.12	37.	4.0	4.2	4.1	0.07
32	15.13	33.292	24.629	5.77	100.6	1.9	0.27	0.0	0.01	0.34	0.13					
44	15.13	33.293	24.630	5.75	100.3	1.9	0.27	0.0	0.01	0.35	0.14	12.	2.8	2.9	2.8	0.03
55	15.13	33.293	24.630	5.74	100.1	1.9	0.27	0.0	0.01	0.49 U	-0.02 U					
65	15.13	33.292	24.630	5.76	100.5	1.9	0.27	0.0	0.01	0.36	0.12	4.4	1.0	1.1	1.0	0.03
76	15.10	33.296	24.640	5.74	100.0	1.9	0.27	0.0	0.01	0.13 B	0.10 B					
87	13.97	33.330	24.906	5.63	95.9	2.4	0.37	1.2	0.07	0.11	0.16	1.5	0.13	0.17	0.15	0.03
97	13.16	33.332	25.072	5.38	90.1	4.6	0.59	4.2	0.03	0.09	0.09					
110	11.78	33.464	25.441	4.68	76.2	9.7	1.00	10.7	0.04	0.08	0.10					
119	11.60	33.472	25.480	4.64	75.3	10.4	1.02	11.2	0.05	0.08	0.09	0.33	0.02	0.00	0.01	0.01

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

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 43.4 N	123 40.1 W	9/ 2/98	1850 UTC	32 m	02	1229 - 1817 PST	1229 PST	1818 PST	165.6 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	14.81	33.153	24.590	5.79	100.3	2.2	0.27	0.1	0.00	0.26	0.06	95. A	1.3	1.3	1.3	0.03
10	14.80	33.153	24.593	5.79	100.2	2.1	0.27	0.1	0.00	0.27	0.07					
20	14.85	33.177	24.601	5.78	100.2	2.1	0.26	0.1	0.00	0.27	0.08	38.	2.8	2.9	2.8	0.03
31	14.97	33.197	24.590	5.79	100.6	2.1	0.25	0.0	0.00	0.25	0.07					
44	15.02	33.227	24.603	5.75	100.0	2.0	0.25	0.0	0.00	0.28	0.07	12.	2.4	2.3	2.3	0.02
54	15.12	33.256	24.604	5.74	100.1	2.0	0.25	0.0	0.00	0.29	0.09					
64	15.19	33.285	24.612	5.74	100.2	1.9	0.25	0.1	0.00	0.28	0.08	4.6	1.3	1.5	1.4	0.02
76	15.27	33.352	24.646	5.68	99.4	2.0	0.25	0.2	0.02	0.25	0.09					
86	14.48	33.502	24.932	5.58	96.2	3.0	0.31	1.1	0.11	0.22	0.15	1.6	0.44	0.41	0.42	0.02
97	12.58	33.291	25.154	5.39	89.2	5.4	0.63	5.1	0.03	0.15	0.14					
108	12.15	33.489	25.391	5.16	84.7	7.0	0.69	6.7	0.02	0.08	0.11					
119	11.76	33.520	25.488	4.99	81.3	8.2	0.80	8.5	0.02	0.07	0.08	0.33	0.01	0.01	0.01	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 8.9 N	123 13.4 W	8/ 2/98	1828 UTC	27 m	02	1227 - 1816 PST	1227 PST	1818 PST	162.4 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	15.09	33.190	24.558	5.77	100.5	2.0	0.27	0.1	0.00	0.24	0.08	94. A	2.2	2.4	2.3	0.04
18	15.10	33.196	24.561	5.76	100.3	2.0	0.27	0.0	0.00	0.25	0.08	36.	3.2	3.0	3.1	0.03
28	15.11	33.198	24.561	5.76	100.4	1.9	0.27	0.0	0.00	0.28	0.09					
37	15.12	33.205	24.564	5.77	100.6	1.9	0.27	0.0	0.00	0.28	0.10	12.	2.3	2.6	2.4	0.03
45	15.14	33.209	24.563	5.75	100.3	1.9	0.27	0.0	0.00	0.29	0.10					
56	15.16	33.221	24.569	5.75	100.3	1.9	0.27	0.0	0.00	0.42	0.06	4.1	1.2	1.0	1.1	0.02
63	14.98	33.330	24.692	5.64	98.1	2.3	0.31	0.5	0.05	0.30	0.21					
72	14.69	33.443	24.842	5.47	94.6	3.0	0.43	1.8	0.10	0.31	0.51	1.7	0.83	0.85	0.84	0.03
82	13.54	33.407	25.054	5.21	88.0	5.1	0.63	5.0	0.04	0.19	0.37					
94	12.68	33.402	25.221	5.03	83.5	7.0	0.78	7.3	0.03	0.16	0.29					
102	12.17	33.410	25.325	4.94	81.1	7.7	0.86	8.4	0.03	0.16	0.29	0.30	0.04	0.03	0.04	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 13.7 N	119 24.7 W	5/ 2/98	1905 UTC	3 m	04	1210 - 1759 PST	1212 PST	1759 PST	40.7 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	16.72	33.740	24.614	5.41	97.7	3.2	0.49	0.8	0.51	0.58	0.28	60. A	13.6	13.4	13.5	0.13
2	16.73	33.734	24.607	5.41	97.7	3.2	0.49	0.8	0.51	0.59	0.27	36.	9.6	10.1	9.9	0.08
3	16.71	33.734	24.612	5.42	97.8	3.2	0.49	0.8	0.51	0.60	0.27	22.	3.6	3.9	3.8	0.07
6	16.71	33.734	24.612	5.42	97.8	3.2	0.50	0.8	0.51	0.60	0.28	4.6	1.1	1.1	1.1	0.06
7	16.71	33.735	24.613	5.41	97.6	3.2	0.50	0.8	0.51	0.61	0.28	2.8	0.27	0.29	0.28	0.05
11	16.71	33.735	24.613	5.41	97.6	3.1	0.49	0.8	0.51	0.56	0.28	0.36	0.01	0.00	0.01	0.05

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 35.7 N	122 49.0 W	2/ 2/98	1846 UTC	34 m	01	1225 - 1805 PST	1225 PST	1807 PST	115.7 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	16.03	33.459	24.557	5.69	101.2	2.0	0.27	0.1	0.00	0.13	0.02	96. A	1.5	1.5	1.5	0.04
12	16.03	33.459	24.557	5.65	100.4	2.0	0.26	0.1	0.00	0.13	0.02					
22	16.03	33.458	24.557	5.71	101.5	2.0	0.26	0.1	0.00	0.12	0.03	37.	1.3	1.3	1.3	0.07
36	15.82	33.448	24.597	5.72	101.2	1.9	0.27	0.1	0.00	0.16	0.04					
45	15.55	33.436	24.648	5.76	101.4	1.9	0.28	0.1	0.00	0.25	0.09	13.	1.4	1.4	1.4	0.08
58	15.14	33.432	24.735	5.74	100.2	2.1	0.30	0.1	0.01	0.53	0.31					
69	14.52	33.434	24.871	5.51	95.0	3.1	0.41	1.4	0.10	0.50 B	0.40 B	4.4	1.4	1.2	1.3	0.04
81	13.65	33.418	25.040	5.27	89.2	5.0	0.60	4.5	0.05	0.30 B	0.27 B					
92	12.48	33.419	25.273	4.84	80.0	8.4	0.90	9.1	0.03	0.20 B	0.20 B	1.6	0.20	0.22	0.21	0.02
103	11.94	33.476	25.420	4.74	77.5	9.7	0.97	10.3	0.03	0.11 B	0.11 B					
118	10.75	33.544	25.689	4.21	67.1	14.9	1.32	16.0	0.02	0.08 B	0.09 B					
130	10.31	33.600	25.809	3.97	62.7	17.3	1.44	18.1	0.02	0.05	0.05	0.28	0.00	0.00	0.00	0.02

A) INCUBATION LIGHT INTENSITIES WERE 95, 36, 12, 4.4, 1.6, 0.31 PERCENT RESPECTIVELY.

B) CHLOROPHYLL AND PHAEOPIGMENT SAMPLES FROM 69 TO 118 METERS WERE NUMBERED AND ANALYZED IN REVERSE ORDER.
THE VALUES LISTED HERE ARE SUPPORTED BY ESTIMATED VALUES FROM THE CTD FLUOROMETER PROFILE.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 19.6 N	119 39.7 W	30/ 1/98	1914 UTC	27 m	02	1211 - 1755 PST	1212 PST	1755 PST	376.3 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
2	16.16	33.699	24.712	5.58	99.6	2.5	0.37	0.6	0.15	0.68	0.24	89. A	12.8	13.4	13.1	0.05
18	16.07	33.699	24.733	5.58	99.4	2.4	0.37	0.6	0.15	0.76	0.30	36.	11.4	11.4	11.4	0.05
29	16.04	33.698	24.739	5.57	99.2	2.4	0.37	0.6	0.15	0.75	0.32					
36	15.59	33.663	24.813	5.36	94.6	3.2	0.45	1.7	0.23	0.33	0.23	13.	2.5	2.7	2.6	0.03
45	14.88	33.607	24.926	5.00	86.9	5.2	0.63	4.4	0.20	0.17	0.15					
55	14.64	33.619	24.987	4.93	85.3	5.8	0.68	5.0	0.19	0.16	0.14	4.4	0.38	0.35	0.36	0.05

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 39.8 N	121 1.9 W	31/ 1/98	1838 UTC	49 m	01	1218 - 1806 PST	1217 PST	1806 PST	194.7 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	16.07	33.308	24.432	5.66	100.6	2.0	0.24	0.1	0.00	0.13	0.05	94. A	1.2	1.2	1.2	0.05
18	16.06	33.463	24.553	5.69	101.2	2.0	0.24	0.1	0.00	0.15	0.04					
33	16.06	33.472	24.561	5.67	100.9	1.9	0.24	0.1	0.00	0.17	0.05	36.	1.8	1.8	1.8	0.06
44	16.05	33.472	24.564	5.67	100.8	1.9	0.24	0.1	0.00	0.16	0.04					
55	16.03	33.465	24.563	5.68	101.0	1.9	0.24	0.1	0.00	0.18	0.05					
66	15.89	33.468	24.597	5.69	100.9	1.9	0.24	0.1	0.00	0.22	0.06	13.	1.8	1.7	1.7	0.04
77	15.82	33.467	24.613	5.72	101.2	1.9	0.25	0.1	0.00	0.31	0.11					
89	15.53	33.476	24.685	5.66	99.6	1.9	0.28	0.1	0.05	0.32	0.18					
100	15.50	33.480	24.695	5.66	99.5	2.0	0.28	0.2	0.05	0.31	0.18	4.4	1.2	1.7	1.5	0.04
110	14.15	33.394	24.919	5.49	93.9	3.4	0.46	2.4	0.07	0.21	0.19					
122	12.59	33.391	25.231	5.10	84.5	6.7	0.75	6.9	0.02	0.14	0.14					
132	12.25	33.400	25.303	5.00	82.2	7.5	0.82	8.2	0.02	0.11	0.14	1.6	0.22	0.23	0.22	0.01
145	10.93	33.488	25.614	4.58	73.2	11.8	1.11	12.8	0.01	0.06	0.08					
157	10.24	33.589	25.813	4.06	64.0	15.8	1.35	16.4	0.01	0.04	0.07					
169	9.67	33.683	25.982	3.79	59.0	21.2	1.59	20.7	0.01	0.01	0.04					
185	9.34	33.775	26.108	3.48	53.8	24.3	1.72	22.5	0.01	0.00	0.03	0.30	0.00	0.01	0.01	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 19.5 N	123 44.6 W	1/ 2/98	1856 UTC	50 m	01	1229 - 1817 PST	1229 PST	1816 PST	139.5 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	16.43	33.474	24.477	5.65	101.2	2.1	0.23	0.1	0.00	0.11	0.03	94. A	1.4	1.6	1.5	0.05
18	16.42	33.474	24.480	5.64	101.0	2.1	0.23	0.1	0.00	0.12	0.02					
32	16.39	33.475	24.488	5.64	101.0	2.1	0.24	0.1	0.00	0.12	0.03	37.	1.4	1.4	1.4	0.05
44	16.31	33.462	24.497	5.65	101.0	2.1	0.23	0.1	0.00	0.13	0.03					
57	16.29	33.460	24.500	5.66	101.1	2.1	0.23	0.1	0.00	0.13	0.04					
68	16.22	33.445	24.505	5.66	101.0	2.1	0.23	0.1	0.00	0.15	0.04	12.	0.88	0.92	0.90	0.04
79	16.05	33.431	24.533	5.67	100.8	2.0	0.23	0.1	0.00	0.19	0.06					
90	16.03	33.435	24.541	5.68	100.9	2.0	0.23	0.1	0.00	0.20	0.08					
102	16.02	33.470	24.571	5.66	100.6	2.0	0.23	0.1	0.00	0.25	0.13	4.4	0.74	0.82	0.78	0.03
112	15.90	33.488	24.612	5.63	99.8	2.0	0.24	0.1	0.04	0.30	0.21					
122	15.38	33.495	24.734	5.56	97.6	2.4	0.30	0.6	0.13	0.26	0.20					
136	12.39	33.400	25.276	5.23	86.2	5.6	0.67	5.6	0.02	0.14	0.15	1.5	0.24	0.22	0.23	0.01
148	10.92	33.466	25.599	4.68	74.8	11.5	1.08	12.5	0.02	0.05	0.08					
160	10.31	33.539	25.762	4.34	68.5	15.6	1.31	16.1	0.02	0.04	0.05					
174	9.71	33.618	25.925	4.01	62.5	19.2	1.49	19.2	0.02	0.02	0.03					
187	9.30	33.728	26.078	3.58	55.3	23.7	1.70	22.5	0.02	0.00	0.03	0.32	0.00	-0.01	0.00	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 28.5 N	117 45.5 W	29/ 1/98	1817 UTC	13 m	03	1204 - 1747 PST	1204 PST	1748 PST	335.0 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	17.54	33.940	24.573	5.45	100.1	2.7	0.38	0.4	0.22	1.55	0.63	79. A	18.0		18.0	0.12
9	17.55	33.943	24.573	5.44	99.9	2.7	0.37	0.4	0.22	1.54	0.63	35.	19.8	19.5	19.6	0.17
18	17.57	33.957	24.580	5.44	100.0	2.8	0.37	0.3	0.22	1.23	0.51	12.	7.1	7.1	7.1	0.12
27	17.57	33.965	24.586	5.40	99.2	2.8	0.36	0.4	0.25	0.92	0.42	4.1	1.5	1.3	1.4	0.08
35	17.36	33.931	24.611	5.39	98.6	2.8	0.36	0.3	0.18	0.43	0.32	1.6	0.29	0.33	0.31	0.04
42	17.22	33.906	24.625	5.13	93.6	3.8	0.48	1.5	0.33	0.28	0.22					
49	17.24	33.919	24.631	5.06	92.4	4.1	0.50	1.8	0.43	0.27	0.24	0.31	0.01	0.00	0.00	0.05

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 39.0 N	119 28.9 W	28/ 1/98	1833 UTC	37 m	02	1213 - 1750 PST	1211 PST	1751 PST	181.7 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	16.15	33.515	24.572	5.64	100.5	1.7	0.26	0.0	0.00	0.22	0.08	96. A	1.1	1.5	1.3	0.04
13	16.14	33.514	24.574	5.64	100.5	1.7	0.26	0.0	0.00	0.24	0.08					
25	16.14	33.514	24.575	5.64	100.5	1.7	0.26	0.0	0.00	0.23	0.08	35.	3.1	3.0	3.0	0.03
38	16.14	33.514	24.575	5.63	100.3	1.7	0.26	0.0	0.00	0.23	0.09					
51	16.14	33.514	24.576	5.64	100.5	1.7	0.26	0.0	0.00	0.26	0.10	12.	2.0	2.3	2.2	0.03
62	16.14	33.514	24.576	5.62	100.1	1.7	0.26	0.0	0.00	0.24	0.08					
76	16.14	33.514	24.577	5.64	100.5	1.7	0.26	0.0	0.00	0.23	0.09	4.3	1.1	1.0	1.0	0.03
82	16.14	33.514	24.577	5.63	100.3	1.7	0.26	0.0	0.00	0.24	0.09					
90	15.96	33.508	24.613	5.59	99.2	1.8	0.29	0.2	0.04	0.22	0.10					
99	15.53	33.474	24.683	5.57	98.0	2.2	0.33	0.6	0.08	0.19	0.14	1.6	0.29	0.31	0.30	0.02
109	13.61	33.370	25.012	5.39	91.2	4.0	0.53	3.2	0.03	0.16	0.17					
120	12.88	33.378	25.164	5.19	86.5	5.8	0.68	5.5	0.02	0.12	0.15					
129	12.37	33.424	25.299	4.92	81.1	7.5	0.83	8.0	0.01	0.08	0.10					
138	11.83	33.502	25.461	4.51	73.5	10.9	1.06	11.1	0.01	0.05	0.08	0.33	0.03	0.01	0.02	0.01

A) INCUBATION LIGHT INTENSITIES WERE 95, 36, 12, 4.4, 1.6, 0.31 PERCENT RESPECTIVELY.

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 24.9 N	121 59.0 W	27/ 1/98	1916 UTC	34 m	02	1221 - 1758 PST	1221 PST	1759 PST	205.8 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	15.66	33.465	24.644	5.97 U	105.4 U	2.2	0.28	0.0	0.00	0.17	0.04	91. A	2.4	2.5	2.4	0.08
12	15.60	33.464	24.657	5.77	101.7	2.2	0.28	0.0	0.00	0.19	0.04					
23	15.53	33.459	24.669	5.79	101.9	2.1	0.28	0.0	0.00	0.20	0.06	35.	2.7	2.7	2.7	0.11
35	15.49	33.458	24.678	5.77	101.5	2.1	0.28	0.0	0.00	0.26	0.08					
48	15.42	33.460	24.695	5.78	101.5	2.0	0.28	0.0	0.00	0.35	0.11	11.	2.6	2.9	2.8	0.06
58	15.45	33.478	24.703	5.72	100.5	2.1	0.30	0.1	0.02	0.50	0.25					
68	15.22	33.474	24.751	5.64	98.6	2.4	0.33	0.4	0.12	0.44	0.26	4.6	1.8	1.7	1.8	0.04
79	14.58	33.409	24.839	5.55	95.8	3.0	0.41	1.4	0.13	0.36	0.24					
92	13.72	33.394	25.007	5.29	89.7	4.8	0.58	4.0	0.03	0.18	0.16	1.6	0.33	0.42	0.37	0.02
104	11.76	33.442	25.427	4.78	77.8	9.5	0.99	10.2	0.02	0.08	0.09					
115	11.18	33.506	25.583	4.57	73.5	11.7	1.10	12.5	0.01	0.06	0.07					
128	10.54	33.606	25.774	4.14	65.7	16.2	1.36	16.6	0.01	0.02	0.04	0.31	0.00	0.00	0.00	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 93 26.8

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 57.2 N	117 18.5 W	23/ 1/98	1920 UTC	27 m	02	1201 - 1742 PST	1201 PST	1742 PST	378.9 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	17.95	34.049	24.557	5.30	98.2	2.1	0.40	0.5	0.32	0.80	0.26	94. A	12.1	12.4	12.3	0.05
11	17.85	34.047	24.580	5.30	98.0	2.1	0.40	0.5	0.32	0.68	0.29					
18	17.85	34.048	24.581	5.29	97.8	2.1	0.40	0.5	0.32	0.70	0.31	36.	9.3	9.3	9.3	0.06
28	17.84	34.049	24.585	5.28	97.6	2.1	0.41	0.4	0.33	0.70	0.31					
37	17.83	34.047	24.586	5.28	97.6	2.1	0.41	0.5	0.34	0.71	0.35	12.	4.6	5.0	4.8	0.05
46	17.83	34.047	24.587	5.27	97.4	2.1	0.41	0.6	0.33	0.63	0.31					
56	16.94	33.897	24.685	4.65	84.4	4.5	0.66	4.2	0.20	0.19	0.16	4.1	0.36	0.36	0.36	0.02 B

B) DARK VALUE ESTIMATED, MEASURED VALUE LOST.

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 10.7 N	118 53.8 W	24/ 1/98	1751 UTC	18 m	02	1208 - 1747 PST	1208 PST	1749 PST	115.5 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	16.30	33.598	24.602	5.62	100.5	1.8	0.29	0.1	0.00	0.39	0.14	84. A	3.3	3.1	3.2	0.05
13	16.26	33.598	24.612			1.7	0.29	0.1	0.00	0.37	0.15	33.	4.0	4.0	4.0	0.10
25	16.26	33.598	24.612	5.62	100.4	1.7	0.29	0.1	0.00	0.37	0.15	12.	2.3	2.5	2.4	0.05
36	16.26	33.598	24.612	5.63	100.6	1.7	0.30	0.1	0.00	0.37	0.16	4.6	0.85	0.88	0.86	0.06
42	16.26	33.598	24.613	5.62	100.4	1.7	0.30	0.1	0.00	0.37	0.16					
48	16.24	33.620	24.634	5.60	100.1	1.8	0.30	0.2	0.01	0.50	0.22	1.7	0.50	0.46	0.48	0.03
58	16.14	33.647	24.678	5.61	100.0	1.9	0.32	0.2	0.01	0.63	0.26					
68	15.94	33.592	24.682	5.62	99.8	1.9	0.32	0.2	0.02	0.43	0.23	0.30	0.04	0.02	0.03	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 11.1 N	120 56.9 W	25/ 1/98	1834 UTC	30 m	01	1215 - 1803 PST	1216 PST	1805 PST	76.3 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
2	16.69	33.567	24.488	5.59	100.7	0.6	0.23	0.1	0.00	0.19	0.05	90. A	1.4	1.4	1.4	0.02
10	16.68	33.569	24.492	5.61	101.1	0.6	0.24	0.0	0.00	0.17	0.05					
20	16.68	33.568	24.492	5.60	100.9	0.6	0.24	0.0	0.00	0.02 U	0.21 U	36.	1.5	1.5	1.5	0.03
30	16.68	33.565	24.490	5.59	100.7	0.6	0.24	0.0	0.00	0.19	0.03					
41	16.68	33.58	24.502	5.60	100.9	0.6	0.24	0.0	0.00	0.18	0.04	12.	0.89	0.84	0.86	0.03
51	16.68	33.565	24.491	5.60	100.9	0.6	0.23	0.0	0.00	0.18	0.04					
60	16.65	33.560	24.494	5.60	100.8	0.6	0.24	0.0	0.00	0.19	0.07	4.6	0.40	0.59	0.50	0.02
71	16.52	33.540	24.509	5.60	100.5	0.6	0.24	0.0	0.00	0.22	0.07					
81	16.43	33.517	24.513	5.62	100.7	0.6	0.24	0.0	0.00	0.20	0.06	1.6	0.15	0.14	0.15	0.01
92	16.01	33.463	24.567	5.63	100.0	0.8	0.26	0.0	0.03	0.28	0.13					
101	15.20	33.439	24.729	5.54	96.8	2.7	0.36	0.8	0.12	0.28	0.21					
113	14.22	33.440	24.940	5.45	93.4	3.5	0.45	2.0	0.06	0.20	0.25	0.31	0.03	0.02	0.03	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 9802 — STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
29 50.9 N	123 35.9 W	26/ 1/98	1844 UTC	44 m	01	1227 - 1811 PST	1227 PST	1812 PST	91.7 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	17.86	33.720	24.327	5.48	101.1	1.6	0.22	0.1	0.00	0.09	0.02	90. A	1.3	0.84	1.1	0.05 B
17	17.78	33.717	24.345	5.49	101.1	1.6	0.23	0.1	0.00	0.10	0.02					
29	17.78	33.718	24.346	5.49	101.1	1.6	0.23	0.1	0.00	0.08	0.03	36.	0.98	0.98	0.98	0.05
44	17.66	33.704	24.365	5.49	100.9	1.6	0.23	0.2	0.00	0.11	0.03					
61	17.65	33.688	24.356	5.50	101.0	1.6	0.23	0.2	0.00	0.12	0.04	12.	0.65	0.66	0.65	0.05
69	17.66	33.695	24.359	5.47	100.5	1.6	0.23	0.2	0.00	0.13	0.04					
78	17.66	33.694	24.359	5.49	100.9	1.7	0.23	0.2	0.00	0.16	0.05					
89	17.63	33.684	24.359	5.50	101.0	1.8	0.23	0.2	0.00	0.18	0.05	4.5	0.44	0.42	0.43	0.01
100	17.59	33.681	24.367	5.48	100.5	1.8	0.23	0.2	0.00	0.18	0.07					
110	16.74	33.522	24.446	5.57	100.4	1.8	0.23	0.2	0.01	0.26	0.17					
118	15.97	33.476	24.587	5.60	99.4	1.9	0.25	0.2	0.07	0.25	0.19	1.6	0.38	0.34	0.36	0.01
130	14.52	33.429	24.869	5.58	96.2	2.7	0.35	1.2	0.10	0.20	0.19					
141	13.82	33.412	25.002	5.42	92.1	3.9	0.49	3.0	0.02	0.15	0.17					
153	12.86	33.399	25.185	5.20	86.6	5.4	0.66	5.6	0.01	0.11	0.14					
165	11.66	33.468	25.467	4.82	78.3	9.1	0.94	10.1	0.00	0.05	0.07	0.32	0.02	0.00	0.01	0.01

A) INCUBATION LIGHT INTENSITIES WERE 95, 36, 12, 4.4, 1.6, 0.31 PERCENT RESPECTIVELY.

B) DARK VALUE ESTIMATED, MEASURED VALUE LOST.

CalCOFI Cruise 9802

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 05.3	120 46.0	02/10	1737	1743	120	49	17	17
77	51	35 01.9	120 53.4	02/10	1521	1539	406	176	305	10
77	55	34 54.0	121 12.5	02/10	0912	0934	478	213	4	4
77	60	34 43.8	121 33.5	02/10	0532	0554	468	213	24	24
77	70	34 23.6	122 15.4	02/09	2321	2343	468	214	47	47
77	80	34 02.5	122 54.2	02/09	1742	1804	464	209	19	19
77	90	33 43.6	123 38.9	02/09	0912	0934	466	214	13	13
77	100	33 22.9	124 20.2	02/09	0130	0152	496	210	8	8
80	55	34 18.5	120 49.4	02/07	0246	0308	475	219	29	19
80	70	33 48.0	121 51.5	02/07	1928	1950	503	211	30	30
80	80	33 29.0	122 32.0	02/08	0157	0219	534	201	24	24
80	90	33 08.9	123 13.6	02/08	0902	0924	516	216	16	16
80	100	32 48.4	123 56.9	02/08	1751	1813	504	213	8	8
82	47	34 17.7	120 00.8	02/05	1631	1652	434	213	30	30
83	40.6	34 13.8	119 24.3	02/05	1005	1008	62	21	48	48
83	42	34 11.6	119 31.5	02/05	0712	0722	216	89	14	14
83	51	33 53.0	120 09.4	02/05	0053	0103	234	99	30	30
83	55	33 45.2	120 24.6	02/04	2113	2135	482	211	25	25
83	60	33 34.0	120 45.3	02/04	1614	1636	484	211	19	19
83	70	33 13.6	121 27.5	02/04	0803	0825	505	211	16	16
83	90	32 34.9	122 48.3	02/02	0902	0924	483	207	12	12
83	100	32 14.0	123 29.4	02/02	0058	0120	503	194	28	28
83	110	31 54.1	124 09.4	02/01	1857	1918	512	198	20	20
87	33	33 52.6	118 29.9	01/29	1959	2004	107	48	47	47
87	35	33 49.3	118 37.8	01/29	2214	2235	447	211	38	38
87	40	33 39.6	118 59.4	01/30	0246	0308	460	215	35	35
87	45	33 29.7	119 20.0	01/30	0707	0729	448	216	20	20
87	50	33 19.6	119 40.4	01/30	1030	1038	183	72	38	38
87	55	33 09.8	120 00.3	01/30	1921	1942	455	209	26	26
87	60	33 00.9	120 21.7	01/31	0022	0043	482	201	27	27
87	70	32 39.2	121 01.9	01/31	0906	0928	446	211	20	20
87	80	32 19.7	121 43.9	01/31	1735	1756	476	212	27	27
87	90	31 59.6	122 22.7	01/31	2323	2345	476	211	27	27
87	100	31 39.0	123 04.2	02/01	0541	0603	472	212	19	19
87	110	31 20.0	123 43.1	02/01	1238	1259	460	212	9	9
90	28	33 28.8	117 45.7	01/29	0910	0915	102	47	49	49
90	30	33 24.6	117 53.7	01/29	0513	0534	433	209	35	35
90	35	33 14.6	118 14.9	01/29	0123	0145	435	216	60	60
90	37	33 11.3	118 22.9	01/28	2300	2321	447	213	60	60
90	45	32 54.2	118 55.6	01/28	1753	1814	449	212	76	29
90	53	32 39.0	119 29.3	01/28	1223	1245	442	209	16	16
90	60	32 25.0	119 58.5	01/28	0648	0709	457	215	13	13
90	70	32 04.8	120 38.7	01/28	0058	0120	440	215	30	30
90	80	31 45.7	121 20.1	01/27	1854	1915	459	212	26	26
90	90	31 24.7	121 58.4	01/27	1258	1320	456	209	37	37
90	100	31 04.7	122 40.6	01/27	0617	0639	483	211	29	29
90	110	30 44.7	123 19.8	01/27	0034	0056	464	210	26	26
90	120	30 25.9	124 00.4	01/26	1851	1912	456	214	15	15
93	26.8	32 57.3	117 18.9	01/23	1252	1313	426	212	56	56
93	28	32 54.2	117 23.3	01/23	1613	1635	432	211	37	37
93	30	32 50.8	117 32.5	01/23	1903	1924	433	210	55	55
93	35	32 40.7	117 53.1	01/23	2247	2309	445	212	65	65
93	40	32 30.9	118 12.9	01/24	0256	0318	437	213	34	34
93	45	32 20.7	118 33.7	01/24	0653	0715	452	214	42	42
93	50	32 10.8	118 54.5	01/24	1208	1230	440	213	23	23
93	55	32 01.3	119 13.7	01/24	1654	1716	426	214	12	12
93	60	31 49.9	119 35.2	01/24	2106	2127	466	212	15	15
93	70	31 30.7	120 16.0	01/25	0302	0324	442	212	18	18
93	80	31 10.8	120 55.8	01/25	0903	0924	448	211	16	16
93	90	30 51.4	121 35.3	01/25	1720	1741	438	215	23	23
93	100	30 30.7	122 16.1	01/25	2318	2339	437	212	23	23
93	110	30 11.1	122 56.1	01/26	0458	0519	439	213	18	18
93	120	29 50.6	123 35.7	01/26	0952	1014	445	209	11	11

PERSONNEL

CalCOFI Cruise 9803

SHIP'S CAPTAIN

Louis H. Zimm, RV *Robert Gordon Sproul*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

Hayward, Thomas L. (Chief Scientist)	Research Oceanographer, SIO
Baiz, Shad L.	Resident Technician, SIO
Cummings, Sherry L.	Staff Research Associate, SIO
Dunn, Janice A.	Volunteer
Griffith, David A.	Fishery Biologist, NMFS
Gruber, Dennis W.	Marine Technician, SIO
Hays, Amy E.	Fishery Biologist, NMFS
Hyrenbach, K. David	Graduate Student, SIO
Paik, Terry	Volunteer
Rusk, Steven W.	Marine Technician, SIO
Swensen, Daryl L.	Biological Technician, NMFS
Toperoff, Amanda K.	Volunteer
Wilkinson, James R.	Programmer/Analyst, SIO

FIGURES

Cruise 9803

1. CalCOFI Cruise 9803, 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.

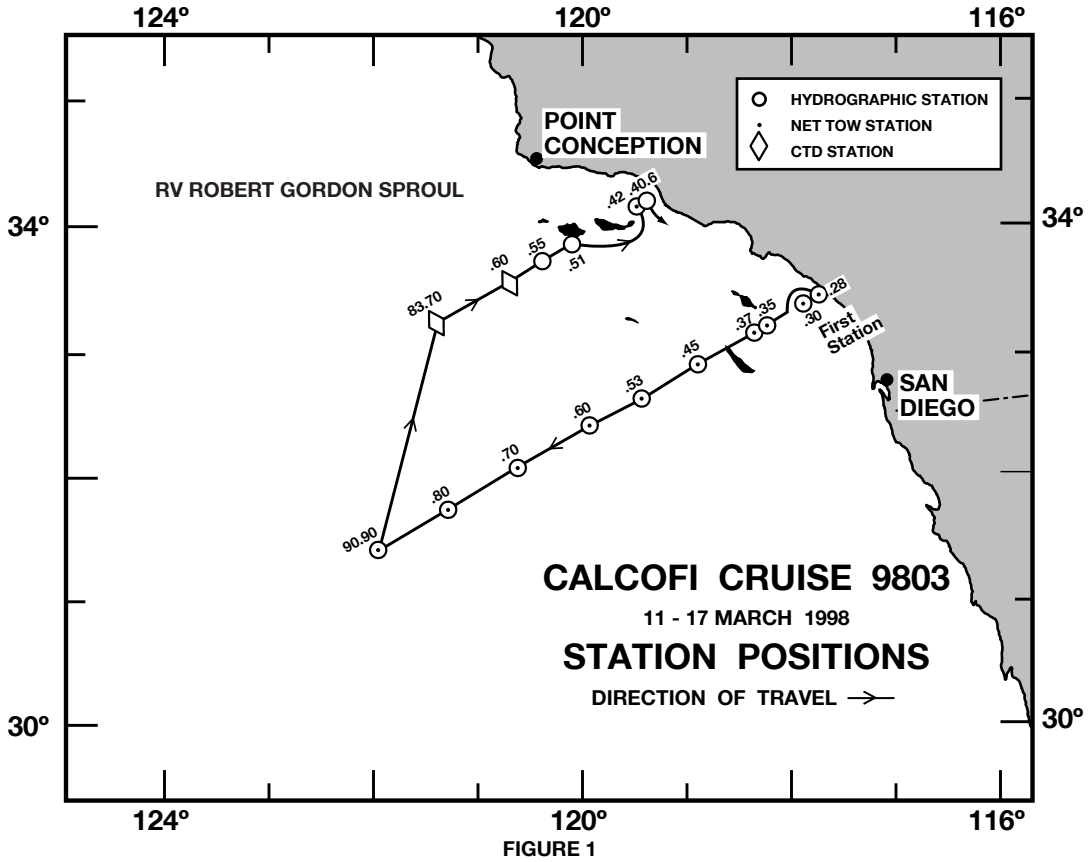


FIGURE 1

CALCOFI CRUISE 9803

11 - 13 MARCH 1998

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

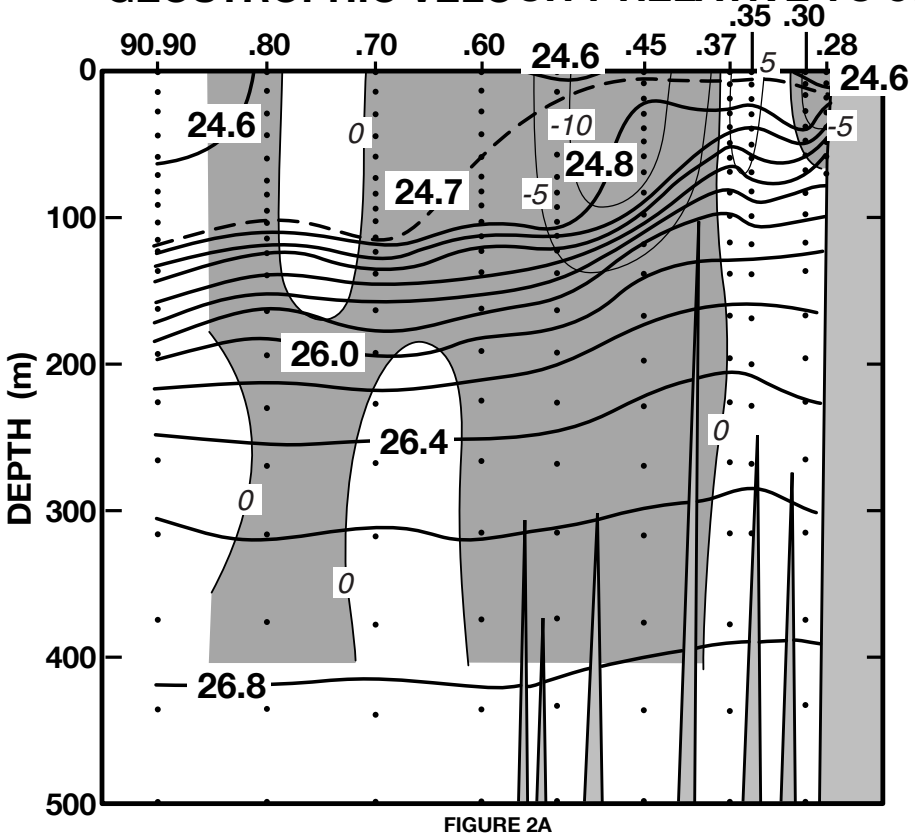


FIGURE 2A

CALCOFI CRUISE 9803

11 - 13 MARCH 1998

TEMPERATURE (ºC) ALONG CALCOFI LINE 90

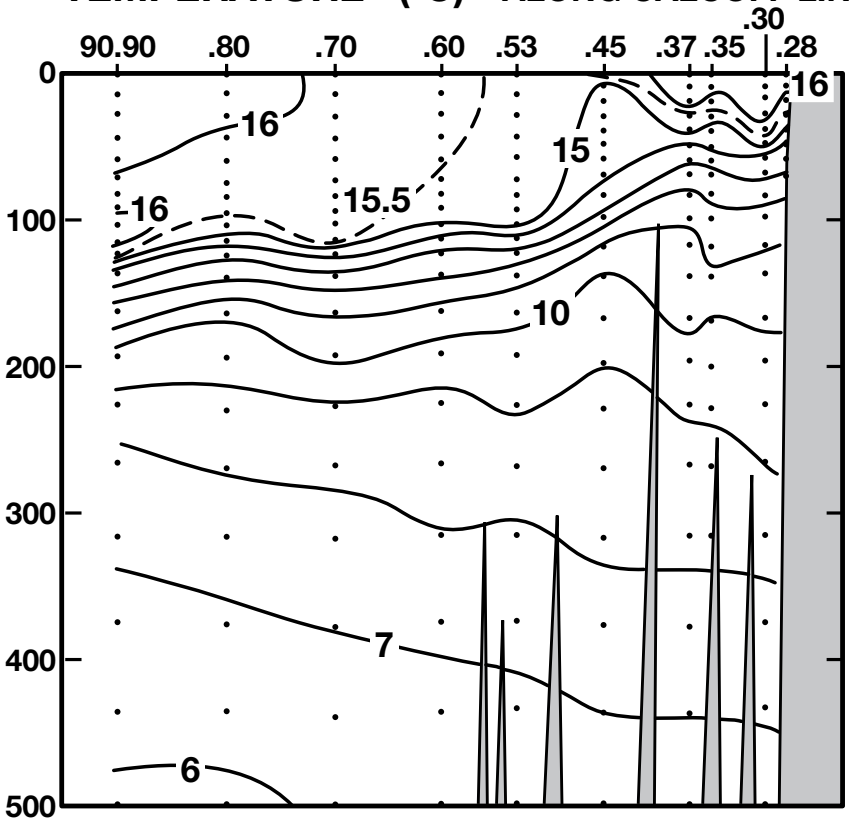


FIGURE 2B

SALINITY ALONG CALCOFI LINE 90

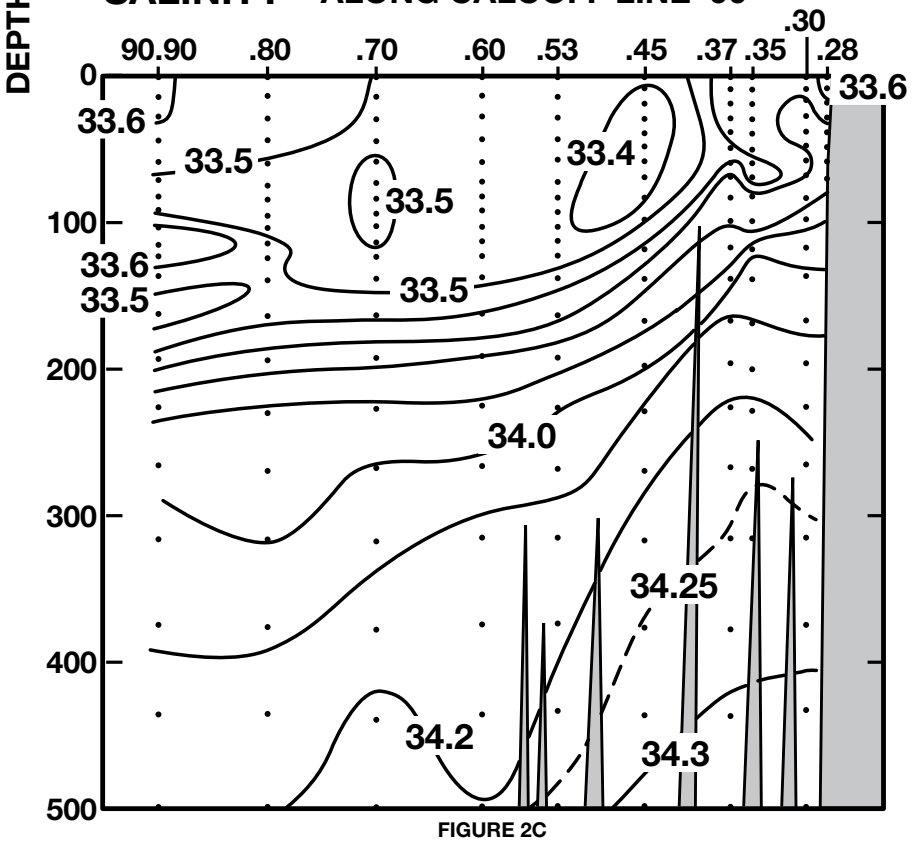


FIGURE 2C

CALCOFI CRUISE 9803

11 - 13 MARCH 1998

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

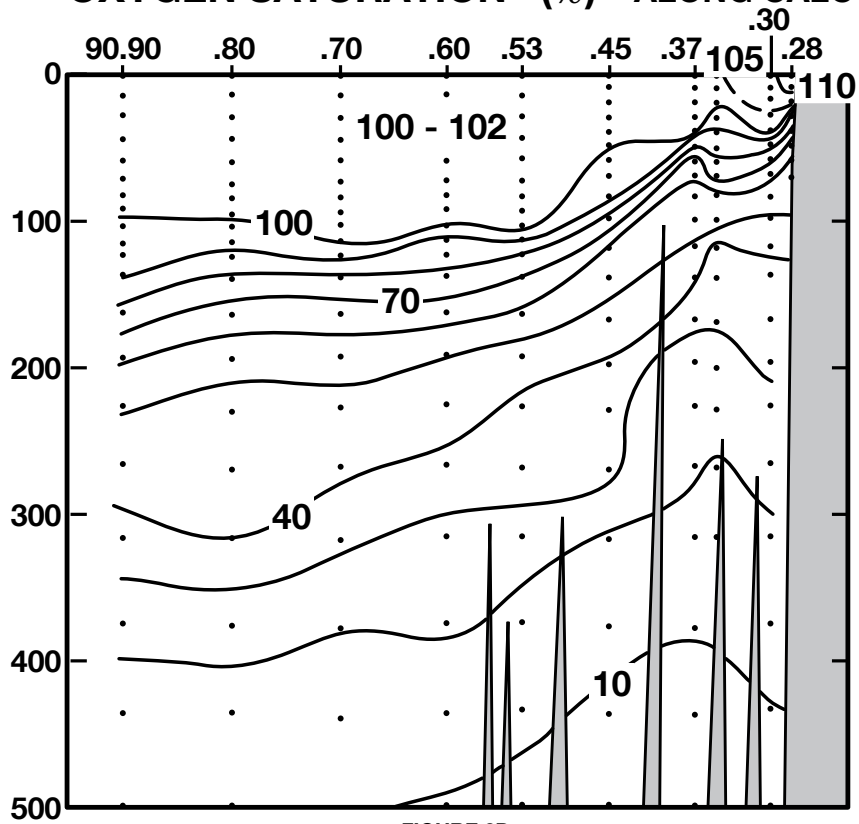


FIGURE 2D

OXYGEN (ml/l) ALONG CALCOFI LINE 90

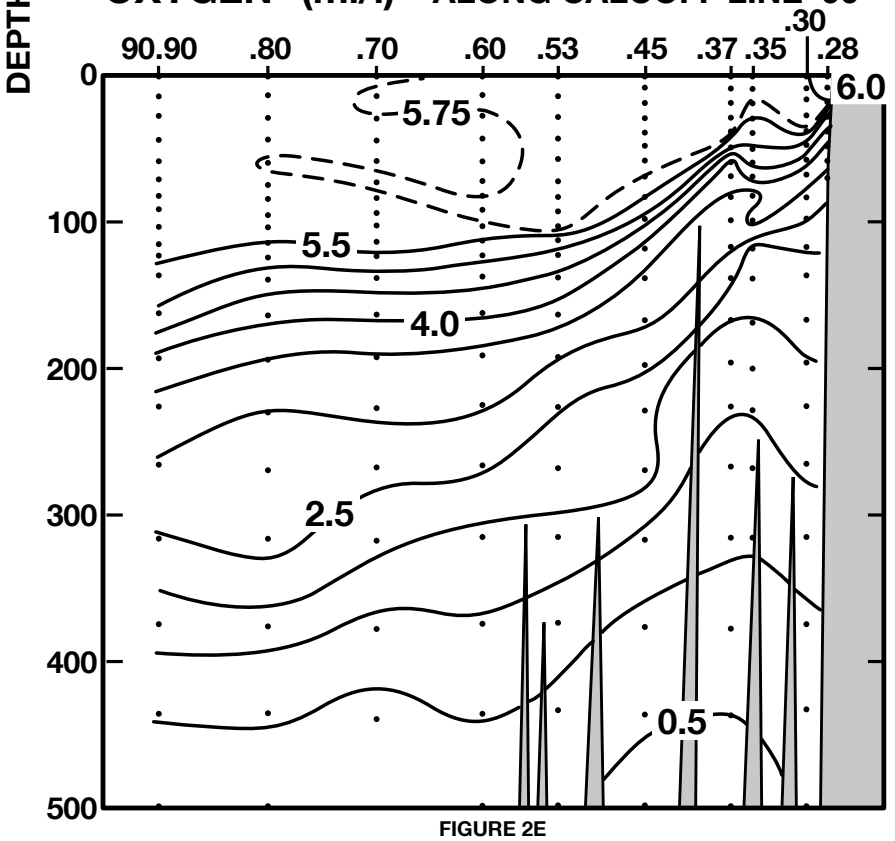


FIGURE 2E

CALCOFI CRUISE 9803

11 - 13 MARCH 1998

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

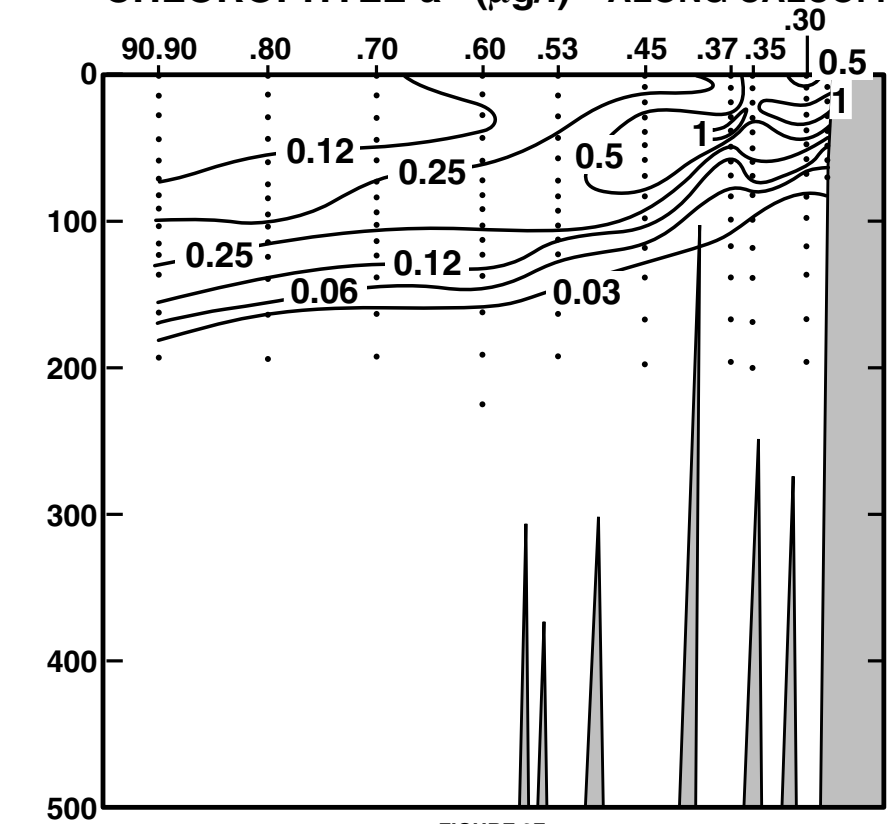


FIGURE 2F

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

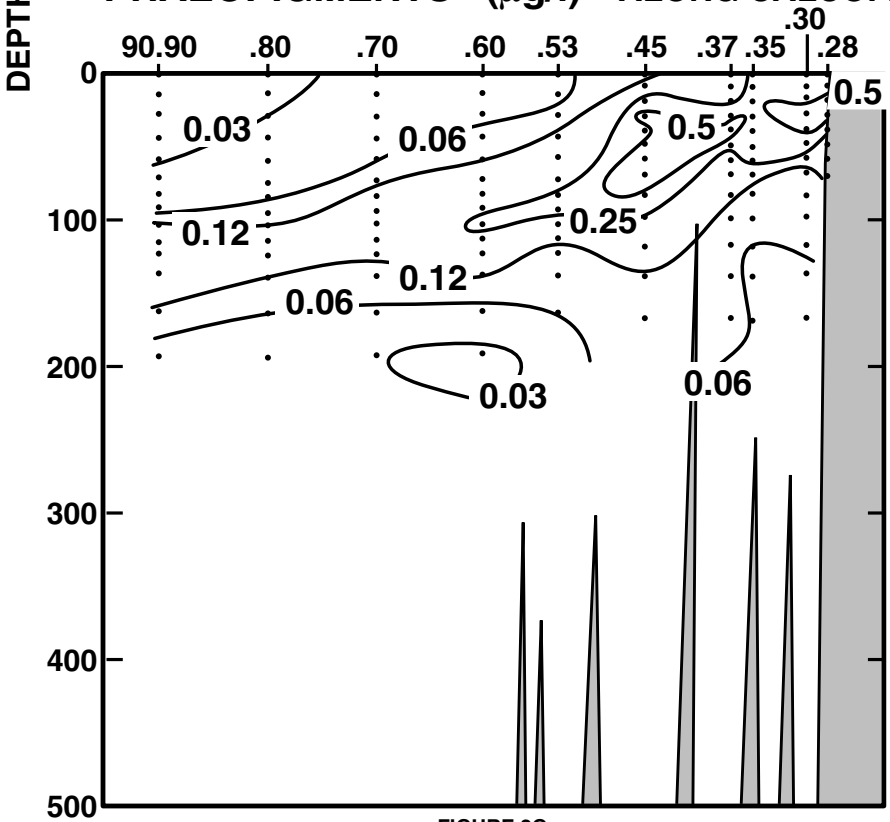


FIGURE 2G

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 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 24.7 W	15/03/98	1020 UTC	35 m	260 14 kn			1015.0 mb	16.2 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	16.02	16.02	33.468	24.566	336.1	0.000	6.22	110.6					1.04	0.48	0	
1	16.02	16.02	33.468	24.566	336.1	0.003	6.22	110.6					1.04	0.48	1	205
5	16.01	16.01	33.470	24.570	335.9	0.017	6.23	110.7					1.01	0.49	5	204
9	15.86	15.86	33.519	24.641	329.2	0.030	6.18	109.5					1.27	0.49	9	203
10 ISL	15.83	15.83	33.528	24.655	327.9	0.033	6.16	109.1					1.40	0.51	10	
19	15.44	15.44	33.590	24.790	315.4	0.062	5.70	100.2					2.15	0.71	19	202
20 ISL	15.36	15.36	33.596	24.812	313.3	0.065	5.59	98.1					2.03	0.70	20	
29	14.65	14.65	33.655	25.012	294.5	0.093	4.63	80.2					0.98	0.60	29	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 11.1 N	119 31.4 W	15/03/98	0714 UTC	130 m	200 04 kn			1015.0 mb	16.7 C	15.6 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	15.76	15.76	33.567	24.700	323.3	0.000	6.10	107.9					1.60	0.61	0	
1	15.76	15.76	33.567	24.700	323.3	0.003	6.10	107.9					1.60	0.61	1	211
10	15.76	15.76	33.580	24.711	322.6	0.032	5.98	105.8					1.57	0.56	10	210
19	15.69	15.69	33.602	24.744	319.8	0.061	5.86	103.6					1.51	0.56	19	209
20 ISL	15.67	15.67	33.603	24.749	319.3	0.064	5.82	102.8					1.44	0.56	20	
29	15.11	15.11	33.607	24.876	307.5	0.093	5.21	91.0					0.75	0.52	29	208
30 ISL	14.97	14.97	33.606	24.906	304.7	0.096	5.11	89.0					0.68	0.51	30	
39	13.58	13.57	33.636	25.221	274.8	0.122	4.17	70.6					0.24	0.37	39	207
48	12.59	12.58	33.748	25.505	248.0	0.145	3.40	56.4					0.11	0.17	48	206
50 ISL	12.57	12.56	33.750	25.511	247.5	0.150	3.39	56.2					0.11	0.17	50	
60	12.47	12.46	33.763	25.541	244.9	0.175	3.33	55.1					0.12	0.16	60	205
69	12.09	12.08	33.808	25.649	234.9	0.196	3.13	51.4					0.07	0.17	69	204
75 ISL	11.80	11.79	33.833	25.723	227.9	0.210	3.00	49.0					0.06	0.16	75	
80	11.60	11.59	33.848	25.772	223.4	0.222	2.92	47.5					0.05	0.14	80	203
92	11.45	11.44	33.851	25.802	220.8	0.248	2.90	47.0					0.04	0.11	92	202
100 ISL	11.22	11.21	33.878	25.865	215.0	0.266	2.78	44.8					0.03	0.12	101	
104	11.10	11.09	33.892	25.898	211.9	0.274	2.72	43.8					0.03	0.13	105	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 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 8.6 W	15/03/98	0021 UTC	103 m	320 24 kn	320 08 06	1	1015.9 mb	15.0 C	14.1 C		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	14.60	14.60	33.515	24.914	303.0	0.000	5.90	102.0					2.39	0.89	0	
1	14.60	14.60	33.515	24.914	303.0	0.003	5.90	102.0					2.39	0.89	1	210
10 ISL	14.45	14.45	33.522	24.952	299.7	0.030	5.80	99.9					2.69	0.92	10	
11	14.43	14.43	33.524	24.958	299.1	0.033	5.78	99.5					2.74	0.92	11	209
20 ISL	14.31	14.31	33.542	24.997	295.6	0.060	5.69	97.8					3.17	1.12	20	
21	14.29	14.29	33.544	25.003	295.1	0.063	5.67	97.4					3.19	1.14	21	208
30 ISL	13.83	13.83	33.572	25.120	284.2	0.089	5.28	89.8					2.46	0.98	30	
31	13.78	13.78	33.575	25.133	283.0	0.092	5.23	88.9					2.36	0.96	31	207
42	13.57	13.56	33.580	25.180	278.8	0.123	5.06	85.6					1.88	0.94	42	206
50 ISL	13.17	13.16	33.611	25.285	269.0	0.145	4.67	78.4					1.06	0.76	50	
53	12.95	12.94	33.624	25.339	264.0	0.153	4.50	75.2					0.76	0.69	53	205
59	12.37	12.36	33.637	25.462	252.3	0.168	4.66 U	76.9 U					0.47	0.66	59	204
70	11.77	11.76	33.724	25.643	235.3	0.195	3.56	58.1					0.23	0.43	70	203
75 ISL	11.51	11.50	33.736	25.701	230.0	0.207	3.47	56.3					0.18	0.36	75	
80	11.27	11.26	33.744	25.751	225.3	0.218	3.42	55.2					0.16	0.31	80	202
94	10.68	10.67	33.812	25.910	210.5	0.248	3.14	50.0					0.14	0.29	94	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 45.1 N	120 24.4 W	14/03/98	2028 UTC	996 m	320	28 kn	310 10 04	1	1018.1 mb	16.8 C	15.6 C		2/8	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	14.73	14.73	33.350	24.759	317.7	0.000	5.91	102.3					0.48	0.28	0	
2		14.73	14.73	33.350	24.759	317.8	0.006	5.91	102.3					0.48	0.28	2	220
8		14.74	14.74	33.351	24.758	318.1	0.025	5.95	103.0					0.49	0.35	8	219
10	ISL	14.74	14.74	33.351	24.758	318.1	0.032	5.94	102.8					0.49	0.34	10	
18		14.71	14.71	33.350	24.764	317.8	0.057	5.90	102.1					0.50	0.26	18	218
20	ISL	14.70	14.70	33.348	24.765	317.8	0.064	5.90	102.1					0.49	0.27	20	
29		14.66	14.66	33.348	24.773	317.2	0.092	5.88	101.6					0.47	0.33	29	217
30	ISL	14.65	14.65	33.346	24.774	317.2	0.095	5.87	101.4					0.49	0.33	30	
39		14.43	14.42	33.327	24.806	314.4	0.124							0.63	0.28	39	216
49		13.98	13.97	33.340	24.911	304.7	0.155	5.64	96.1					0.36	0.27	49	215
50	ISL	13.96	13.95	33.346	24.920	303.9	0.158	5.61	95.6					0.34	0.27	50	
59		13.61	13.60	33.402	25.035	293.1	0.185	5.24	88.7					0.20	0.23	59	214
69		12.56	12.55	33.449	25.280	269.9	0.213	4.69	77.7					0.10	0.12	69	213
75	ISL	12.05	12.04	33.478	25.400	258.6	0.229	4.52	74.0					0.07	0.11	75	
85		11.36	11.35	33.527	25.566	243.0	0.254	4.34	70.1					0.05	0.09	85	212
100		10.69	10.68	33.598	25.741	226.6	0.289	4.05	64.5					0.03	0.06	100	211
120		10.16	10.15	33.673	25.891	212.6	0.333	3.75	59.0							121	210
125	ISL	10.03	10.02	33.694	25.930	209.1	0.343	3.67	57.6							126	
137		9.74	9.72	33.747	26.020	200.7	0.368	3.50	54.6							138	209
150	ISL	9.41	9.39	33.803	26.118	191.6	0.393	3.34	51.8							151	
168		8.99	8.97	33.874	26.241	180.2	0.427	3.15	48.4							169	208
198		8.42	8.40	33.963	26.400	165.5	0.479	2.87	43.5					0.01	0.06	199	207
200	ISL	8.39	8.37	33.969	26.409	164.6	0.482	2.84	43.1							201	
227		8.06	8.04	34.045	26.519	154.6	0.525	2.44	36.7							228	206
250	ISL	7.99	7.96	34.079	26.556	151.5	0.560	2.22	33.4							251	
268		7.94	7.91	34.098	26.579	149.6	0.587	2.05	30.8							270	205
300	ISL	7.57	7.54	34.142	26.667	141.6	0.634	1.58	23.5							302	
318		7.34	7.31	34.164	26.717	137.0	0.659	1.32	19.6							320	204
371		6.93	6.90	34.195	26.799	129.8	0.730	0.99	14.5							373	203
400	ISL	6.81	6.77	34.203	26.822	128.0	0.767	0.87	12.7							403	
436		6.64	6.60	34.213	26.853	125.5	0.813	0.74	10.8							439	202
500	ISL	5.98	5.94	34.260	26.976	114.1	0.889	0.48	6.9							503	
519		5.79	5.75	34.275	27.012	110.8	0.911	0.40	5.7							523	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 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	14/03/98	1619 UTC	1363 m	340	25 kn	340 07 05	2	1019.2 mb	14.6 C	13.2 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	13.93	13.93	33.29		24.881	306.1	0.000									0	
2	A	13.93	13.93	33.29	D	24.881	306.2	0.006									2	2
10		13.94	13.94	33.29	D	24.879	306.5	0.031									10	2
20		13.94	13.94	33.29	D	24.880	306.8	0.061									20	2
30		13.94	13.94	33.29	D	24.880	307.1	0.092									30	2
40		13.93	13.92	33.29	D	24.882	307.1	0.123									40	2
50		13.93	13.92	33.29	D	24.882	307.4	0.153									50	2
75		13.72	13.71	33.29	D	24.926	303.9	0.230									75	2
100		12.13	12.12	33.58	D	25.465	253.1	0.299									100	2
125		10.67	10.66	33.65	D	25.786	222.9	0.359									126	2
150		9.61	9.59	33.73	D	26.028	200.2	0.412									151	2
175		8.90	8.88	33.86	D	26.245	179.9	0.459									176	2
200		8.68	8.66	33.93	D	26.334	171.8	0.503									201	2
225		8.28	8.26	33.96	D	26.419	164.1	0.545									226	2
250		7.87	7.85	34.00	D	26.511	155.6	0.585									251	2
275		7.69	7.66	34.06	D	26.585	149.0	0.623									277	2
300		7.71	7.68	34.09	D	26.606	147.4	0.660									302	2
350		7.02	6.99	34.12	D	26.728	136.3	0.731									352	2
400		6.78	6.74	34.18	D	26.808	129.3	0.798									403	2
450		6.04	6.00	34.14	D	26.873	123.1	0.861									453	2
500		5.77	5.73	34.18	D	26.939	117.3	0.921									503	2
518		5.65	5.61	34.21	D	26.977	113.8	0.942									522	2

A) THE DATA ON THIS STATION WERE TAKEN FROM AN UNCALIBRATED CTD PROFILE AND SHOULD BE USED WITH CAUTION.

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 15.5 N	121 29.2 W	14/03/98	0938 UTC	3821 m	330 21 kn			1020.0 mb	14.9 C	13.3 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	14.90	14.90	33.33		24.707	322.7	0.000									0	
2	A	14.90	14.90	33.33	D	24.707	322.7	0.006									2	2
10		14.90	14.90	33.33	D	24.707	322.9	0.032									10	2
20		14.90	14.90	33.33	D	24.708	323.2	0.065									20	2
30		14.91	14.91	33.33	D	24.706	323.7	0.097									30	2
40		14.91	14.90	33.33	D	24.706	323.9	0.129									40	2
50		14.91	14.90	33.33	D	24.707	324.2	0.162									50	2
75		14.82	14.81	33.37	D	24.758	320.1	0.242									75	2
100		13.04	13.03	33.47	D	25.203	278.2	0.317									100	2
125		11.90	11.88	33.54	D	25.478	252.5	0.383									126	2
150		10.53	10.51	33.65	D	25.811	221.1	0.443									151	2
175		9.47	9.45	33.77	D	26.083	195.5	0.495									176	2
200		8.94	8.92	33.85	D	26.231	181.7	0.542									201	2
225		8.51	8.49	33.92	D	26.353	170.5	0.586									226	2
250		8.01	7.98	33.96	D	26.460	160.6	0.627									251	2
275		7.67	7.64	33.97	D	26.517	155.4	0.667									277	2
300		7.28	7.25	33.98	D	26.581	149.5	0.705									302	2
350		6.68	6.65	34.00	D	26.679	140.6	0.777									352	2
400		6.26	6.22	34.03	D	26.758	133.5	0.846									402	2
450		5.82	5.78	34.08	D	26.853	124.8	0.910									453	2
500		5.55	5.51	34.12	D	26.918	119.0	0.971									503	2
525		5.45	5.41	34.14	D	26.946	116.6	1.001									529	2

A) THE DATA ON THIS STATION WERE TAKEN FROM AN UNCALIBRATED CTD PROFILE AND SHOULD BE USED WITH CAUTION.

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 28.9 N	117 46.2 W	12/03/98	0305 UTC	74 m	290 08 kn			1015.1 mb	18.6 C	16.2 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.51	16.51	33.528	24.500	342.4	0.000	6.17	110.8					0.51	0.19	0	
1		16.51	16.51	33.528	24.500	342.4	0.003	6.17	110.8					0.51	0.19	1	208
9		16.24	16.24	33.531	24.564	336.5	0.031	6.18	110.4					0.68	0.30	9	207
10	ISL	16.20	16.20	33.538	24.579	335.2	0.034	6.16	109.9					0.81	0.36	10	
19		15.82	15.82	33.614	24.724	321.7	0.063	5.95	105.4					1.69	0.79	19	206
20	ISL	15.77	15.77	33.623	24.742	320.0	0.067	5.86	103.7					1.62	0.78	20	
29		15.30	15.30	33.690	24.898	305.4	0.095	4.99	87.5					0.68	0.55	29	205
30	ISL	15.26	15.26	33.695	24.911	304.2	0.098	4.92	86.2					0.62	0.52	30	
39		14.81	14.80	33.727	25.034	292.7	0.125	4.34	75.4					0.29	0.28	39	204
49		13.76	13.75	33.733	25.260	271.5	0.153	3.82	65.0					0.11	0.21	49	203
50	ISL	13.67	13.66	33.737	25.281	269.4	0.156	3.78	64.2					0.10	0.20	50	
59		13.06	13.05	33.773	25.433	255.3	0.179	3.52	59.0					0.06	0.13	59	202
71		12.95	12.94	33.775	25.456	253.3	0.210	3.41	57.0					0.06	0.17	71	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 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 54.2 W	11/03/98	2334 UTC	618 m	250 07 kn	250 01 05	0	1014.9 mb	19.9 C	17.0 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	16.64	16.64	33.670	24.579	334.9	0.000	5.97	107.6					0.47	0.22	0	
2		16.64	16.64	33.670	24.579	334.9	0.007	5.97	107.6					0.47	0.22	2	220
9		16.24	16.24	33.699	24.694	324.2	0.030	5.92	105.8					0.51	0.32	9	219
10	ISL	16.23	16.23	33.700	24.697	324.0	0.033	5.93	106.0					0.51	0.32	10	
17		16.19	16.19	33.705	24.710	322.9	0.056	5.98	106.8					0.62	0.39	17	218
20	ISL	16.18	16.18	33.709	24.715	322.5	0.065	5.96	106.4					0.86	0.51	20	
28		16.10	16.10	33.717	24.740	320.4	0.091	5.84	104.1					1.37	0.79	28	217
30	ISL	16.08	16.08	33.718	24.745	320.0	0.097	5.83	103.9					1.29	0.76	30	
38		15.86	15.85	33.720	24.797	315.3	0.123	5.67	100.6					0.76	0.65	38	216
48		15.09	15.08	33.711	24.961	300.0	0.154	4.87	85.1					0.30	0.31	48	215
50	ISL	14.83	14.82	33.692	25.003	296.0	0.160	4.75	82.5					0.26	0.28	50	
58		13.82	13.81	33.639	25.175	279.8	0.183	4.32	73.5					0.18	0.21	58	214
68		13.25	13.24	33.733	25.364	262.0	0.210	3.78	63.6					0.05	0.09	68	213
75	ISL	12.80	12.79	33.764	25.478	251.4	0.228	3.53	58.9					0.04	0.09	75	
84		12.27	12.26	33.792	25.602	239.7	0.250	3.30	54.4					0.02	0.08	84	212
98		11.71	11.70	33.858	25.759	225.0	0.282	3.04	49.6					0.02	0.09	98	211
100	ISL	11.64	11.63	33.870	25.782	222.9	0.287	2.99	48.7					0.02	0.09	100	
118		11.11	11.10	33.967	25.954	206.9	0.325	2.59	41.7					0.01	0.06	119	210
125	ISL	10.92	10.90	33.986	26.003	202.4	0.340	2.50	40.1					0.01	0.06	126	
137		10.64	10.62	34.010	26.072	196.1	0.364	2.38	37.9					0.01	0.06	138	209
150	ISL	10.40	10.38	34.046	26.142	189.7	0.389	2.29	36.3					0.01	0.06	151	
168		10.14	10.12	34.091	26.222	182.4	0.422	2.18	34.4					0.01	0.05	169	208
197		9.81	9.79	34.134	26.312	174.4	0.474	1.97	30.9					0.01	0.06	198	207
200	ISL	9.77	9.75	34.139	26.323	173.4	0.479	1.96	30.7							201	
227		9.43	9.40	34.182	26.413	165.3	0.525	1.86	28.9							228	206
250	ISL	9.19	9.16	34.203	26.468	160.4	0.562	1.73	26.7							251	
266		9.02	8.99	34.215	26.505	157.2	0.588	1.63	25.1							268	205
300	ISL	8.59	8.56	34.247	26.598	148.8	0.640	1.36	20.7							302	
316		8.38	8.35	34.261	26.642	144.9	0.663	1.23	18.7							318	204
375		7.72	7.68	34.290	26.763	134.0	0.746	0.93	13.9							377	203
400	ISL	7.46	7.42	34.299	26.808	130.0	0.779	0.81	12.0							403	
433		7.12	7.08	34.309	26.864	124.9	0.821	0.67	9.9							436	202
500	ISL	6.47	6.42	34.325	26.965	115.7	0.901	0.52	7.6							503	
521		6.27	6.22	34.331	26.996	112.9	0.925	0.47	6.8							525	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 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 15.0 W	12/03/98	0821 UTC	320 m	060 06 kn			1016.1 mb	17.0 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	16.24	16.24	33.672	24.672	326.0	0.000	5.86	104.7					0.55	0.28	0	
1		16.24	16.24	33.672	24.672	326.0	0.003	5.86	104.7					0.55	0.28	1	217
10		16.09	16.09	33.682	24.715	322.2	0.032	5.83	103.9					0.57	0.31	10	216
20		15.88	15.88	33.683	24.763	317.9	0.064	5.74	101.9					0.96	0.46	20	215
30		15.30	15.30	33.686	24.895	305.7	0.096	5.43	95.3					0.52	0.39	30	214
40		14.42	14.41	33.621	25.035	292.6	0.126	5.05	87.0					0.32	0.31	40	213
50	ISL	14.31	14.30	33.616	25.055	291.0	0.155	5.00	85.9					0.32	0.29	50	
51		14.29	14.28	33.616	25.059	290.6	0.158	4.99	85.7					0.32	0.29	51	212
60		13.40	13.39	33.585	25.219	275.6	0.183	4.58	77.2					0.20	0.23	60	211
70		12.83	12.82	33.582	25.330	265.2	0.210	4.29	71.5					0.14	0.14	70	210
75	ISL	12.66	12.65	33.646	25.413	257.4	0.223	3.94	65.5					0.10	0.12	75	
83		12.39	12.38	33.752	25.548	244.8	0.243	3.42	56.5					0.05	0.10	83	209
100		11.41	11.40	33.719	25.707	230.0	0.284	3.53	57.1					0.03	0.10	100	208
119		11.27	11.26	33.993	25.946	207.8	0.325	2.42	39.1					0.01	0.06	120	207
125	ISL	11.18	11.16	34.031	25.992	203.5	0.338	2.27	36.6					0.01	0.06	126	
140		10.87	10.85	34.076	26.083	195.2	0.367	2.10	33.7					0.01	0.05	141	206
150	ISL	10.55	10.53	34.089	26.149	189.0	0.387	2.04	32.5					0.01	0.05	151	
170		9.94	9.92	34.104	26.266	178.2	0.423	1.96	30.8					0.01	0.06	171	205
200	ISL	9.61	9.59	34.166	26.370	168.9	0.475	1.72	26.8					0.01	0.05	201	
201		9.60	9.58	34.168	26.373	168.6	0.477	1.71	26.7					0.01	0.05	202	204
229		9.17	9.14	34.221	26.485	158.4	0.523	1.54	23.8							230	203
250	ISL	8.91	8.88	34.237	26.540	153.5	0.556	1.39	21.4							251	
269		8.71	8.68	34.243	26.576	150.4	0.585	1.27	19.4							271	202
300	ISL	8.44	8.41	34.254	26.627	146.0	0.631	1.13	17.2							302	
317		8.29	8.26	34.261	26.655	143.5	0.655	1.06	16.1							319	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 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	12/03/98	1145 UTC	1177 m				1014.4 mb	16.3 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	16.42	16.42	33.700	24.653	327.8	0.000	5.76	103.3					0.44	0.22	0	
1		16.42	16.42	33.700	24.653	327.9	0.003	5.76	103.3					0.44	0.22	1	220
10		16.11	16.11	33.681	24.709	322.7	0.033	5.77	102.9					0.27	0.20	10	219
20		16.04	16.04	33.685	24.729	321.2	0.065	5.77	102.7					0.37	0.24	20	218
30		15.45	15.45	33.669	24.849	310.1	0.096	5.95	104.7					0.57	0.32	30	217
39		15.19	15.18	33.652	24.893	306.1	0.124	5.78	101.2					1.19	0.66	39	216
50		13.57	13.56	33.576	25.177	279.3	0.156	4.59	77.7					0.24	0.26	50	215
60		13.05	13.04	33.665	25.351	263.0	0.183	3.91	65.5					0.10	0.15	60	214
70		12.71	12.70	33.707	25.451	253.8	0.209	3.66	60.9					0.08	0.12	70	213
75	ISL	12.43	12.42	33.727	25.521	247.2	0.222	3.54	58.6					0.06	0.12	75	
84		11.89	11.88	33.761	25.650	235.1	0.243	3.37	55.1					0.04	0.13	84	212
100		11.15	11.14	33.796	25.814	219.8	0.280	3.22	51.8					0.06	0.06	100	211
118		10.59	10.58	33.829	25.939	208.2	0.318	3.09	49.2					0.02	0.07	119	210
125	ISL	10.50	10.49	33.871	25.988	203.7	0.333	2.92	46.4							126	
139		10.40	10.38	33.967	26.080	195.3	0.361	2.54	40.3							140	209
150	ISL	10.33	10.31	34.027	26.139	189.9	0.382	2.30	36.4							151	
168		10.18	10.16	34.106	26.227	181.9	0.415	2.00	31.6							169	208
197		9.64	9.62	34.189	26.383	167.6	0.466	1.73	27.0							198	207
200	ISL	9.58	9.56	34.192	26.395	166.5	0.471	1.71	26.7							201	
227		9.12	9.10	34.204	26.480	158.8	0.515	1.59	24.5							228	206
250	ISL	8.85	8.82	34.214	26.531	154.3	0.551	1.49	22.9							251	
268		8.69	8.66	34.223	26.563	151.5	0.578	1.40	21.4							270	205
300	ISL	8.43	8.40	34.244	26.620	146.6	0.626	1.22	18.5							302	
316		8.29	8.26	34.254	26.650	144.0	0.649	1.12	17.0							318	204
379		7.53	7.49	34.281	26.783	132.0	0.736	0.72	10.7							381	203
400	ISL	7.33	7.29	34.291	26.820	128.7	0.764	0.63	9.3							403	
437		7.01	6.97	34.307	26.877	123.6	0.810	0.50	7.4							440	202
500	ISL	6.44	6.39	34.316	26.962	116.0	0.886	0.37	5.4							503	
528		6.18	6.13	34.321	26.999	112.5	0.918	0.31	4.5							532	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 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	12/03/98	1721 UTC	1696 m	180 03 kn	180 01 04	1	1016.8 mb	16.7 C	15.8 C		5/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.42	15.42	33.418	24.661	327.0	0.000	5.83	102.4					0.19	0.11	0	
1		15.42	15.42	33.418	24.661	327.0	0.003	5.83	102.4					0.19	0.11	1	220
9		14.95	14.95	33.394	24.746	319.2	0.029	5.85	101.7					0.21	0.14	9	219
10	ISL	14.92	14.92	33.394	24.752	318.6	0.032	5.85	101.7					0.22	0.15	10	
20		14.69	14.69	33.388	24.797	314.6	0.064	5.85	101.2					0.36	0.30	20	218
30		14.44	14.44	33.343	24.816	313.2	0.095	5.88	101.2					0.60	0.54	30	217
40		14.31	14.30	33.347	24.847	310.5	0.127	5.82	99.9					0.64	0.42	40	216
49		14.15	14.14	33.340	24.875	308.0	0.154	5.86	100.2					0.62	0.59	49	215
50	ISL	14.14	14.13	33.344	24.881	307.6	0.157	5.86	100.2					0.63	0.63	50	
59		14.09	14.08	33.380	24.919	304.2	0.185	5.82	99.4					0.67	0.87	59	214
70		14.02	14.01	33.384	24.937	302.8	0.218	5.72	97.6					0.59	0.70	70	213
75	ISL	13.95	13.94	33.384	24.952	301.5	0.233	5.67	96.6					0.52	0.61	75	
84		13.81	13.80	33.385	24.982	298.9	0.260	5.48	93.1					0.38	0.44	84	212
98		12.80	12.79	33.494	25.269	271.8	0.300	4.75	79.1					0.15	0.25	98	211
100	ISL	12.56	12.55	33.509	25.327	266.3	0.306	4.64	76.8					0.13	0.24	100	
119		10.49	10.48	33.662	25.826	218.9	0.352	3.77	59.8					0.04	0.19	120	210
125	ISL	10.25	10.24	33.699	25.897	212.3	0.365	3.62	57.1					0.03	0.16	126	
139		9.99	9.97	33.767	25.994	203.3	0.394	3.39	53.2					0.02	0.11	140	209
150	ISL	9.74	9.72	33.810	26.069	196.3	0.416	3.24	50.6					0.01	0.10	151	
168		9.39	9.37	33.873	26.176	186.4	0.450	3.03	47.0					0.01	0.08	169	208
198		9.01	8.99	33.994	26.333	172.1	0.504	2.59	39.8					0.01	0.08	199	207
200	ISL	9.02	9.00	34.005	26.340	171.5	0.508	2.55	39.2							201	
229		9.13	9.10	34.127	26.418	164.7	0.556	2.03	31.3							230	206
250	ISL	8.67	8.64	34.104	26.473	159.7	0.590	2.09	31.9							251	
270		8.19	8.16	34.075	26.523	155.0	0.622	2.17	32.8							272	205
300	ISL	8.23	8.20	34.177	26.598	148.6	0.667	1.66	25.1							302	
318		8.25	8.22	34.235	26.641	144.9	0.694	1.29	19.5							320	204
377		7.57	7.53	34.253	26.756	134.6	0.776	0.90	13.4							379	203
400	ISL	7.34	7.30	34.264	26.797	130.8	0.807	0.76	11.3							403	
437		7.00	6.96	34.283	26.860	125.2	0.854	0.56	8.2							440	202
500	ISL	6.43	6.38	34.313	26.960	116.1	0.930	0.39	5.7							503	
522		6.23	6.18	34.325	26.996	112.8	0.955	0.33	4.8							526	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 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 28.8 W	12/03/98	2306 UTC	1317 m	260 10 kn	260 04 06	2	1015.1 mb	16.9 C	11.0 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	15.97	15.97	33.466	24.575	335.2	0.000	5.75	102.1					0.17	0.05	0	
2		15.97	15.97	33.466	24.576	335.3	0.007	5.75	102.1					0.17	0.05	2	220
10	ISL	15.63	15.63	33.448	24.638	329.5	0.033	5.78	101.9					0.16	0.05	10	
15		15.36	15.36	33.435	24.688	324.9	0.050	5.80	101.7					0.16	0.05	15	219
20	ISL	15.32	15.32	33.437	24.699	324.1	0.066	5.80	101.6					0.17	0.05	20	
29		15.26	15.26	33.440	24.714	322.9	0.095	5.79	101.3					0.18	0.07	29	218
30	ISL	15.25	15.25	33.440	24.717	322.7	0.098	5.79	101.3					0.18	0.07	30	
44		15.20	15.19	33.434	24.724	322.4	0.143	5.78	101.0					0.26	0.14	44	217
50	ISL	15.19	15.18	33.432	24.724	322.6	0.163	5.78	101.0					0.33	0.19	50	
58		15.17	15.16	33.430	24.727	322.5	0.189	5.78	101.0					0.41	0.24	58	216
73		15.12	15.11	33.421	24.732	322.5	0.237	5.79	101.0					0.40	0.23	73	215
75	ISL	15.12	15.11	33.421	24.732	322.6	0.243	5.79	101.0					0.40	0.24	75	
84		15.10	15.09	33.419	24.735	322.6	0.272	5.78	100.8					0.41	0.26	84	214
94		15.07	15.06	33.413	24.737	322.6	0.305	5.78	100.7					0.38	0.27	94	213
100	ISL	15.04	15.02	33.407	24.739	322.6	0.324	5.80	101.0					0.36	0.25	100	
104		15.02	15.00	33.403	24.741	322.6	0.337	5.81	101.2					0.35	0.23	104	212
114		13.48	13.46	33.413	25.071	291.2	0.368	5.18	87.4					0.11	0.14	115	211
124		12.51	12.49	33.438	25.283	271.1	0.396	4.84	80.0					0.07	0.09	125	210
125	ISL	12.42	12.40	33.444	25.305	269.0	0.398	4.80	79.2					0.07	0.09	126	
139		11.28	11.26	33.540	25.592	241.8	0.434	4.33	69.8					0.04	0.08	140	209
150	ISL	10.73	10.71	33.601	25.738	228.1	0.460	4.06	64.7					0.02	0.07	151	
164		10.25	10.23	33.676	25.879	214.8	0.491	3.76	59.3					0.01	0.06	165	208
193		9.52	9.50	33.874	26.156	188.9	0.550	3.00	46.6					0.01	0.05	194	207
200	ISL	9.42	9.40	33.907	26.199	185.0	0.563	2.87	44.5							201	
227		9.11	9.09	33.999	26.321	173.8	0.611	2.53	39.0							228	206
250	ISL	8.67	8.64	34.045	26.427	164.1	0.650	2.38	36.3							251	
269		8.31	8.28	34.072	26.503	157.0	0.680	2.28	34.5							270	205
300	ISL	8.00	7.97	34.115	26.584	149.8	0.728	1.97	29.6							302	
316		7.89	7.86	34.133	26.614	147.1	0.752	1.79	26.9							318	204
374		7.38	7.34	34.190	26.733	136.5	0.834	1.20	17.8							376	203
400	ISL	7.09	7.05	34.200	26.782	132.1	0.869	1.03	15.2							402	
434		6.71	6.67	34.212	26.843	126.4	0.913	0.85	12.4							437	202
500	ISL	6.17	6.13	34.267	26.958	116.1	0.993	0.54	7.8							503	
520		6.00	5.95	34.285	26.994	112.7	1.016	0.45	6.5							523	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 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 57.9 W	13/03/98	0426 UTC	838 m	140 14 kn			1013.9 mb	15.8 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	15.63	15.63	33.446	24.636	329.4	0.000	5.78	101.9					0.15	0.04	0	
1	15.63	15.63	33.446	24.636	329.4	0.003	5.78	101.9					0.15	0.04	1	220
10 ISL	15.65	15.65	33.452	24.637	329.7	0.033	5.77	101.8					0.14	0.05	10	
14	15.65	15.65	33.453	24.638	329.7	0.046	5.77	101.8					0.13	0.05	14	219
20 ISL	15.62	15.62	33.468	24.656	328.1	0.066	5.76	101.6					0.11	0.05	20	
28	15.56	15.56	33.487	24.684	325.7	0.092	5.74	101.1					0.10	0.05	28	218
30 ISL	15.55	15.55	33.486	24.686	325.6	0.099	5.74	101.1					0.10	0.05	30	
44	15.52	15.51	33.486	24.693	325.4	0.144	5.72	100.7					0.14	0.07	44	217
50 ISL	15.51	15.50	33.488	24.697	325.2	0.164	5.72	100.6					0.17	0.08	50	
59	15.50	15.49	33.491	24.702	325.0	0.193	5.72	100.6					0.23	0.12	59	216
73	15.49	15.48	33.487	24.701	325.5	0.238	5.72	100.6					0.32	0.23	73	215
75 ISL	15.46	15.45	33.482	24.704	325.3	0.245	5.72	100.5					0.32	0.22	75	
83	15.33	15.32	33.459	24.716	324.4	0.271	5.73	100.4					0.31	0.16	83	214
92	15.23	15.22	33.444	24.726	323.7	0.300	5.78	101.1					0.32	0.22	92	213
100 ISL	15.15	15.13	33.444	24.744	322.2	0.326	5.74	100.2					0.32	0.26	100	
103	15.12	15.10	33.444	24.751	321.7	0.336	5.73	100.0					0.32	0.26	103	212
114	13.65	13.63	33.405	25.031	295.0	0.369	5.28	89.4					0.18	0.20	114	211
124	12.67	12.65	33.426	25.242	275.0	0.398	5.06	83.9					0.15	0.15	125	210
125 ISL	12.61	12.59	33.427	25.255	273.8	0.401	5.04	83.5					0.15	0.15	126	
138	12.01	11.99	33.449	25.387	261.5	0.436	4.82	78.9					0.10	0.12	139	209
150 ISL	11.26	11.24	33.510	25.572	243.9	0.466	4.54	73.1					0.06	0.09	151	
163	10.49	10.47	33.601	25.780	224.3	0.496	4.18	66.3					0.02	0.05	164	208
192	9.59	9.57	33.814	26.098	194.4	0.557	3.24	50.4					0.00	0.02	193	207
200 ISL	9.38	9.36	33.843	26.155	189.1	0.572	3.15	48.8					0.00	0.02	201	
226	8.80	8.78	33.908	26.299	175.8	0.620	3.01	46.0					0.00	0.03	227	206
250 ISL	8.46	8.43	33.988	26.414	165.1	0.661	2.77	42.1							251	
267	8.29	8.26	34.041	26.482	159.0	0.688	2.57	38.9							268	205
300 ISL	8.08	8.05	34.108	26.566	151.5	0.739	2.09	31.5							302	
316	7.99	7.96	34.129	26.596	148.9	0.763	1.87	28.1							318	204
375	7.38	7.34	34.152	26.703	139.3	0.848	1.45	21.5							377	203
400 ISL	6.97	6.93	34.144	26.754	134.6	0.883	1.29	18.9							402	
436	6.41	6.37	34.140	26.826	127.8	0.930	1.06	15.4							439	202
500 ISL	6.15	6.11	34.202	26.909	120.6	1.009	0.67	9.7							503	
514	6.09	6.04	34.216	26.928	119.0	1.026	0.58	8.3							517	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 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 38.4 W	13/03/98	1108 UTC	3813 m	160 08 kn			1014.5 mb	15.3 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	15.90	15.90	33.498	24.616	331.3	0.000	5.71	101.3					0.11	0.03	0	
1	15.90	15.90	33.498	24.616	331.4	0.003	5.71	101.3					0.11	0.03	1	220
10 ISL	15.90	15.90	33.493	24.612	332.0	0.033	5.79	102.7					0.10	0.03	10	
15	15.90	15.90	33.490	24.610	332.4	0.050	5.83	103.4					0.10	0.03	15	219
20 ISL	15.85	15.85	33.478	24.613	332.3	0.066	5.80	102.7					0.09	0.03	20	
30	15.73	15.73	33.452	24.620	331.9	0.100	5.72	101.1					0.09	0.04	30	218
45	15.63	15.62	33.437	24.631	331.3	0.149	5.75	101.4					0.11	0.04	45	217
50 ISL	15.68	15.67	33.462	24.639	330.7	0.166	5.75	101.5					0.12	0.04	50	
59	15.78	15.77	33.510	24.654	329.6	0.196	5.74	101.6					0.14	0.05	59	216
74	15.69	15.68	33.506	24.672	328.4	0.245	5.77	101.9					0.25	0.10	74	215
75 ISL	15.69	15.68	33.507	24.672	328.3	0.248	5.76	101.7					0.25	0.11	75	
84	15.68	15.67	33.512	24.679	328.0	0.278	5.70	100.6					0.28	0.15	84	214
95	15.67	15.66	33.503	24.675	328.8	0.314	5.71	100.8					0.31	0.16	95	213
100 ISL	15.67	15.65	33.504	24.676	328.8	0.330	5.70	100.6					0.30	0.17	100	
103	15.67	15.65	33.504	24.676	328.9	0.340	5.69	100.4					0.29	0.17	103	212
114	15.66	15.64	33.514	24.686	328.3	0.376	5.68	100.2					0.15	0.09	114	211
124	14.30	14.28	33.474	24.950	303.2	0.408	5.40	92.7					0.14	0.13	125	210
125 ISL	14.16	14.14	33.471	24.977	300.6	0.411	5.36	91.7					0.14	0.13	126	
139	12.45	12.43	33.466	25.316	268.3	0.451	4.73	78.1					0.08	0.10	140	209
150 ISL	11.69	11.67	33.515	25.498	251.1	0.479	4.41	71.7					0.05	0.08	151	
164	11.09	11.07	33.598	25.672	234.8	0.513	4.09	65.7					0.02	0.05	165	208
193	10.13	10.11	33.767	25.971	206.7	0.577	3.46	54.5					0.00	0.03	194	207
200 ISL	9.89	9.87	33.800	26.038	200.5	0.592	3.37	52.8							201	
228	8.99	8.97	33.913	26.273	178.4	0.645	3.11	47.8							229	206
250 ISL	8.50	8.47	33.980	26.402	166.3	0.683	2.90	44.1							251	
268	8.18	8.15	34.020	26.482	158.9	0.712	2.72	41.0							269	205
300 ISL	7.72	7.69	34.061	26.582	149.7	0.761	2.33	34.8							302	
318	7.51	7.48	34.075	26.623	146.0	0.788	2.10	31.2							320	204
378	7.02	6.98	34.140	26.744	135.2	0.872	1.39	20.4							380	203
400 ISL	6.92	6.88	34.172	26.783	131.8	0.902	1.17	17.2							402	
440	6.72	6.68	34.222	26.850	125.9	0.953	0.76	11.1							443	202
500 ISL	6.14	6.10	34.242	26.942	117.5	1.026									503	
512	6.03	5.98	34.246	26.959	115.9	1.040									515	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 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	13/03/98	1800 UTC	3660 m	290 15 kn	290 04 06	1	1016.9 mb	17.1 C	14.1 C		2/8	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	16.14	16.14	33.557	24.607	332.2	0.000	5.64	100.5					0.10	0.03	0	
1		16.14	16.14	33.557	24.607	332.2	0.003	5.64	100.5					0.10	0.03	1	220
10	ISL	16.10	16.10	33.553	24.613	331.9	0.033	5.65	100.6					0.10	0.03	10	
14		16.08	16.08	33.551	24.616	331.7	0.046	5.65	100.6					0.10	0.03	14	219
20	ISL	16.05	16.05	33.549	24.622	331.4	0.066	5.66	100.7					0.10	0.03	20	
29		16.02	16.02	33.545	24.626	331.3	0.096	5.67	100.8					0.11	0.03	29	218
30	ISL	16.02	16.02	33.545	24.626	331.3	0.100	5.67	100.8					0.11	0.03	30	
44		15.98	15.97	33.536	24.629	331.5	0.146	5.66	100.6					0.11	0.03	44	217
50	ISL	15.90	15.89	33.521	24.635	331.1	0.166	5.70	101.1					0.11	0.03	50	
60		15.75	15.74	33.492	24.647	330.3	0.199	5.76	101.8					0.13	0.03	60	216
75		15.60	15.59	33.459	24.656	329.9	0.248	5.71	100.6					0.17	0.05	75	215
85		15.61	15.60	33.461	24.655	330.3	0.281	5.70	100.5					0.19	0.05	85	214
96		15.55	15.54	33.458	24.667	329.5	0.318	5.69	100.2					0.22	0.11	96	213
100	ISL	15.41	15.39	33.433	24.678	328.5	0.331	5.70	100.0					0.25	0.11	100	
104		15.23	15.21	33.421	24.709	325.7	0.344	5.71	99.8					0.28	0.12	104	212
115		14.69	14.67	33.593	24.959	302.2	0.378	5.41	93.7					0.25	0.21	115	211
125		13.04	13.02	33.540	25.258	273.6	0.407	5.17	86.5					0.19	0.16	126	210
140		12.04	12.02	33.505 D	25.424	257.9	0.447	4.72	77.3					0.11	0.12	141	209
150	ISL	11.20	11.18	33.520	25.591	242.1	0.472	4.49	72.2					0.07	0.09	151	
165		10.07	10.05	33.585	25.839	218.6	0.507	4.17	65.5					0.03	0.05	166	208
195		9.34	9.32	33.767	26.102	194.0	0.569	3.47	53.7					0.00	0.04	196	207
200	ISL	9.25	9.23	33.792	26.136	190.8	0.578	3.38	52.2							201	
231		8.72	8.70	33.916	26.317	174.1	0.635	2.98	45.5							232	206
250	ISL	8.40	8.37	33.957	26.399	166.5	0.667	2.96	44.9							251	
270		8.06	8.03	33.982	26.470	160.0	0.700	2.94	44.2							271	205
300	ISL	7.52	7.49	33.992	26.556	152.0	0.747	2.84	42.2							302	
317		7.26	7.23	33.997	26.597	148.2	0.772	2.71	40.0							319	204
377		6.90	6.86	34.091	26.721	137.2	0.858	1.64	24.0							379	203
400	ISL	6.71	6.67	34.112	26.764	133.4	0.889	1.39	20.3							402	
436		6.39	6.35	34.137	26.826	127.8	0.936	1.10	15.9							439	202
500	ISL	5.82	5.78	34.183	26.935	117.7	1.014	0.72	10.3							503	
518		5.66	5.62	34.197	26.966	114.9	1.035	0.61	8.7							521	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9803 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 59.7 W	14/03/98	0128 UTC		310 20 kn	310 05 06	1	1016.1 mb	16.1 C	13.7 C		3/8	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	16.39	16.39	33.601	24.583	334.4	0.000	5.64	101.1					0.07	0.02	0	
1		16.39	16.39	33.601	24.584	334.4	0.003	5.64	101.1					0.07	0.02	1	220
10	ISL	16.40	16.40	33.602	24.582	334.9	0.033	5.63	100.9					0.08	0.01	10	
15		16.40	16.40	33.603	24.583	334.9	0.050	5.63	100.9					0.08	0.01	15	219
20	ISL	16.40	16.40	33.603	24.583	335.1	0.067	5.64	101.1					0.08	0.01	20	
28		16.40	16.40	33.602	24.583	335.4	0.094	5.65	101.3					0.08	0.01	28	218
30	ISL	16.39	16.39	33.601	24.585	335.3	0.100	5.65	101.2					0.08	0.01	30	
44		16.31	16.30	33.591	24.596	334.7	0.147	5.67	101.4					0.08	0.02	44	217
50	ISL	16.29	16.28	33.586	24.597	334.8	0.167	5.67	101.4					0.09	0.02	50	
59		16.22	16.21	33.565	24.597	335.1	0.198	5.66	101.0					0.10	0.02	59	216
72		15.89	15.88	33.489	24.614	333.8	0.241	5.68	100.7					0.12	0.05	72	215
75	ISL	15.88	15.87	33.491	24.618	333.6	0.251	5.68	100.7					0.13	0.05	75	
83		15.86	15.85	33.490	24.622	333.4	0.278	5.68	100.6					0.15	0.05	83	214
92		15.88	15.87	33.491	24.618	334.0	0.308	5.66	100.3					0.17	0.05	92	213
100	ISL	16.09	16.07	33.584	24.643	332.0	0.334	5.61	99.9					0.25	0.11	100	
104		16.19	16.17	33.634	24.658	330.7	0.348	5.58	99.6					0.28	0.15	104	212
116		16.08	16.06	33.649	24.695	327.5	0.387	5.55	98.8					0.25	0.19	116	211
124		15.60	15.58	33.649	24.803	317.4	0.413	5.50	97.0					0.27	0.18	125	210
125	ISL	15.48	15.46	33.640	24.823	315.5	0.416	5.49	96.6					0.27	0.18	126	
137		13.87	13.85	33.521	25.076	291.5	0.453	5.33	90.7					0.22	0.19	138	209
150	ISL	12.53	12.51	33.473	25.307	269.5	0.489	5.13	84.9					0.15	0.15	151	
163		11.45	11.43	33.482	25.516	249.6	0.523	4.86	78.6					0.08	0.10	164	208
194		9.53	9.51	33.672	25.997	204.0	0.593	3.87	60.1					0.01	0.03	195	207
200	ISL	9.31	9.29	33.713	26.065	197.6	0.605	3.76	58.1							201	
227		8.61	8.59	33.875	26.302	175.4	0.656	3.41	51.9							228	206
250	ISL	8.12	8.09	33.953	26.438	162.7	0.694	3.14	47.3							251	
266		7.84	7.81	33.985	26.504	156.5	0.720	2.97	44.5							267	205
300	ISL	7.38	7.35	34.015	26.594	148.3	0.772	2.64	39.1							302	
317		7.20	7.17	34.021	26.624	145.6	0.797	2.46	36.3							319	204
375		6.73	6.70	34.078	26.734	135.8	0.878	1.63	23.8							377	203
400	ISL	6.62	6.58	34.108	26.773	132.5	0.912	1.35	19.7							402	
436		6.45	6.41	34.142	26.822	128.2	0.959	1.04	15.1							439	202
500	ISL	5.79	5.75	34.139	26.904	120.6	1.038	0.87	12.4							503	
520		5.59	5.55	34.139	26.928	118.3	1.062	0.82	11.7							523	201

CalCOFI Cruise 9803

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	42	34 11.4	119 32.8	03/16	0041	0051	226	67	89	89
90	28	33 29.1	117 46.2	03/11	2020	2026	130	47	46	46
90	30	33 25.0	117 54.4	03/11	1659	1720	441	211	18	18
90	35	33 15.0	118 15.5	03/12	0147	0208	460	205	30	30
90	37	33 10.9	118 24.1	03/12	0511	0531	423	200	121	31
90	45	32 55.5	118 56.3	03/12	1036	1058	421	198	45	45
90	53	32 38.7	119 29.3	03/12	1631	1652	430	216	21	21
90	60	32 24.6	119 57.6	03/12	2157	2219	433	208	30	30
90	70	32 04.7	120 38.4	03/13	0430	0453	455	203	20	20
90	80	31 44.3	121 19.7	03/13	1126	1150	508	203	12	12
90	90	31 25.3	122 00.1	03/13	1929	1956	575	208	7	7

FIGURES

Cruise 9804

1. CalCOFI Cruise 9804, 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 9804

2 - 23 APRIL 1998

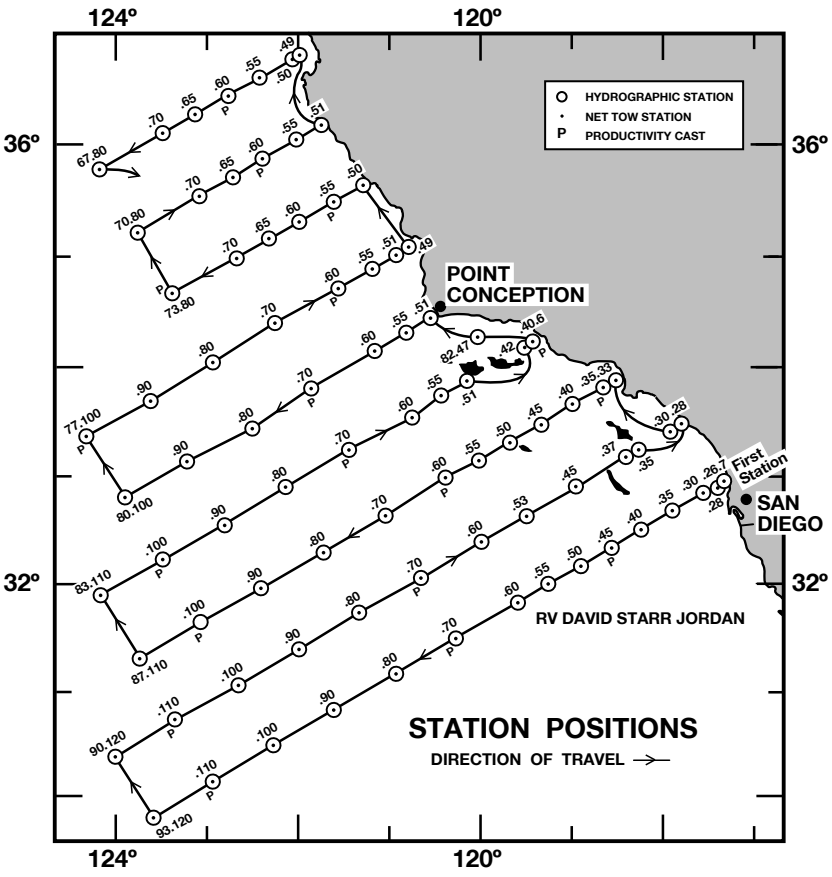


FIGURE 1

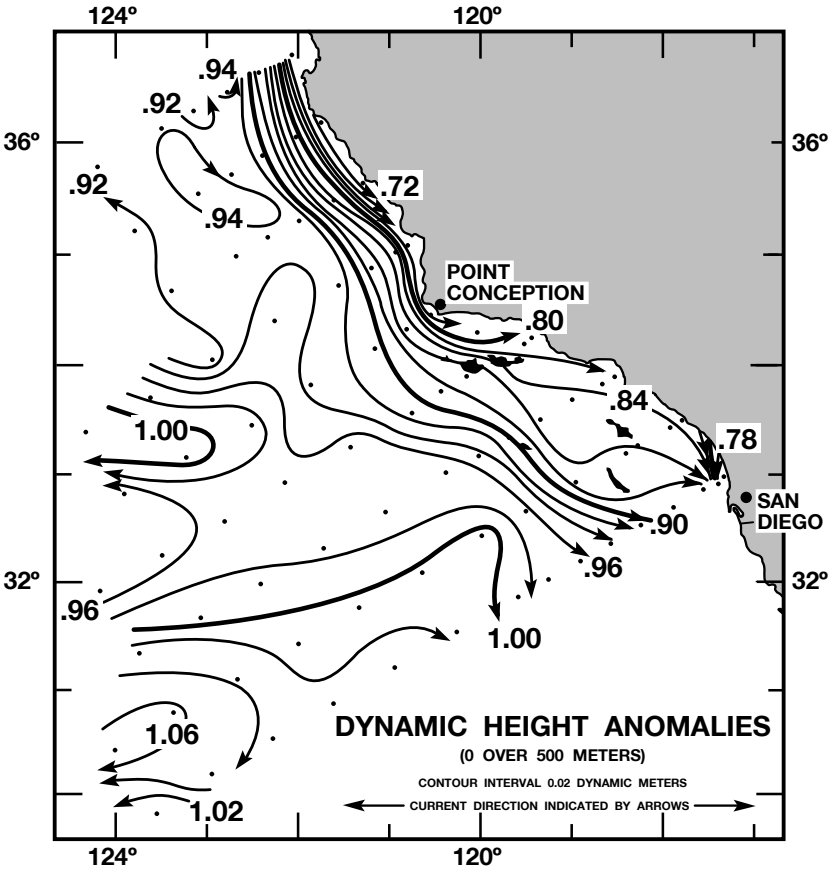


FIGURE 2

CALCOFI CRUISE 9804

2 - 23 APRIL 1998

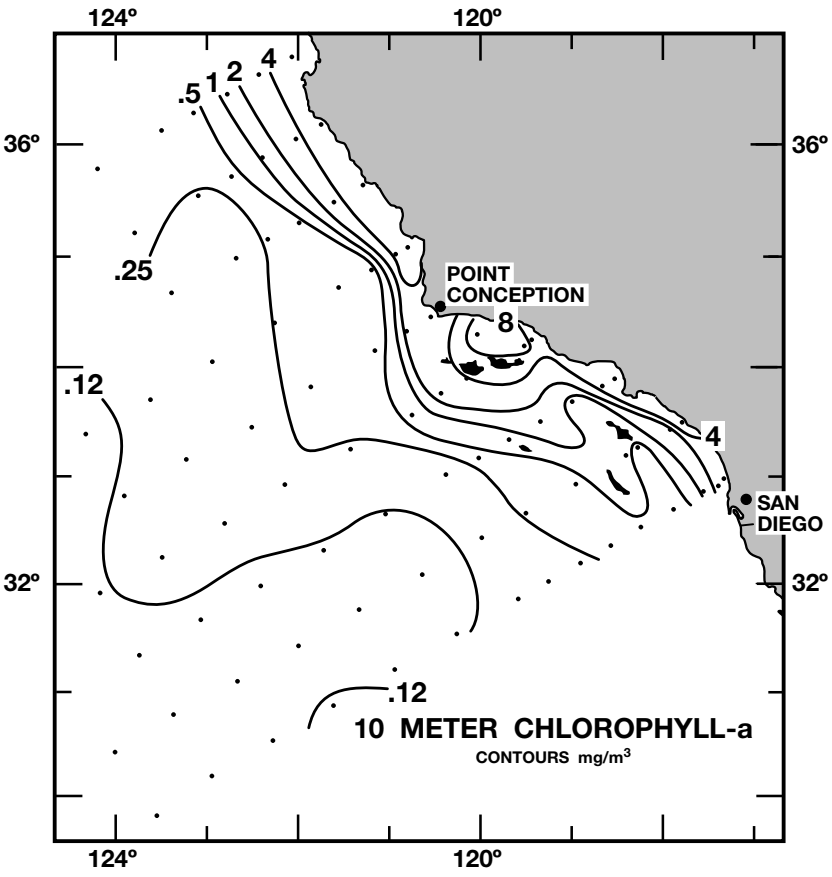


FIGURE 3A

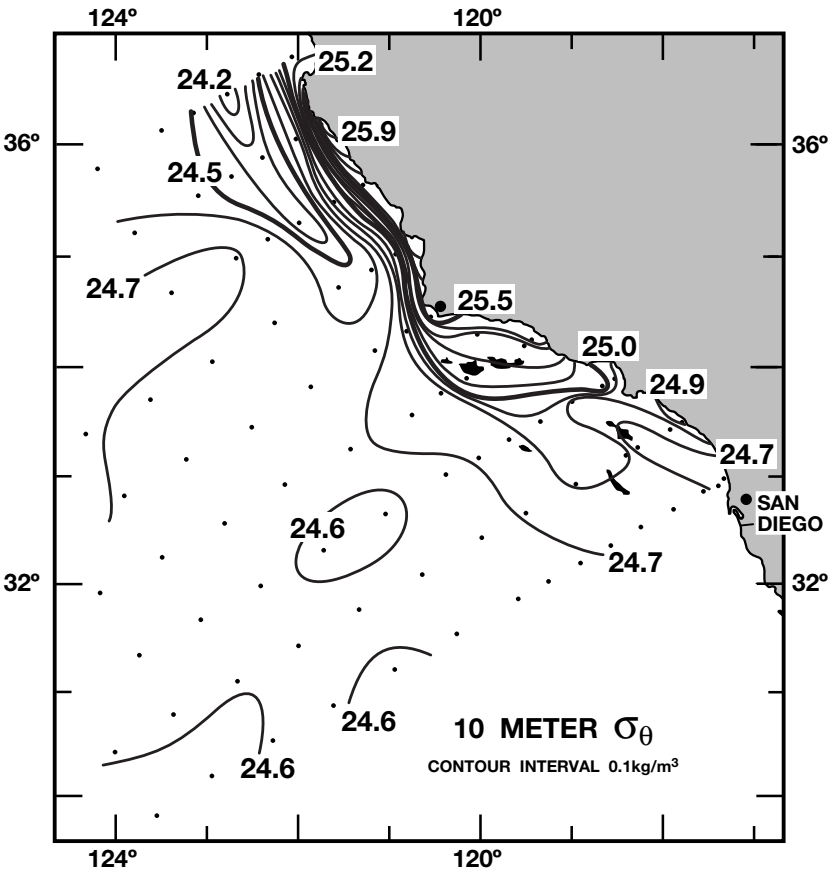


FIGURE 3B

CALCOFI CRUISE 9804

2 - 23 APRIL 1998

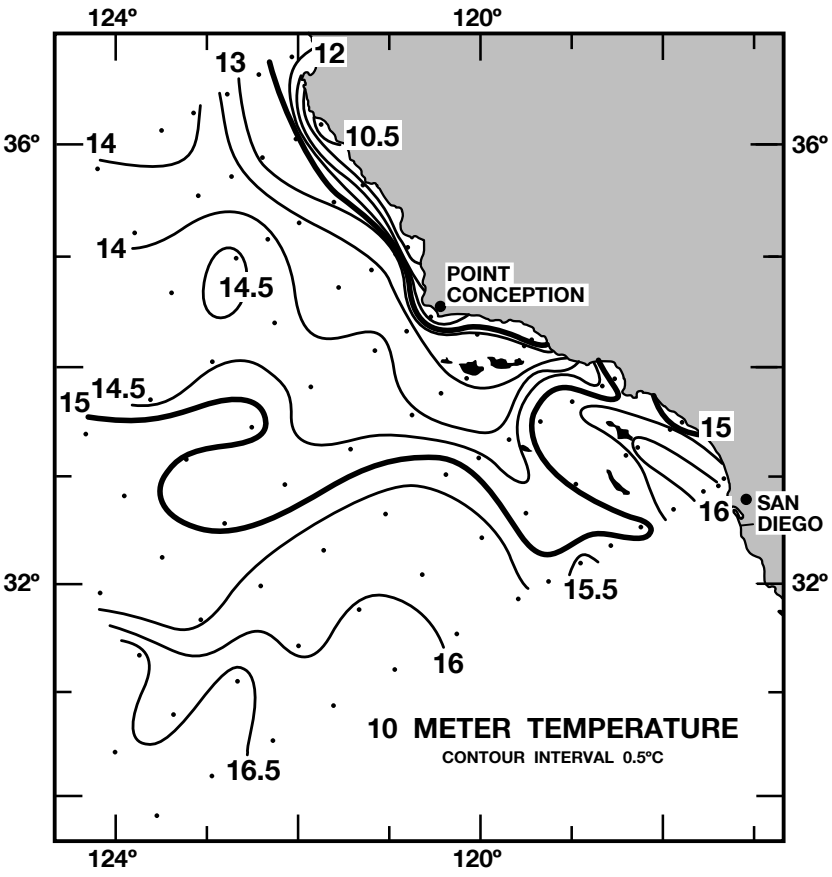


FIGURE 3C

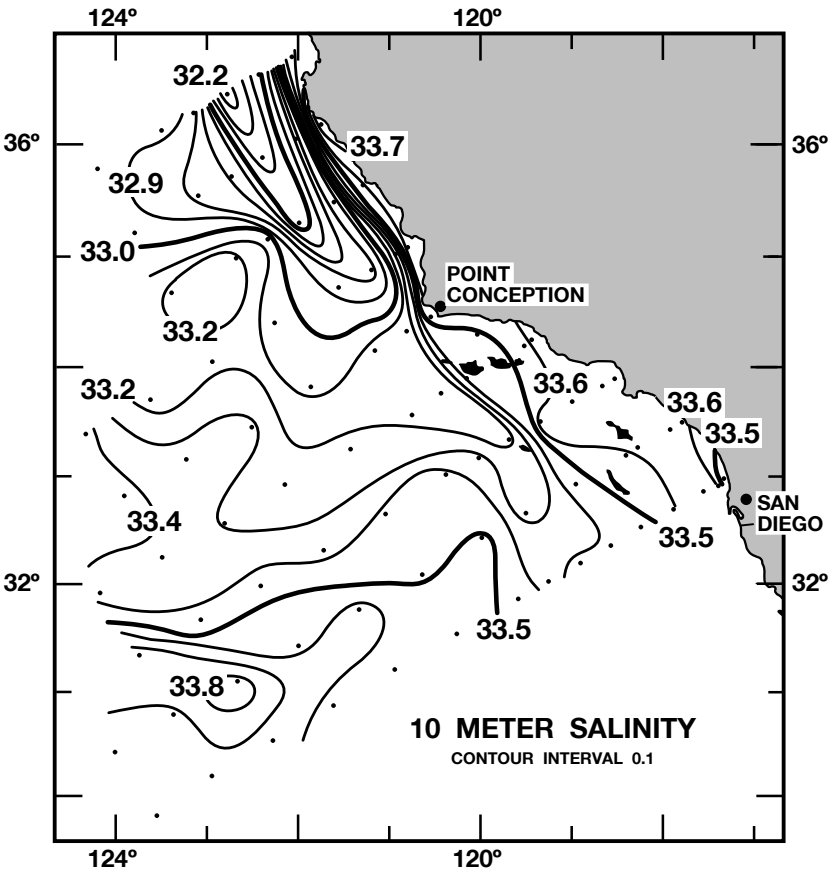


FIGURE 3D

CALCOFI CRUISE 9804

2 - 23 APRIL 1998

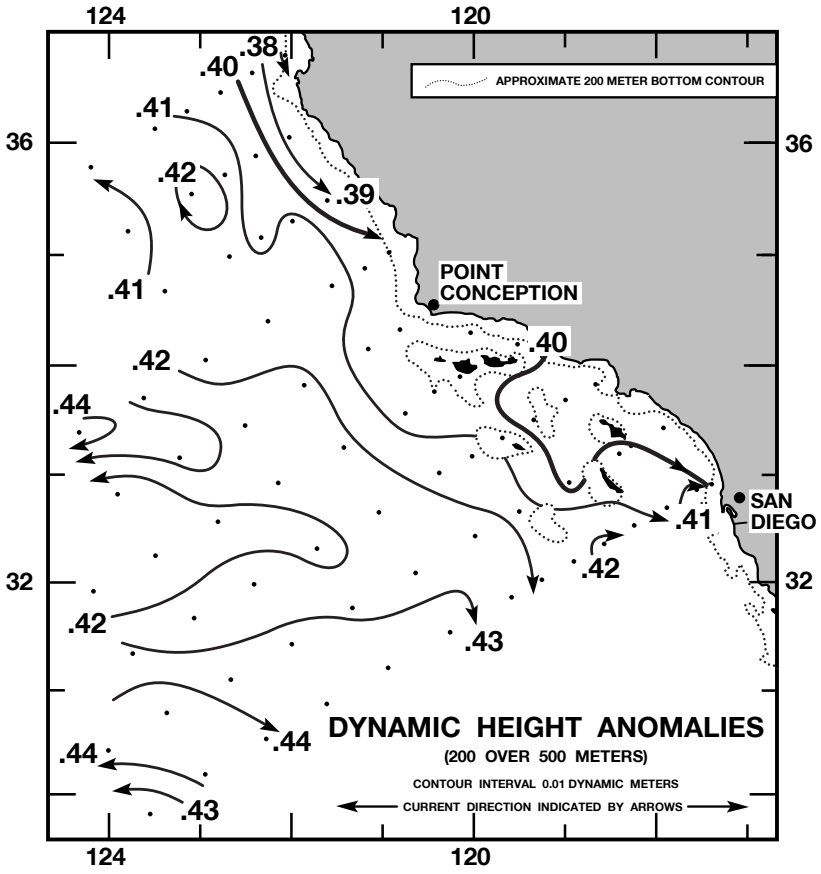


FIGURE 4A

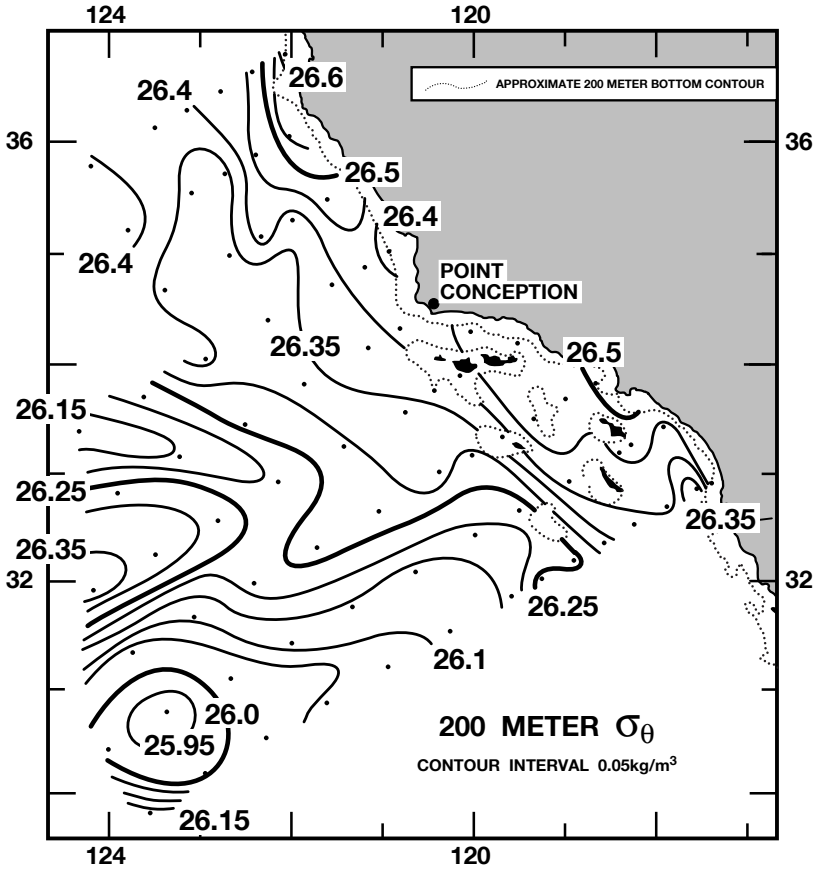


FIGURE 4B

CALCOFI CRUISE 9804

2 - 23 APRIL 1998

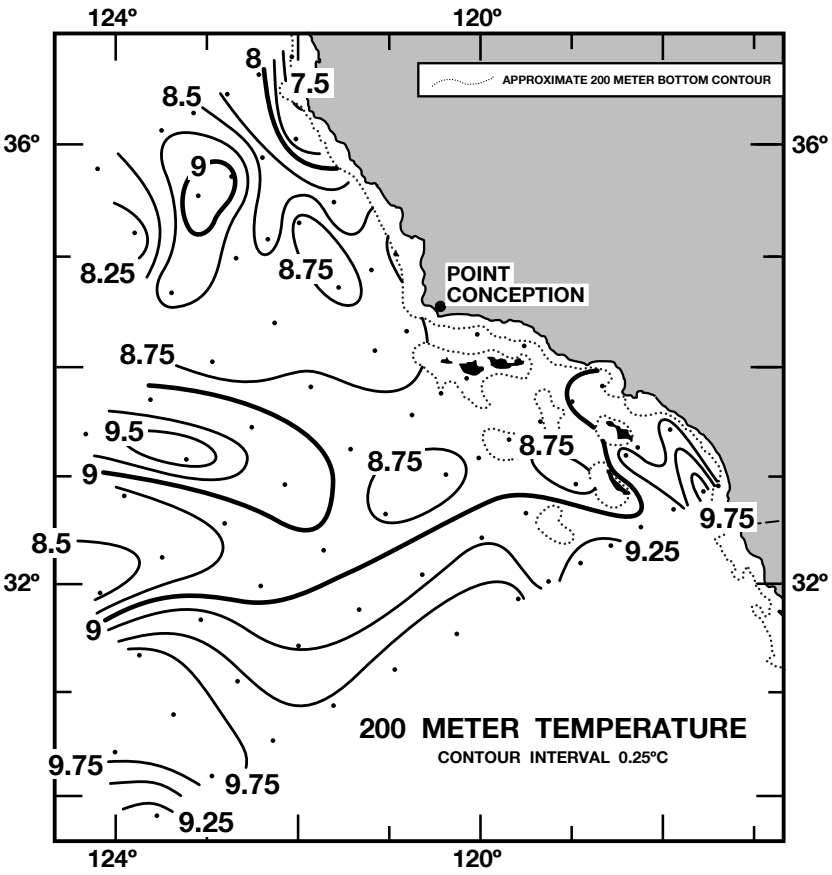


FIGURE 4C

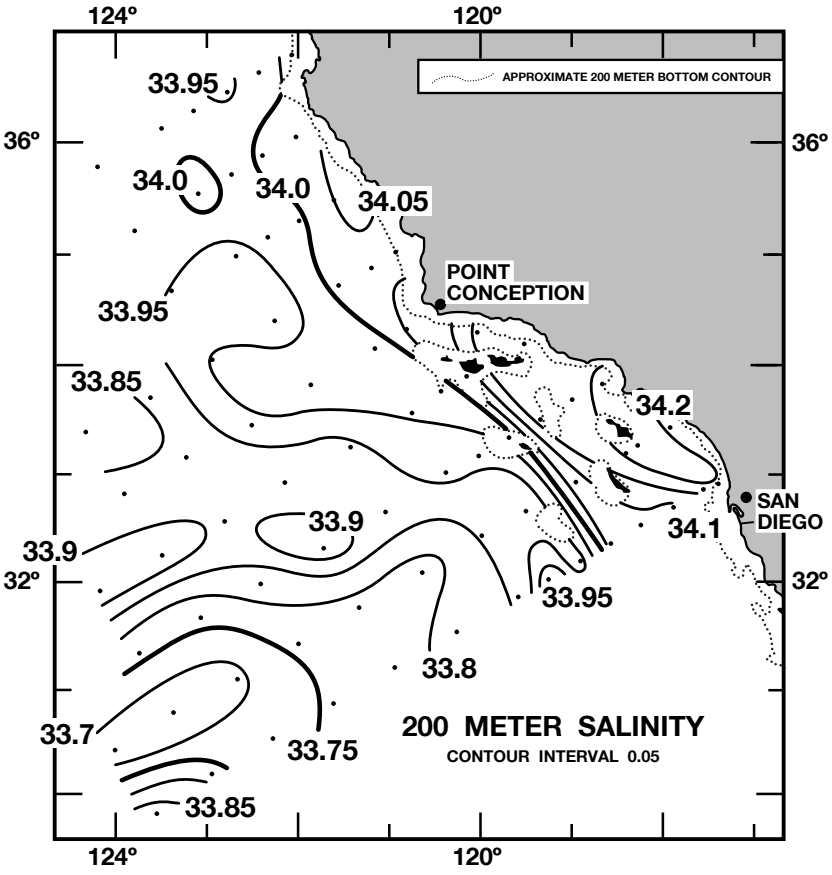


FIGURE 4D

CALCOFI CRUISE 9804

6 - 9 April 1998

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

GEOSTROPHIC VELOCITY RELATIVE TO 500m (cm/s)

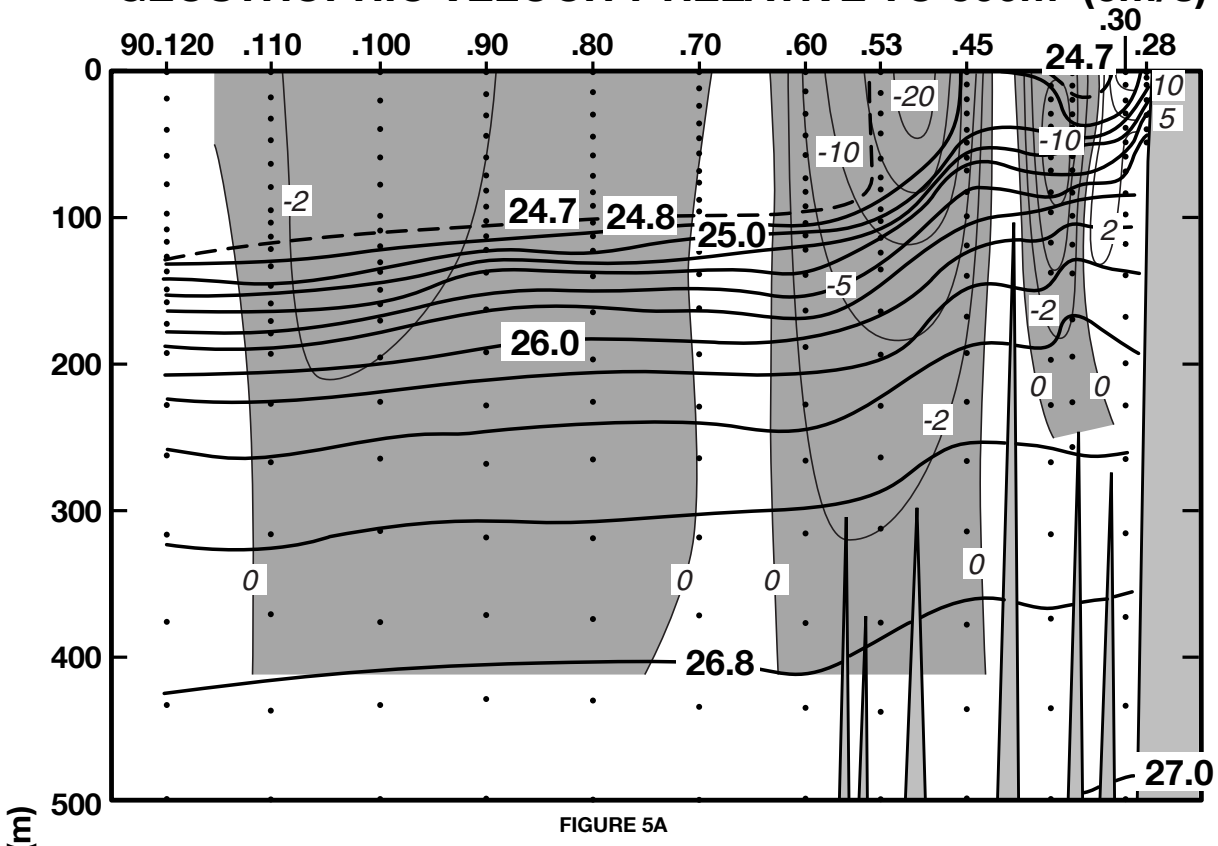


FIGURE 5A

DEPTH (m)

TEMPERATURE (ºC) ALONG CALCOFI LINE 90

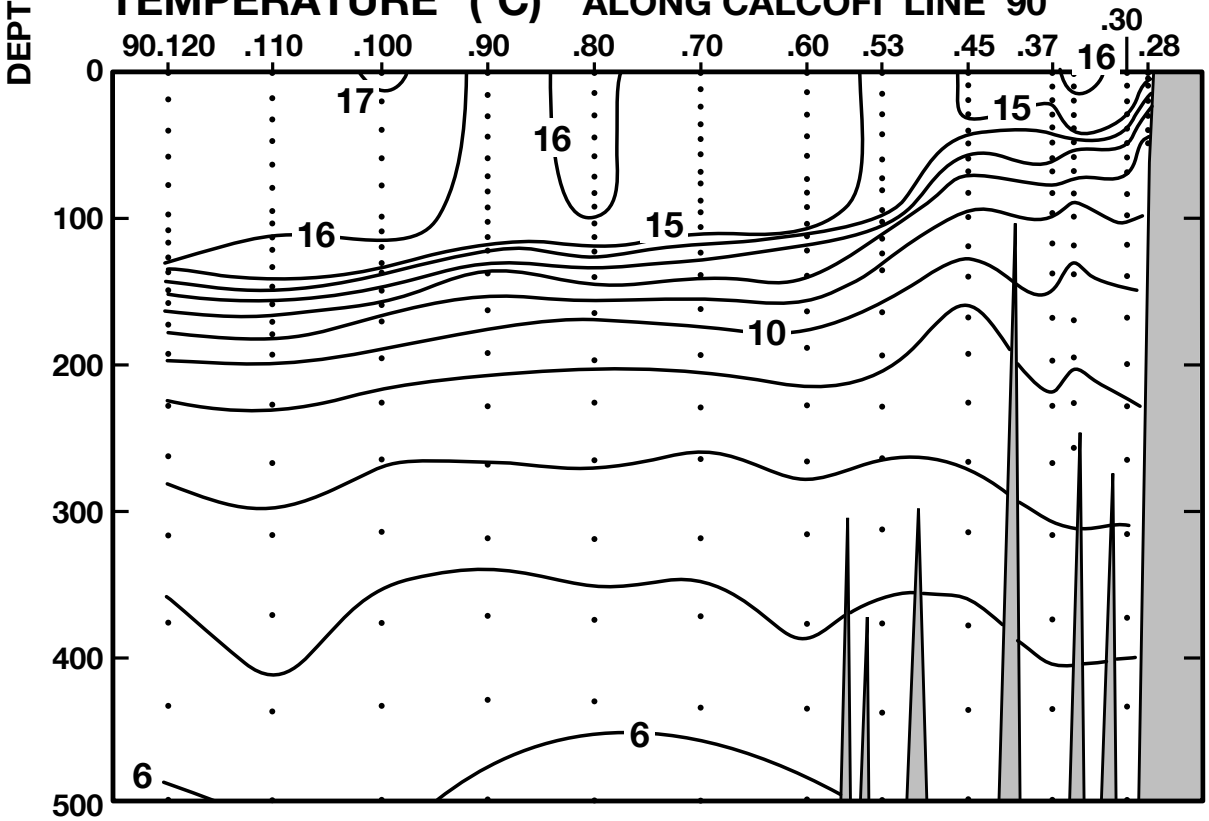


FIGURE 5B

CALCOFI CRUISE 9804

6 - 9 APRIL 1998

SALINITY ALONG CALCOFI LINE 90

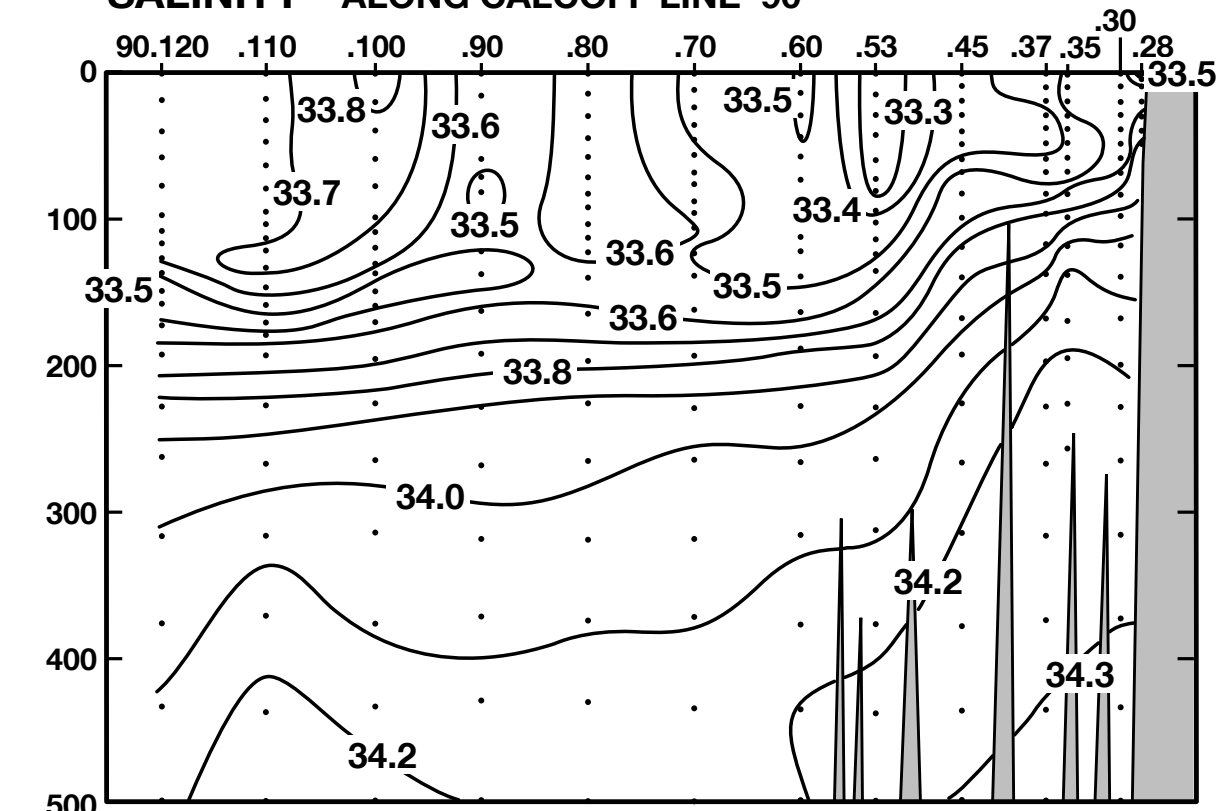


FIGURE 5C

SILICATE (μM/l) ALONG CALCOFI LINE 90

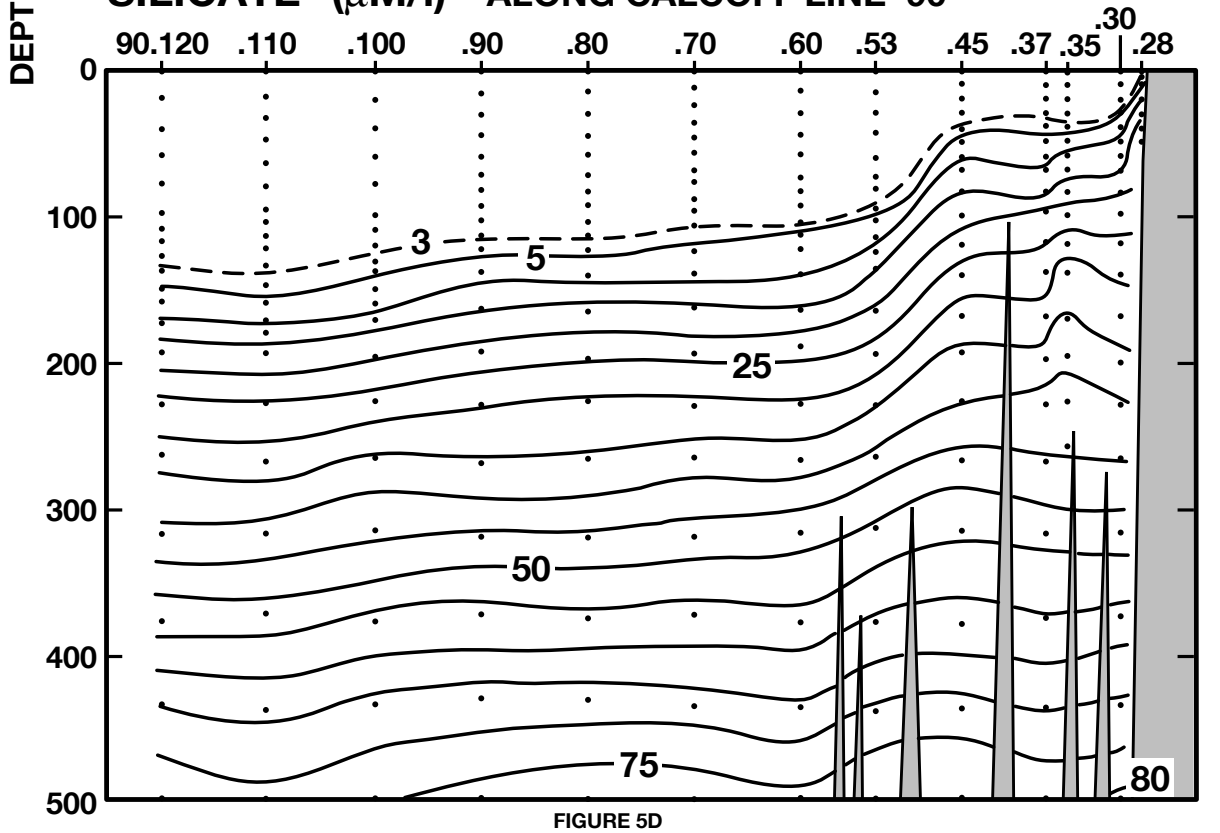


FIGURE 5D

CALCOFI CRUISE 9804

6 - 9 APRIL 1998

NITRATE (μM/l) ALONG CALCOFI LINE 90

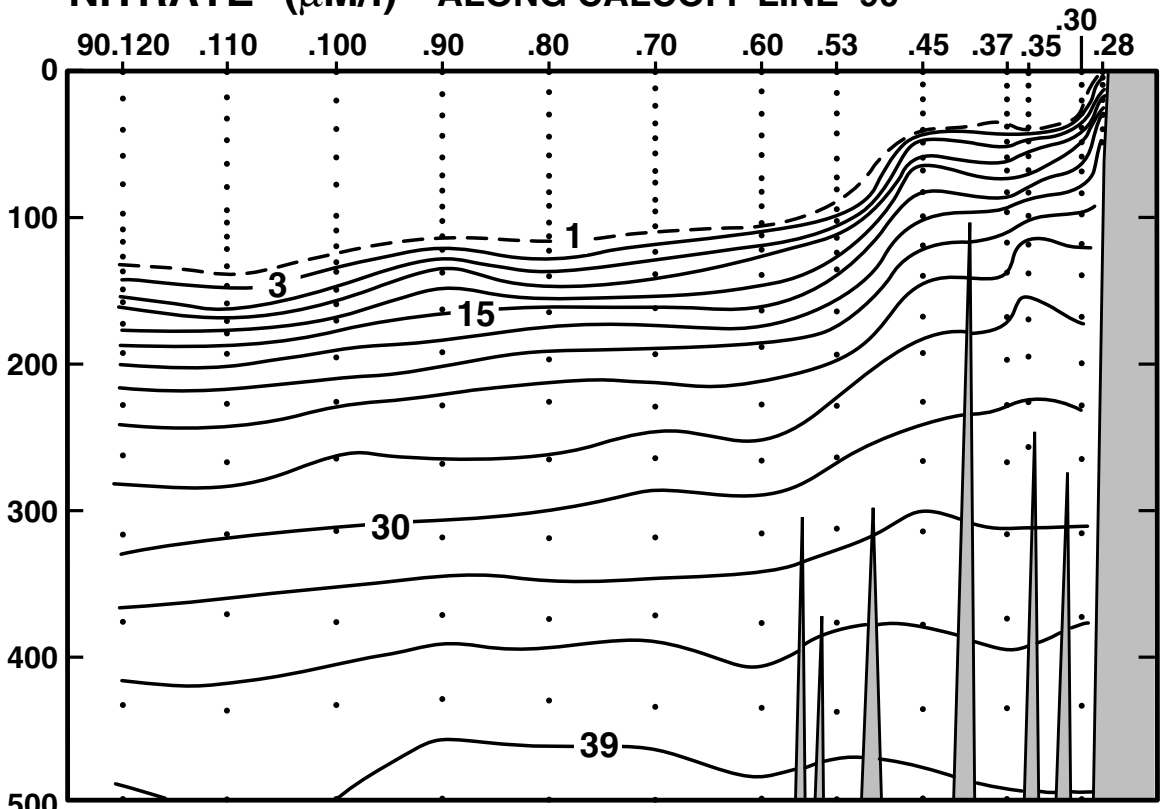


FIGURE 5E

PHOSPHATE (μM/l) ALONG CALCOFI LINE 90

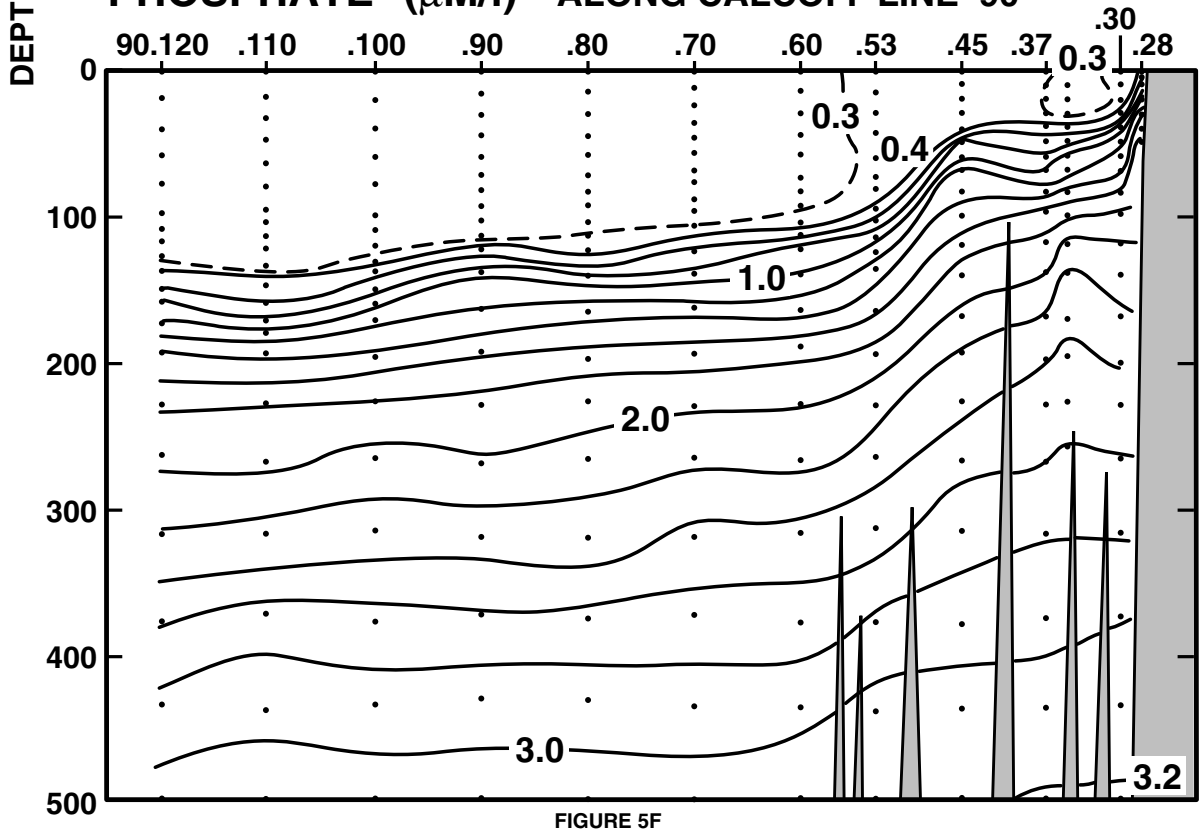


FIGURE 5F

CALCOFI CRUISE 9804

6 - 9 APRIL 1998

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

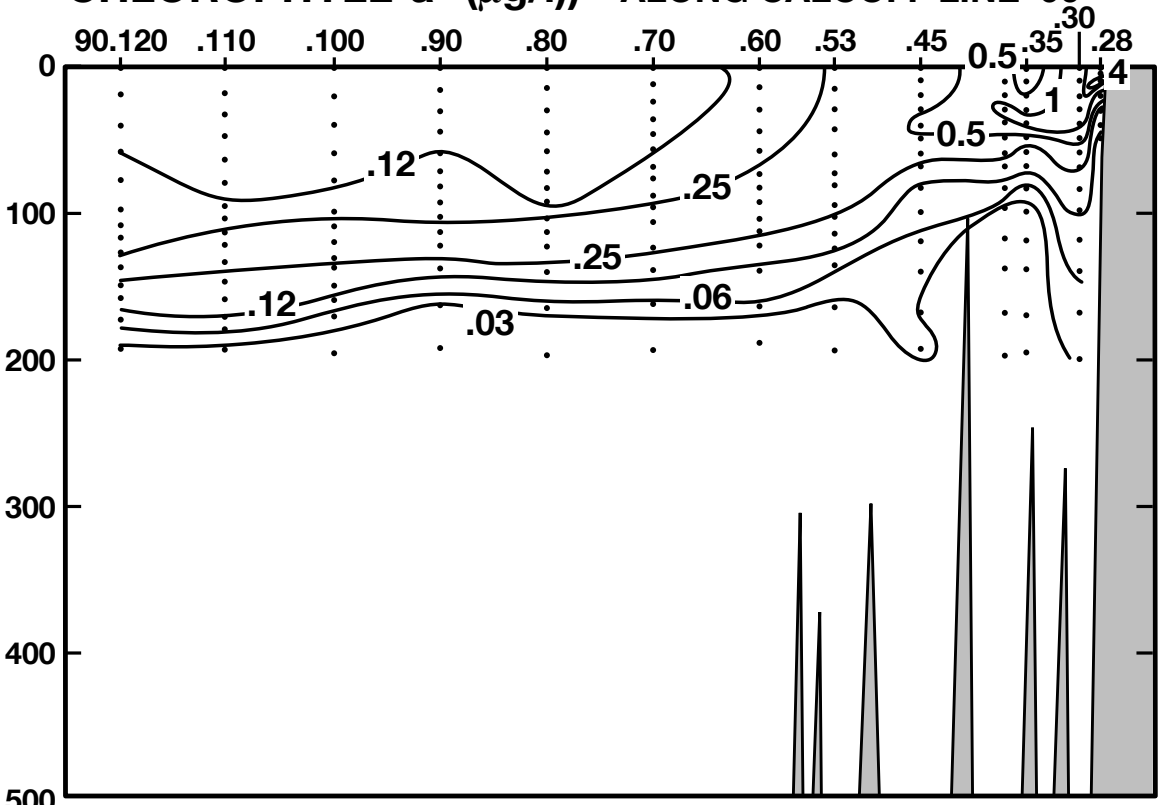


FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

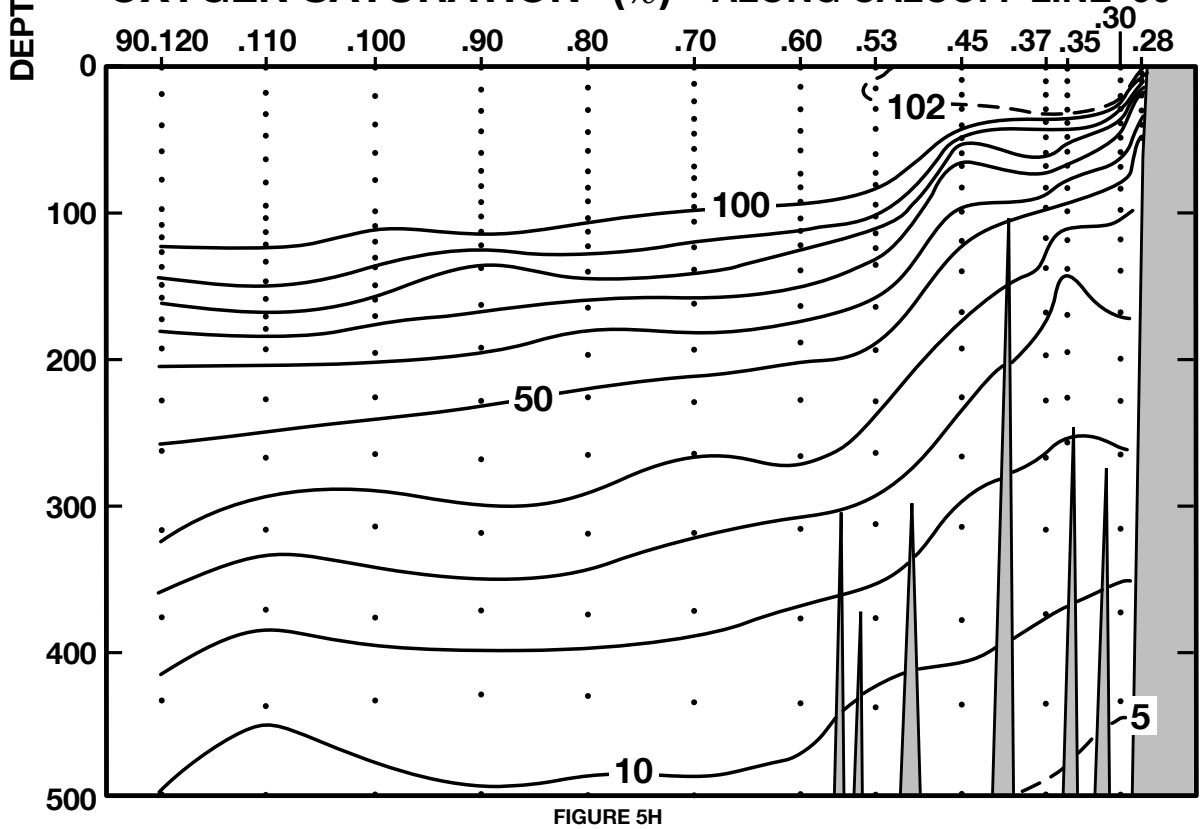


FIGURE 5H

CALCOFI CRUISE 9804

6 - 9 APRIL 1998

OXYGEN (ml/l) ALONG CALCOFI LINE 90

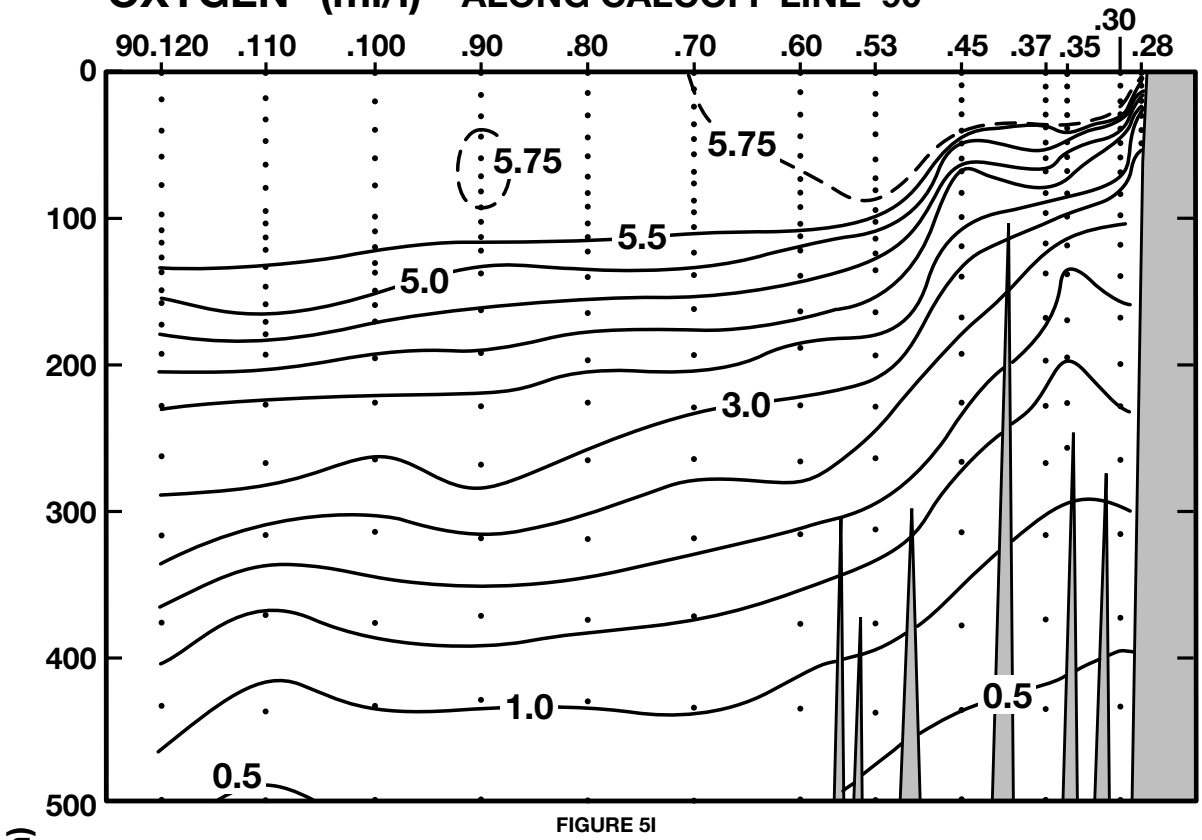


FIGURE 5I

NITRITE (μM/l) ALONG CALCOFI LINE 90

DEPTH (m)

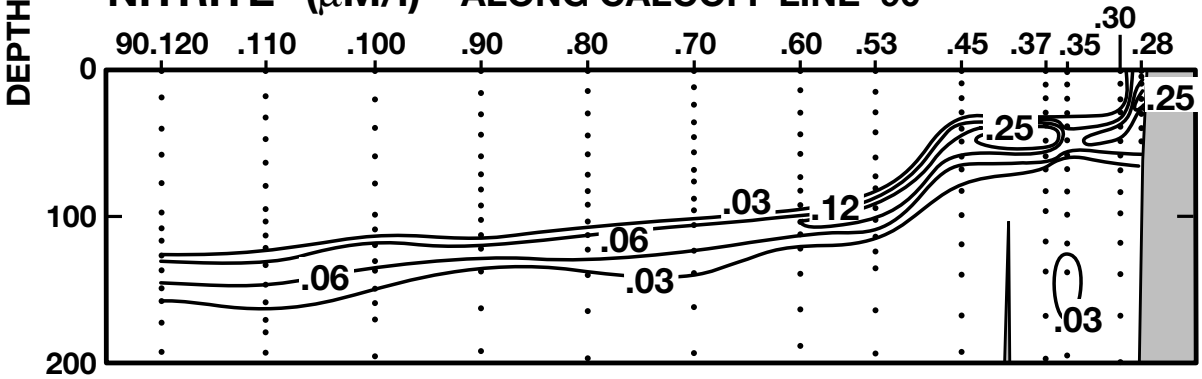


FIGURE 5J

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

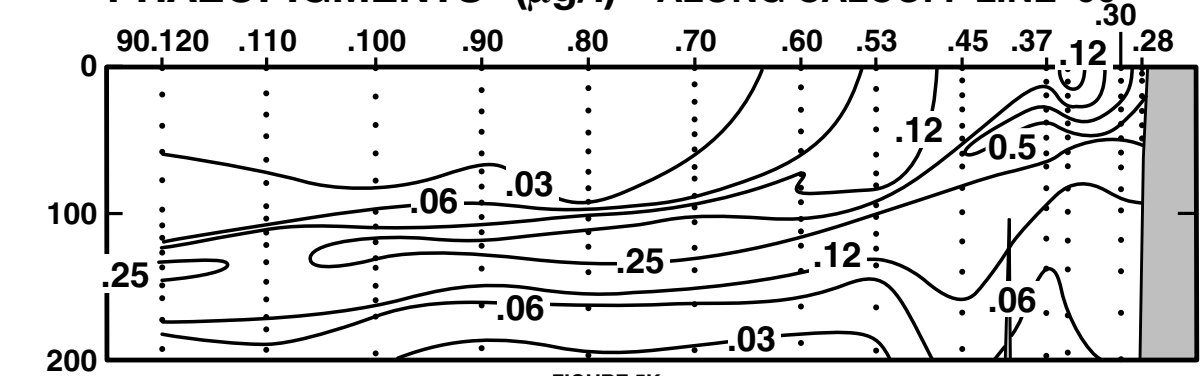


FIGURE 5K

PERSONNEL

CalCOFI Cruise 9804

SHIP'S CAPTAIN

John E. Herring, RV *David Starr Jordan*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participation (Leg)
Griffith, David A. (Chief Scientist)	Fishery Biologist, NMFS	1,2,3
Becker, Susan M.	Staff Research Associate, SIO	1,2,3
Dotson, Ronald C.	Fishery Biologist, NMFS	1,2,3
Gruber, Dennis W.	Marine Technician, SIO	1,2,3
Hays, Amy E.	Fishery Biologist, NMFS	1,2,3
Hyrenbach, K. David	Graduate Student, SIO	1,2
McGinnis, Jean L.	Staff Research Associate, SIO	1,2,3
Mitchell, B. Greg	Associate Research Biologist, SIO	1
Mullin, Michael M.	Director of MLRG, Professor, SIO	1,2,3
Ramirez, Fernando	Staff Research Associate, SIO	2,3
Renger, Edward H.	Staff Research Associate, SIO	1,2,3
Swenson, Daryl L.	Biological Technician, NMFS	1,2,3
Watanabe, Kentaro	Volunteer, SIO	1
Wieland, John D.	Staff Research Associate, SIO	2,3
Wilkinson, James R.	Programmer/Analyst, SIO	1,2,3

Leg 1: San Diego to Dana Point, Ca., 2 Apr. - 8 Apr. 1998
Leg 2: Dana Point to Port San Luis, Ca., 8 Apr. - 17 Apr. 1998
Leg 3: Port San Luis to San Diego, Ca., 17 Apr. - 23 Apr. 1998

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 67 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
36 49.2 N	121 59.0 W	21/04/98	0930 UTC	377 m	350 04 kn			1017.2 mb	13.1 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	12.66	12.66	33.089	24.980	296.7	0.000	6.80	112.6	0.7	0.35	0.1	0.03	12.54	2.63	0	
2		12.66	12.66	33.089	24.980	296.7	0.006	6.80	112.6	0.7	0.35	0.1	0.03	12.54	2.63	2	219
10		12.13	12.13	33.212	25.177	278.2	0.029	5.90	96.7	4.9	0.70	5.1	0.16	9.88	1.89	10	218
20		10.36	10.36	33.615	25.810	218.2	0.054	3.41	53.9	21.3	1.60	19.2	0.17	0.49	0.81	20	217
29		9.74	9.74	33.782	26.045	196.0	0.072	2.99	46.7	26.0	1.84	22.9	0.15	0.22	0.66	29	216
30	ISL	9.69	9.69	33.793	26.062	194.4	0.074	2.96	46.2	26.4	1.85	23.2	0.15	0.22	0.64	30	
40		9.32	9.32	33.874	26.186	182.8	0.093	2.71	41.9	29.3	1.96	25.0	0.13	0.17	0.49	40	215
49		9.06	9.05	33.937	26.277	174.3	0.109	2.54	39.1	31.5	2.06	26.4	0.06	0.13	0.49	49	214
50	ISL	9.03	9.02	33.943	26.287	173.5	0.111	2.52	38.8	31.8	2.07	26.5	0.06	0.13	0.49	50	
59		8.84	8.83	33.981	26.347	167.9	0.126	2.41	36.9	33.7	2.13	27.4	0.04	0.09	0.43	59	213
69		8.75	8.74	33.996	26.373	165.7	0.143	2.39	36.5	34.0	2.15	27.8	0.03	0.06	0.31	69	212
75	ISL	8.66	8.65	34.007	26.396	163.6	0.153	2.36	36.0	34.9	2.17	28.0	0.03	0.06	0.32	75	
84		8.53	8.52	34.021	26.427	160.8	0.168	2.31	35.2	36.5	2.20	28.4	0.02	0.07	0.33	85	211
99		8.40	8.39	34.028	26.452	158.6	0.191	2.27	34.4	37.7	2.22	29.0	0.02	0.05	0.23	100	210
100	ISL	8.39	8.38	34.028	26.454	158.5	0.193	2.27	34.4	37.8	2.22	29.0	0.02	0.05	0.23	101	
119		8.20	8.19	34.037	26.490	155.4	0.223	2.26	34.1	39.6	2.26	29.5	0.02	0.04	0.22	120	209
125	ISL	8.16	8.15	34.037	26.496	154.9	0.232	2.25	34.0	40.3	2.27	29.7	0.02	0.04	0.22	126	
139		8.05	8.04	34.036	26.512	153.6	0.254	2.22	33.4	41.8	2.30	30.1	0.02	0.04	0.22	140	208
150	ISL	7.89	7.88	34.035	26.535	151.6	0.271	2.21	33.1	42.7	2.31	30.4	0.02	0.04	0.21	151	
168		7.64	7.62	34.037	26.573	148.2	0.298	2.19	32.7	44.3	2.34	31.0	0.02	0.03	0.18	169	207
198		7.48	7.46	34.049	26.605	145.6	0.342	2.02	30.0	47.8	2.42	31.9	0.02	0.04	0.12	199	206
200	ISL	7.46	7.44	34.049	26.608	145.3	0.345	2.02	30.0	47.9	2.42	31.9	0.02			201	
228		7.24	7.22	34.052	26.642	142.5	0.385	1.96	29.0	49.9	2.46	32.5	0.02			230	205
250	ISL	7.07	7.05	34.066	26.677	139.5	0.416	1.81	26.6	53.2	2.53	33.3	0.03			252	
269		6.94	6.91	34.080	26.706	137.0	0.442	1.67	24.5	56.2	2.59	34.1	0.04			271	204
300	ISL	6.76	6.73	34.091	26.739	134.2	0.484	1.53	22.4	59.2	2.65	35.0	0.04			302	
318		6.64	6.61	34.098	26.761	132.3	0.508	1.45	21.1	61.1	2.69	35.5	0.04			320	203
378		5.93	5.90	34.151	26.895	120.0	0.584	0.97	13.9	73.7	2.91	38.5	0.03			381	202
391		5.89	5.86	34.160	26.907	119.0	0.599	0.97	13.9	74.9	2.93	38.7	0.04			394	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 67 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
36 47.2 N	122 3.1 W	21/04/98	1131 UTC	217 m	340 06 kn			1016.9 mb	13.5 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	12.43	12.43	33.111	25.041	290.8	0.000	5.92	97.6	5.0	0.61	4.1	0.19	7.91	2.02	0	
1		12.43	12.43	33.111	25.041	290.9	0.003	5.92	97.6	5.0	0.61	4.1	0.19	7.91	2.02	1	214
2		12.47	12.47	33.103	25.027	292.2	0.006	5.91	97.5	5.0	0.60	4.1	0.19	8.34	2.39	2	215
10		12.08	12.08	33.167	25.151	280.6	0.029	5.74	93.9	7.2	0.76	5.8	0.23	6.70	1.93	10	213
20		11.00	11.00	33.419	25.545	243.4	0.055	4.47	71.6	17.4	1.37	14.5	0.33	0.76	0.99	20	212
30		9.92	9.92	33.675	25.932	206.8	0.077	3.24	50.8	25.1	1.75	21.1	0.13	0.38	0.94	30	211
40		9.50	9.50	33.797	26.097	191.3	0.097	2.89	44.9	28.3	1.90	23.6	0.09	0.29	0.77	40	210
50		9.35	9.34	33.852	26.164	185.1	0.116	2.79	43.2	28.4	1.96	24.6	0.08	0.20	0.64	50	209
59		9.16	9.15	33.903	26.235	178.6	0.133	2.70	41.6	29.8	2.01	25.6	0.08	0.20	0.67	59	208
70		9.03	9.02	33.941	26.286	174.0	0.152	2.57	39.5	31.1	2.06	26.3	0.07	0.14	0.56	70	207
75	ISL	9.00	8.99	33.954	26.301	172.6	0.161	2.53	38.9	31.6	2.08	26.5	0.07	0.13	0.52	75	
84		8.95	8.94	33.971	26.322	170.8	0.176	2.48	38.1	32.5	2.10	26.9	0.06	0.11	0.48	84	206
99		8.83	8.82	33.981	26.349	168.5	0.201	2.43	37.2	33.7	2.11	27.3	0.06	0.10	0.45	100	205
100	ISL	8.81	8.80	33.983	26.354	168.1	0.203	2.42	37.0	33.9	2.11	27.4	0.06	0.10	0.44	101	
119		8.43	8.42	34.024	26.445	159.7	0.234	2.32	35.2	37.0	2.21	28.7	0.06	0.07	0.34	120	204
125	ISL	8.37	8.36	34.029	26.458	158.6	0.244	2.30	34.9	37.7	2.23	28.9	0.06	0.06	0.32	126	
139		8.25	8.24	34.032	26.479	156.8	0.266	2.25	34.0	39.3	2.26	29.2	0.06	0.05	0.28	140	203
150	ISL	8.10	8.08	34.034	26.503	154.7	0.283	2.23	33.6	40.7	2.28	29.6	0.06	0.04	0.23	151	
169		7.81	7.79	34.037	26.548	150.7	0.312	2.21	33.1	43.2	2.31	30.5	0.05	0.04	0.16	170	202
200	ISL	7.35	7.33	34.039	26.616	144.6	0.358	2.13	31.5	47.4	2.39	31.7	0.04	0.03	0.14	201	
207		7.25	7.23	34.040	26.631	143.2	0.368	2.11	31.2	48.4	2.41	32.0	0.04	0.03	0.14	208	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 67 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
36 37.2 N	122 25.0 W	21/04/98	1501 UTC	2620 m	340 13 kn	340 03 09	1	1016.2 mb	14.2 C	13.1 C		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	12.60	12.60	32.404	24.461	346.1	0.000	6.63	109.2	1.4	0.24	0.0	0.00	3.64	1.03	0	
1		12.60	12.60	32.404	24.461	346.1	0.003	6.63	109.2	1.4	0.24	0.0	0.00	3.64	1.03	1	220
9		12.60	12.60	32.445	24.493	343.3	0.031	6.58	108.4	1.6	0.30	0.0	0.01	3.95	1.14	9	219
10	ISL	12.61	12.61	32.467	24.508	341.9	0.034	6.55	107.9	1.7	0.30	0.0	0.01	3.82	1.10	10	
19		12.65	12.65	32.681	24.666	327.0	0.065	6.29	103.9	2.4	0.32	0.1	0.01	2.15	0.62	19	218
20	ISL	12.70	12.70	32.705	24.675	326.2	0.068	6.26	103.5	2.4	0.32	0.1	0.01	1.94	0.57	20	
29		13.04	13.04	32.869	24.736	320.7	0.097	6.09	101.5	2.1	0.34	0.0	0.00	0.45	0.22	29	217
30	ISL	13.03	13.03	32.872	24.740	320.3	0.100	6.09	101.5	2.1	0.34	0.0	0.00	0.45	0.23	30	
39		12.78	12.77	32.859	24.779	316.8	0.129	6.06	100.4	2.2	0.37	0.1	0.08	0.50	0.29	39	216
49		12.54	12.53	32.888	24.849	310.4	0.160	5.91	97.5	2.6	0.44	0.9	0.28	0.42	0.31	49	215
50	ISL	12.52	12.51	32.893	24.856	309.7	0.163	5.90	97.3	2.7	0.45	1.0	0.28	0.45	0.31	50	
59		12.31	12.30	32.946	24.938	302.2	0.191	5.82	95.6	3.9	0.53	2.3	0.21	1.08	0.42	59	214
70		11.96	11.95	33.007	25.051	291.6	0.223	5.82	94.9	5.5	0.63	3.7	0.14	2.86	0.90	70	213
75	ISL	11.65	11.64	33.095	25.177	279.7	0.238	5.52	89.4	7.0	0.76	5.9	0.11	2.08	0.71	75	
84		11.02	11.01	33.279	25.434	255.4	0.262	4.89	78.3	10.3	1.01	10.5	0.08	0.19	0.23	84	212
99		10.05	10.04	33.499	25.774	223.3	0.298	4.51	70.8	15.3	1.28	15.2	0.07	0.09	0.22	99	211
100	ISL	9.99	9.98	33.506	25.789	221.8	0.300	4.49	70.4	15.6	1.30	15.5	0.07	0.09	0.22	100	
118		9.22	9.21	33.602	25.991	202.9	0.338	4.12	63.5	21.1	1.55	19.7	0.07	0.03	0.13	119	210
125	ISL	9.09	9.08	33.673	26.067	195.8	0.352	3.88	59.7	23.3	1.64	21.1	0.07	0.03	0.13	126	
139		8.96	8.95	33.814	26.198	183.6	0.379	3.39	52.0	27.2	1.81	23.5	0.07	0.03	0.12	140	209
150	ISL	8.84	8.82	33.879	26.268	177.2	0.399	3.12	47.8	29.5	1.92	24.9	0.07	0.03	0.11	151	
168		8.63	8.61	33.938	26.348	170.0	0.430	2.84	43.3	32.5	2.04	26.7	0.07	0.03	0.10	169	208
198		8.08	8.06	33.961	26.449	160.7	0.479	2.81	42.3	36.5	2.11	28.3	0.07	0.03	0.14	199	207
200	ISL	8.05	8.03	33.963	26.455	160.1	0.483	2.80	42.1	36.8	2.12	28.4	0.07			201	
228		7.62	7.60	33.989	26.539	152.5	0.526	2.66	39.6	40.5	2.21	29.8	0.06			229	206
250	ISL	7.31	7.29	34.008	26.598	147.1	0.559	2.48	36.7	44.0	2.30	30.9	0.06			252	
267		7.09	7.06	34.022	26.640	143.3	0.584	2.31	34.0	47.0	2.38	31.8	0.06			269	205
300	ISL	6.78	6.75	34.049	26.703	137.6	0.630	1.88	27.5	53.4	2.55	34.0	0.06			302	
317		6.63	6.60	34.059	26.732	135.1	0.654	1.66	24.2	56.8	2.64	35.1	0.06			319	204
378		5.89	5.86	34.070	26.836	125.5	0.733	1.21	17.3	68.6	2.86	38.4	0.06			381	203
400	ISL	5.76	5.73	34.088	26.866	122.8	0.760	1.05	15.0	71.7	2.92	39.1	0.06			403	
437		5.61	5.57	34.129	26.917	118.3	0.805	0.81	11.5	76.3	3.02	40.0	0.06			440	202
500	ISL	5.41	5.37	34.211	27.007	110.5	0.877	0.50	7.1	84.4	3.15	41.3	0.06			504	
515		5.36	5.32	34.231	27.029	108.6	0.893	0.42	5.9	86.3	3.18	41.6	0.06			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 67 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
36 27.1 N	122 46.2 W	21/04/98	1843 UTC	2925 m	340 14 kn	340 04 06	0	1016.2 mb	16.0 C	14.5 C	09m 04	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.33	13.33	31.965	23.978	392.1	0.000	6.48	108.1	1.0	0.19	0.1	0.00	1.54	0.38	0	
2		13.33	13.33	31.956	23.972	392.8	0.008									2	223
2	A	13.33	13.33	31.965	23.979	392.2	0.008	6.48	108.1	1.0	0.19	0.1	0.00	1.54	0.38	2	222
7	A	13.28	13.28	31.976	23.997	390.5	0.027	6.48	107.9	1.0	0.17	0.0	0.00	1.49	0.46	7	221
10	ISL	13.27	13.27	32.190	24.165	374.6	0.039	6.40	106.7	1.0	0.19	0.0	0.00	1.18	0.37	10	
14	A	13.26	13.26	32.506	24.411	351.2	0.053	6.28	104.9	0.9	0.24	0.0	0.00	0.75	0.21	14	220
19	A	13.23	13.23	32.652	24.530	340.0	0.071	6.20	103.6	0.9	0.27	0.0	0.00	0.58	0.15	19	219
20	ISL	13.23	13.23	32.675	24.548	338.3	0.074	6.19	103.5	0.9	0.28	0.0	0.00	0.54	0.14	20	
25	A	13.21	13.21	32.764	24.621	331.5	0.091	6.15	102.8	0.9	0.31	0.1	0.00	0.38	0.11	25	218
30	ISL	13.19	13.19	32.818	24.667	327.3	0.107	6.12	102.3	1.1	0.33	0.1	0.00	0.29	0.09	30	
34	A	13.18	13.18	32.843	24.688	325.4	0.120	6.10	101.9	1.3	0.33	0.1	0.00	0.26	0.09	34	217
42		13.18	13.17	32.863	24.704	324.1	0.146	6.08	101.6	1.4	0.33	0.1	0.00	0.27	0.09	42	216
50		13.18	13.17	32.864	24.705	324.2	0.172	6.08	101.6	1.4	0.33	0.1	0.00	0.28	0.10	50	215
58		13.19	13.18	32.875	24.712	323.8	0.198	6.07	101.5	1.4	0.33	0.1	0.00	0.28	0.10	58	214
70		13.24	13.23	32.920	24.737	321.7	0.237	6.01	100.6	1.7	0.33	0.1	0.01	0.38	0.20	70	213
75	ISL	13.17	13.16	32.919	24.750	320.6	0.253	5.97	99.8	1.8	0.35	0.2	0.04	0.41	0.24	75	
85		13.04	13.03	32.916	24.774	318.6	0.285	5.90	98.3	2.1	0.38	0.5	0.09	0.46	0.30	85	212
99		11.84	11.83	33.182	25.210	277.2	0.327	5.13	83.5	7.4	0.83	7.3	0.08	0.29	0.27	99	211
100	ISL	11.76	11.75	33.194	25.234	274.9	0.329	5.09	82.7	7.8	0.86	7.7	0.08	0.28	0.27	100	
119		10.58	10.57	33.375	25.587	241.6	0.378	4.47	70.9	14.4	1.25	14.0	0.08	0.14	0.17	120	210
125	ISL	10.33	10.32	33.445	25.685	232.4	0.393	4.26	67.2	16.0	1.36	15.9	0.08	0.11	0.15	126	
140		9.80	9.78	33.612	25.905	211.7	0.426	3.80	59.3	19.8	1.59	19.9	0.09	0.05	0.10	141	209
150	ISL	9.36	9.34	33.700	26.046	198.4	0.446	3.65	56.5	22.8	1.70	21.8	0.09	0.03	0.08	151	
168		8.67	8.65	33.826	26.254	178.8	0.480	3.48	53.0	28.0	1.84	24.3	0.09	0.01	0.06	169	208
199		8.24	8.22	33.946	26.414	164.1	0.534	3.03	45.8	33.7	2.01	27.1	0.09	0.01	0.04	200	207
200	ISL	8.23	8.21	33.948	26.417	163.8	0.535	3.03	45.8	33.9	2.01	27.1	0.09			201	
229		7.80	7.78	33.991	26.514	154.9	0.581	2.92	43.7	38.1	2.10	28.3	0.09			230	206
250	ISL	7.52	7.50	34.005	26.566	150.2	0.614	2.69	40.0	41.4	2.20	29.7	0.09			251	
268		7.29	7.26	34.010	26.603	147.0	0.640	2.48	36.7	44.3	2.30	30.9	0.09			270	205
300	ISL	6.83	6.80	34.007	26.664	141.4	0.686	2.27	33.2	49.7	2.42	32.7	0.09			302	
316		6.63	6.60	34.009	26.692	138.8	0.709	2.16	31.4	52.4	2.48	33.5	0.09			318	204
378		6.46	6.43	34.113	26.797	129.7	0.792	1.19	17.3	62.7	2.81	37.0	0.08			380	203
400	ISL	6.31	6.27	34.134	26.833	126.4	0.820	1.00	14.5	66.2	2.89	37.9	0.09			403	
436		6.04	6.00	34.161	26.890	121.4	0.865	0.79	11.4	71.6	3.00	39.1	0.10			439	202
500	ISL	5.71	5.67	34.203	26.964	114.8	0.940	0.53	7.6	79.5	3.11	40.6	0.09			503	
515		5.63	5.59	34.213	26.982	113.3	0.958	0.47	6.7	81.3	3.14	40.9	0.09			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 67 65

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
36 17.2 N	123 7.8 W	21/04/98	2308 UTC	3249 m	330 18 kn	340 04 04	0	1014.8 mb	15.8 C	14.2 C	18m 02	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.18	14.18	32.840	24.482	344.1	0.000	6.06	103.4	1.7	0.28	0.1	0.00	0.36	0.06	0	
3		14.18	14.18	32.840	24.482	344.2	0.010	6.06	103.4	1.7	0.28	0.1	0.00	0.36	0.06	3	220
10	ISL	14.13	14.13	32.844	24.495	343.1	0.034	6.06	103.3	1.7	0.28	0.1	0.00	0.37	0.06	10	
16		14.08	14.08	32.851	24.511	341.7	0.055	6.06	103.2	1.7	0.27	0.1	0.00	0.38	0.07	16	219
20	ISL	14.06	14.06	32.857	24.520	341.0	0.069	6.06	103.1	1.7	0.27	0.1	0.00	0.42	0.08	20	
30	ISL	14.02	14.02	32.873	24.541	339.3	0.103	6.07	103.2	1.7	0.27	0.1	0.00	0.49	0.11	30	
31		14.02	14.02	32.875	24.543	339.2	0.106	6.07	103.2	1.7	0.27	0.1	0.00	0.50	0.11	31	218
45		14.20	14.19	33.151	24.719	322.8	0.152	5.95	101.7	2.2	0.31	0.1	0.00	0.41	0.18	45	217
50	ISL	14.16	14.15	33.217	24.778	317.3	0.168	5.90	100.8	2.3	0.32	0.1	0.03	0.73	0.44	50	
55		14.06	14.05	33.259	24.832	312.4	0.184	5.83	99.5	2.5	0.35	0.1	0.06	0.99	0.66	55	216
65		13.64	13.63	33.248	24.910	305.2	0.215	5.56	94.0	3.8	0.47	2.0	0.11	0.55	0.45	65	215
74		13.07	13.06	33.295	25.061	291.0	0.242	5.26	87.9	5.4	0.65	4.8	0.09	0.37	0.36	74	214
75	ISL	12.99	12.98	33.296	25.078	289.4	0.245	5.23	87.3	5.7	0.67	5.1	0.09	0.35	0.35	75	
85		12.18	12.17	33.315	25.249	273.2	0.273	4.89	80.2	8.7	0.89	8.4	0.08	0.23	0.26	85	212
94		11.44	11.43	33.401	25.454	253.9	0.297	4.63	74.8	10.9	1.08	11.8	0.09	0.17	0.23	94	213
100	ISL	11.08	11.07	33.443	25.552	244.7	0.311	4.47	71.7	12.5	1.19	13.5	0.09	0.13	0.19	100	
110		10.61	10.60	33.512	25.688	231.8	0.335	4.20	66.7	15.2	1.35	16.0	0.08	0.08	0.12	111	211
125		10.06	10.05	33.665	25.902	211.7	0.369	3.71	58.3	19.3	1.57	19.5	0.08	0.01	0.06	126	210
144		9.70	9.68	33.754	26.032	199.7	0.408	3.37	52.5	22.7	1.71	21.8	0.08	0.01	0.05	145	209
150	ISL	9.54	9.52	33.790	26.087	194.6	0.419	3.23	50.2	24.2	1.77	22.7	0.08	0.01	0.05	151	
170		9.03	9.01	33.902	26.257	178.7	0.457	2.82	43.4	29.1	1.96	25.6	0.08	0.00	0.04	171	208
199		8.55	8.53	33.981	26.394	166.1	0.507	2.66	40.5	33.5	2.07	27.4	0.08	0.00	0.03	200	207
200	ISL	8.54	8.52	33.984	26.398	165.8	0.508	2.65	40.3	33.7	2.07	27.5	0.08			201	
227		8.24	8.22	34.054	26.499	156.6	0.552	2.37	35.8	37.9	2.20	29.0	0.08			228	206
250	ISL	8.06	8.03	34.095	26.558	151.3	0.587	2.09	31.5	41.4	2.32	30.2	0.08			251	
266		7.94	7.91	34.115	26.592	148.3	0.611	1.89	28.4	43.8	2.41	31.0	0.08			268	205
300	ISL	7.63	7.60	34.142	26.659	142.4	0.661	1.57	23.4	48.7	2.55	32.5	0.07			302	
318		7.44	7.41	34.149	26.692	139.5	0.686	1.43	21.2	51.4	2.61	33.3	0.07			320	204
377		6.75	6.72	34.157	26.794	130.3	0.766	1.05	15.3	61.3	2.81	36.1	0.07			379	203
400	ISL	6.52	6.48	34.168	26.833	126.7	0.795	0.91	13.2	65.2	2.87	37.2	0.07			403	
438		6.20	6.16	34.189	26.891	121.4	0.842	0.71	10.2	71.2	2.96	38.7	0.07			441	202
500	ISL	5.85	5.81	34.208	26.951	116.3	0.916	0.54	7.7	77.6	3.06	39.9	0.07			504	
516		5.76	5.72	34.213	26.966	114.9	0.935	0.49	7.0	79.2	3.08	40.2	0.07			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 67 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
36 7.4 N	123 29.1 W	22/04/98	0335 UTC	3560 m	330 17 kn	330 03 04		1014.0 mb	14.2 C	13.2 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	14.301	14.301	32.999	24.579	334.8	0.000	6.00	102.7	1.8	0.31	0.1	0.00	0.34	0.07	0	
2		14.301	14.301	32.999	24.579	334.9	0.007	6.00	102.7	1.8	0.31	0.1	0.00	0.34	0.07	2	221
10	ISL	14.300	14.299	32.999	24.580	335.1	0.033	6.01	102.9	1.7	0.30	0.1	0.00	0.33	0.07	10	
15		14.30	14.30	32.999	24.580	335.2	0.050	6.02	103.1	1.7	0.30	0.1	0.00	0.33	0.07	15	220
20	ISL	14.28	14.28	33.001	24.586	334.8	0.067	6.02	103.0	1.7	0.30	0.1	0.00	0.33	0.07	20	
30		14.25	14.25	33.007	24.597	334.0	0.100	6.02	103.0	1.8	0.30	0.1	0.00	0.35	0.08	30	219
43		14.23	14.22	33.023	24.614	332.8	0.144	6.02	102.9	1.8	0.30	0.1	0.00	0.40	0.09	43	218
50	ISL	14.25	14.24	33.074	24.649	329.6	0.167	6.00	102.7	1.8	0.31	0.1	0.00	0.39	0.12	50	
53		14.25	14.24	33.101	24.670	327.7	0.177	5.99	102.5	1.8	0.31	0.1	0.00	0.39	0.14	53	217
64		14.20	14.19	33.210	24.765	319.0	0.212	5.91	101.1	2.0	0.33	0.1	0.00	0.62	0.33	64	216
74		14.06	14.05	33.241	24.818	314.2	0.244	5.80	98.9	2.3	0.38	0.1	0.25	0.71	0.42	74	215
75	ISL	14.02	14.01	33.247	24.831	313.0	0.247	5.77	98.4	2.4	0.39	0.3	0.25	0.69	0.42	75	
83		13.59	13.58	33.298	24.959	301.0	0.272	5.48	92.6	3.6	0.52	2.4	0.25	0.47	0.43	83	214
94		12.95	12.94	33.329	25.112	286.7	0.304	5.16	86.1	5.8	0.70	5.7	0.03	0.34	0.40	94	213
100	ISL	12.39	12.38	33.337	25.227	275.8	0.321	4.98	82.1	7.3	0.84	7.9	0.03	0.28	0.37	100	
111		11.35	11.34	33.387	25.460	253.7	0.350	4.62	74.5	10.7	1.11	12.0	0.03	0.18	0.29	112	212
125		10.48	10.47	33.570	25.756	225.6	0.384	4.12	65.3	15.8	1.38	16.6	0.01	0.06	0.09	126	211
145		9.58	9.56	33.753	26.051	197.9	0.426	3.42	53.2	22.8	1.70	22.2	0.01	0.00	0.04	146	210
150	ISL	9.46	9.44	33.779	26.091	194.1	0.436	3.33	51.7	23.8	1.75	22.9	0.01	0.00	0.04	151	
169		9.15	9.13	33.852	26.199	184.2	0.472	3.08	47.5	26.8	1.88	24.5	0.01	0.01	0.03	170	209
199		8.68	8.66	33.971	26.366	168.8	0.525	2.67	40.7	32.2	2.08	27.2	0.01	0.00	0.03	200	208
200	ISL	8.67	8.65	33.974	26.370	168.4	0.526	2.66	40.6	32.4	2.08	27.3	0.01			201	
227		8.32	8.30	34.034	26.471	159.2	0.571	2.45	37.1	36.2	2.18	28.7	0.01			228	207
250	ISL	8.06	8.03	34.063	26.533	153.7	0.607	2.25	33.9	39.7	2.27	29.9	0.01			251	
268		7.86	7.83	34.076	26.573	150.1	0.634	2.10	31.5	42.3	2.34	30.8	0.01			270	206
300	ISL	7.51	7.48	34.085	26.631	144.9	0.681	1.94	28.8	46.4	2.45	32.0	0.01			302	
318		7.33	7.30	34.085	26.657	142.7	0.707	1.87	27.7	48.6	2.52	32.7	0.01			320	204
318		7.33	7.30	34.089	26.660	142.4	0.707	1.85	27.4	48.7	2.51	32.7	0.01			320	205
378		6.80	6.76	34.132	26.767	132.8	0.790	1.24	18.1	58.6	2.77	35.9	0.01			380	203
400	ISL	6.54	6.50	34.139	26.807	129.1	0.818	1.08	15.7	62.9	2.86	37.0	0.01			403	
438		6.12	6.08	34.154	26.874	123.0	0.866	0.85	12.2	70.3	3.00	38.6	0.01			441	202
500	ISL	5.75	5.71	34.212	26.967	114.7	0.940	0.52	7.4	79.3	3.13	40.3	0.01			503	
513		5.67	5.63	34.225	26.987	112.9	0.955	0.45	6.4	81.2	3.16	40.7	0.01			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 67 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
35 46.8 N	124 11.4 W	22/04/98	0909 UTC	3947 m	350 13 kn			1014.1 mb	13.9 C	12.5 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	13.97	13.97	32.907	24.577	335.1	0.000	6.04	102.7	1.9	0.31	0.1	0.00	0.34	0.10	0	
3		13.97	13.97	32.907	24.577	335.1	0.010	6.04	102.7	1.9	0.31	0.1	0.00	0.34	0.10	3	220
10	ISL	13.96	13.96	32.908	24.580	335.0	0.034	6.05	102.8	1.9	0.31	0.1	0.00	0.34	0.09	10	
15		13.96	13.96	32.908	24.580	335.2	0.050	6.05	102.8	1.9	0.31	0.1	0.00	0.34	0.09	15	219
20	ISL	14.00	14.00	32.932	24.591	334.3	0.067	6.04	102.7	1.9	0.31	0.1	0.00	0.35	0.10	20	
29		14.05	14.05	32.977	24.615	332.2	0.097	6.03	102.7	1.9	0.31	0.1	0.00	0.37	0.11	29	218
30	ISL	14.04	14.04	32.977	24.617	332.0	0.100	6.03	102.7	1.9	0.31	0.1	0.00	0.37	0.11	30	
44		13.96	13.95	32.981	24.637	330.5	0.147	6.03	102.5	1.9	0.32	0.1	0.00	0.38	0.13	44	217
50	ISL	13.86	13.85	32.971	24.651	329.4	0.166	6.02	102.1	1.9	0.33	0.1	0.00	0.37	0.17	50	
54		13.75	13.74	32.965	24.668	327.8	0.180	6.02	101.9	1.9	0.33	0.1	0.00	0.37	0.20	54	216
65		13.23	13.22	32.967	24.775	317.9	0.215	5.87	98.3	2.4	0.41	0.4	0.13	0.80	0.57	65	215
74		13.21	13.20	33.111	24.891	307.2	0.243	5.57	93.3	3.8	0.54	2.5	0.13	0.57	0.52	74	214
75	ISL	13.17	13.16	33.115	24.902	306.1	0.246	5.54	92.7	4.0	0.55	2.8	0.12	0.56	0.52	75	
85		12.54	12.53	33.164	25.063	290.9	0.276	5.16	85.2	7.0	0.75	6.1	0.05	0.42	0.48	85	213
94		11.74	11.73	33.331	25.344	264.3	0.301	4.64	75.4	11.0	1.05	10.7	0.03	0.16	0.21	94	212
100	ISL	11.38	11.37	33.371	25.442	255.2	0.317	4.55	73.4	11.9	1.13	11.9	0.03	0.13	0.18	100	
110		10.90	10.89	33.406	25.555	244.5	0.342	4.49	71.7	13.0	1.21	13.3	0.03	0.08	0.14	111	211
125		10.14	10.13	33.558	25.805	220.9	0.377	3.92	61.6	18.8	1.52	18.2	0.03	0.06	0.15	126	210
144		9.12	9.10	33.713	26.094	193.6	0.416	3.89	59.9	23.1	1.64	21.2	0.02	0.02	0.07	145	209
150	ISL	9.07	9.05	33.772	26.148	188.6	0.428	3.68	56.6	24.7	1.72	22.3	0.02	0.02	0.07	151	
169		8.90	8.88	33.886	26.265	177.9	0.462	2.97	45.5	29.7	1.98	25.6	0.02	0.03	0.09	170	208
199		8.42	8.40	33.961	26.398	165.7	0.514	2.74	41.6	34.4	2.10	27.7	0.03	0.02	0.07	200	207
200	ISL	8.41	8.39	33.963	26.401	165.4	0.516	2.73	41.4	34.6	2.10	27.8	0.03			201	
229		8.02	8.00	34.022	26.506	155.8	0.562	2.47	37.1	39.0	2.23	29.4	0.03			230	206
250	ISL	7.80	7.78	34.040	26.553	151.6	0.594	2.33	34.9	41.8	2.30	30.3	0.03			251	
265		7.64	7.61	34.044	26.580	149.3	0.617	2.27	33.8	43.6	2.34	30.9	0.03			267	205
300	ISL	7.15	7.12	34.028	26.637	144.2	0.668	2.34	34.5	47.2	2.37	31.7	0.03			302	
315		6.94	6.91	34.020	26.659	142.1	0.690	2.36	34.6	48.9	2.39	32.1	0.03			317	204
375		6.32	6.29	34.043	26.760	133.0	0.772	1.78	25.7	59.0	2.64	35.4	0.03			377	203
400	ISL	6.07	6.04	34.051	26.798	129.5	0.805	1.55	22.3	63.6	2.73	36.8	0.03			403	
436		5.76	5.72	34.068	26.851	124.7	0.851	1.24	17.7	69.9	2.86	38.5	0.03			439	202
500	ISL	5.47	5.43	34.131	26.936	117.2	0.928	0.82	11.6	78.9	3.05	40.4	0.03			503	
515		5.40	5.36	34.146	26.957	115.4	0.946	0.72	10.2	81.0	3.10	40.8	0.03			519	201

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 70 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
36 11.0 N	121 43.6 W	21/04/98	0238 UTC	161 m	290 01 kn	240 03 05	1	1016.7 mb	13.0 C	12.0 C		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	10.63	10.63	33.711	25.838	215.1	0.000	5.04	80.2	20.5	1.50	17.6	0.20	6.36	0.60	0	
1	10.63	10.63	33.711	25.838	215.1	0.002	5.04	80.2	20.5	1.50	17.6	0.20	6.36	0.60	1	213
10	10.17	10.17	33.742	25.941	205.5	0.021	4.26	67.1	22.1	1.62	19.5	0.17	5.26	0.57	10	212
20	9.78	9.78	33.801	26.053	195.0	0.041	3.13	48.9	25.0	1.81	22.4	0.15	1.16	0.34	20	211
30	9.62	9.62	33.840	26.110	189.8	0.060	2.96	46.1	27.0	1.88	23.6	0.14	0.78	0.38	30	210
39	9.61	9.61	33.841	26.113	189.8	0.077	2.97	46.3	27.0	1.87	23.6	0.14	0.75	0.38	39	209
49	9.57	9.56	33.850	26.127	188.7	0.096	2.91	45.3	27.2	1.89	23.8	0.14	0.66	0.40	49	208
50 ISL	9.54	9.53	33.856	26.137	187.8	0.098	2.88	44.8	27.5	1.90	24.0	0.14	0.61	0.39	50	
59	9.27	9.26	33.915	26.227	179.4	0.115	2.63	40.7	30.0	2.02	25.5	0.12	0.17	0.27	59	207
70	9.17	9.16	33.938	26.261	176.3	0.134	2.53	39.0	31.3	2.03	26.0	0.11	0.15	0.22	70	206
75 ISL	9.09	9.08	33.955	26.287	173.9	0.143	2.47	38.0	32.0	2.06	26.5	0.10	0.11	0.20	75	
84	8.95	8.94	33.982	26.331	170.0	0.159	2.39	36.7	33.2	2.12	27.2	0.09	0.05	0.16	85	205
99	8.89	8.88	33.995	26.351	168.4	0.184	2.38	36.5	33.8	2.14	27.3	0.08	0.04	0.16	100	204
100 ISL	8.88	8.87	33.996	26.353	168.2	0.186	2.37	36.3	33.9	2.14	27.3	0.08	0.04	0.16	101	
119	8.62	8.61	34.023	26.415	162.6	0.217	2.23	34.0	36.5	2.23	28.3	0.10	0.04	0.16	120	203
125 ISL	8.56	8.55	34.030	26.430	161.3	0.227	2.19	33.3	37.3	2.25	28.6	0.10	0.04	0.15	126	
140	8.43	8.42	34.045	26.462	158.5	0.251	2.11	32.0	39.0	2.28	29.2	0.10	0.03	0.14	141	202
150 ISL	8.36	8.34	34.051	26.477	157.2	0.267	2.07	31.4	39.9	2.30	29.5	0.10	0.02	0.15	151	
156	8.31	8.29	34.055	26.488	156.3	0.276	2.04	30.9	40.4	2.31	29.6	0.10	0.02	0.15	157	201

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 70 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
36 2.7 N	122 0.6 W	20/04/98	2325 UTC	1293 m	310 22 kn	310 08 04	4	1023.2 mb	14.3 C	13.1 C	10m 04	4/8	

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	12.65	12.65	32.663	24.652	327.9	0.000	6.27	103.5	1.6	0.42	0.6	0.08	2.82	0.77	0	
1	12.65	12.65	32.663	24.652	328.0	0.003	6.27	103.5	1.6	0.42	0.6	0.08	2.82	0.77	1	220
10	12.64	12.64	32.667	24.657	327.7	0.033	6.29	103.8	1.4	0.39	0.3	0.05	3.29	0.94	10	219
20	12.45	12.45	32.707	24.725	321.5	0.065	6.20	102.0	1.4	0.38	0.2	0.05	5.93	1.35	20	218
30	12.29	12.29	32.799	24.827	312.0	0.097	5.94	97.4	2.7	0.53	1.7	0.16	4.89	1.01	30	217
40	12.00	11.99	33.002	25.039	292.0	0.127	5.35	87.3	6.4	0.77	5.6	0.43	0.92	0.61	40	216
50	11.25	11.24	33.315	25.420	256.0	0.155	4.45	71.6	13.0	1.15	12.4	0.23	0.32	0.34	50	215
61	10.70	10.69	33.458	25.630	236.3	0.182	4.09	65.1	16.3	1.34	15.4	0.11	0.22	0.43	61	214
69	9.88	9.87	33.595	25.877	212.9	0.200	3.83	59.9	20.5	1.56	19.2	0.08	0.17	0.42	69	213
75 ISL	9.80	9.79	33.666	25.946	206.5	0.212	3.63	56.7	22.1	1.65	20.7	0.08	0.16	0.40	75	
84	9.68	9.67	33.694	25.988	202.7	0.231	3.43	53.4	23.4	1.72	21.8	0.08	0.15	0.37	84	212
99	8.99	8.98	33.752	26.145	187.9	0.260	3.53	54.2	26.0	1.78	23.1	0.08	0.09	0.29	100	211
100 ISL	8.96	8.95	33.755	26.152	187.3	0.262	3.53	54.1	26.1	1.78	23.1	0.08	0.09	0.28	101	
120	8.54	8.53	33.827	26.274	176.0	0.298	3.49	53.1	29.1	1.84	24.4	0.07	0.04	0.19	121	210
125 ISL	8.49	8.48	33.858	26.306	173.0	0.307	3.31	50.3	30.5	1.90	25.2	0.07	0.04	0.18	126	
138	8.42	8.41	33.939	26.380	166.2	0.329	2.80	42.5	34.0	2.07	27.4	0.07	0.04	0.17	139	209
150 ISL	8.41	8.39	33.984	26.417	162.9	0.349	2.53	38.4	35.4	2.16	28.2	0.07	0.04	0.15	151	
169	8.40	8.38	34.036	26.460	159.3	0.379	2.32	35.2	37.1	2.23	28.9	0.07	0.03	0.13	170	208
198	7.64	7.62	34.032	26.569	149.1	0.424	2.34	34.9	42.7	2.29	30.5	0.06	0.03	0.12	199	207
200 ISL	7.61	7.59	34.032	26.574	148.7	0.427	2.34	34.9	43.0	2.30	30.6	0.06			201	
228	7.30	7.28	34.032	26.618	144.8	0.468	2.24	33.1	46.5	2.38	31.6	0.06			229	206
250 ISL	7.04	7.02	34.036	26.657	141.3	0.499	2.09	30.7	49.8	2.45	32.7	0.06			252	
269	6.82	6.80	34.043	26.693	138.1	0.526	1.93	28.2	52.9	2.52	33.7	0.06			271	205
300 ISL	6.54	6.51	34.063	26.746	133.4	0.568	1.61	23.4	58.1	2.65	35.4	0.06			302	
318	6.40	6.37	34.077	26.776	130.7	0.592	1.42	20.6	61.3	2.73	36.3	0.06			320	204
378	5.92	5.89	34.130	26.880	121.4	0.667	0.88	12.6	72.2	2.95	39.0	0.06			381	203
400 ISL	5.78	5.75	34.137	26.903	119.4	0.694	0.79	11.3	74.8	2.99	39.6	0.06			403	
436	5.58	5.54	34.148	26.936	116.5	0.736	0.69	9.8	78.7	3.03	40.4	0.05			439	202
500 ISL	5.26	5.22	34.213	27.026	108.5	0.808	0.45	6.3	88.1	3.16	41.5	0.05			504	
516	5.18	5.14	34.230	27.049	106.4	0.826	0.39	5.5	90.5	3.19	41.8	0.05			520	201

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 70 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
35 53.3 N	122 23.0 W	20/04/98	1824 UTC	3110 m	340 24 kn	340 08 07	2	1020.1 mb	14.1 C	12.9 C	11m 04	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	12.98	12.98	32.384	24.371	354.6	0.000	6.41	106.4	0.5	0.21	0.0	0.00	1.07	0.39	0	
2 A	12.98	12.98	32.384	24.372	354.7	0.007	6.41	106.4	0.5	0.21	0.0	0.00	1.07	0.39	2	222
2	12.98	12.98	32.385	24.372	354.6	0.007									2	223
9 A	12.97	12.97	32.384	24.374	354.7	0.032	6.42	106.5	0.5	0.21	0.0	0.00	1.04	0.35	9	221
10 ISL	12.97	12.97	32.384	24.374	354.7	0.035	6.42	106.5	0.5	0.21	0.0	0.00	1.02	0.35	10	
17 A	12.97	12.97	32.383	24.373	354.9	0.060	6.43	106.7	0.5	0.21	0.0	0.00	0.95	0.32	17	220
20 ISL	12.96	12.96	32.389	24.380	354.3	0.071	6.42	106.5	0.5	0.21	0.0	0.00	1.00	0.42	20	
24 A	12.96	12.96	32.397	24.386	353.9	0.085	6.41	106.3	0.5	0.21	0.0	0.00	1.07	0.49	24	219
30 A	12.97	12.97	32.753	24.660	327.9	0.106	6.18	102.8	1.1	0.30	0.0	0.00	0.50	0.19	30	218
41 A	13.00	12.99	32.847	24.727	321.8	0.141	6.01	100.1	1.5	0.34	0.0	0.01	0.49	0.23	41	217
50 ISL	12.94	12.93	32.858	24.748	320.1	0.170	5.99	99.6	1.6	0.35	0.0	0.03	0.51	0.25	50	
51	12.93	12.92	32.859	24.750	319.9	0.173	5.99	99.6	1.6	0.35	0.0	0.03	0.51	0.25	51	216
61	12.81	12.80	32.922	24.823	313.2	0.205	5.83	96.7	2.5	0.42	0.8	0.13	0.54	0.27	61	215
71	12.22	12.21	33.089	25.066	290.3	0.235	5.33	87.4	5.3	0.68	5.0	0.06	0.47	0.32	71	214
75 ISL	12.09	12.08	33.182	25.163	281.2	0.247	5.11	83.6	6.6	0.78	6.7	0.06	0.46	0.32	75	
86	11.73	11.72	33.423	25.417	257.2	0.276	4.52	73.5	10.3	1.06	11.3	0.06	0.41	0.31	86	213
100	10.88	10.87	33.579	25.693	231.2	0.310	3.93	62.8	15.5	1.40	16.5	0.05	0.24	0.21	100	212
121	9.79	9.78	33.742	26.007	201.6	0.356	3.35	52.3	22.3	1.72	21.7	0.05	0.09	0.15	122	211
125 ISL	9.65	9.64	33.764	26.048	197.8	0.364	3.27	50.9	23.4	1.76	22.4	0.05	0.07	0.14	126	
140	9.22	9.20	33.834	26.173	186.1	0.393	3.04	46.9	27.1	1.90	24.4	0.05	0.03	0.10	141	210
150 ISL	8.98	8.96	33.884	26.250	178.9	0.411	2.90	44.5	29.3	1.98	25.5	0.05	0.03	0.08	151	
169	8.65	8.63	33.966	26.366	168.2	0.444	2.67	40.7	32.8	2.09	27.2	0.05	0.02	0.05	170	209
198	8.42	8.40	34.024	26.448	161.0	0.492	2.43	36.9	35.9	2.19	28.5	0.05	0.01	0.05	199	208
200 ISL	8.41	8.39	34.029	26.453	160.5	0.495	2.40	36.4	36.2	2.20	28.6	0.05			201	
229	8.20	8.18	34.082	26.527	154.0	0.540	2.08	31.4	39.8	2.31	29.8	0.05			230	207
250 ISL	7.95	7.92	34.083	26.565	150.6	0.572	2.08	31.2	41.9	2.36	30.4	0.05			251	
268	7.72	7.69	34.075	26.593	148.2	0.599	2.08	31.1	43.7	2.39	31.0	0.05			270	206
295	7.42	7.39	34.081	26.641	143.9	0.639	1.92	28.5	47.4	2.47	32.1	0.05			297	205
300 ISL	7.37	7.34	34.081	26.648	143.3	0.646	1.90	28.2	47.9	2.49	32.3	0.05			302	
316	7.22	7.19	34.079	26.667	141.6	0.669	1.83	27.0	49.7	2.56	32.8	0.05			318	204
376	6.41	6.38	34.082	26.779	131.3	0.751	1.40	20.3	60.8	2.75	36.4	0.05			378	203
400 ISL	6.14	6.10	34.088	26.819	127.6	0.782	1.23	17.7	65.2	2.83	37.6	0.05			403	
437	5.80	5.76	34.106	26.876	122.4	0.828	0.99	14.1	71.7	2.94	39.1	0.05			440	202
500 ISL	5.44	5.40	34.178	26.977	113.3	0.902	0.61	8.6	82.1	3.10	40.9	0.05			504	
514	5.36	5.32	34.194	26.999	111.3	0.918	0.53	7.5	84.4	3.14	41.3	0.05			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 70 65

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
35 43.1 N	122 42.9 W	20/04/98	1216 UTC	1494 m	330 22 kn			1019.9 mb	13.2 C	11.6 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	13.66	13.66	32.687	24.470	345.2	0.000	6.11	103.0	1.3	0.28	0.0	0.00	0.36	0.12	0	
3		13.66	13.66	32.687	24.470	345.3	0.010	6.11	103.0	1.3	0.28	0.0	0.00	0.36	0.12	3	220
10	ISL	13.67	13.67	32.688	24.469	345.6	0.035	6.12	103.2	1.3	0.29	0.0	0.00	0.35	0.12	10	
13		13.67	13.67	32.688	24.469	345.6	0.045	6.12	103.2	1.3	0.29	0.0	0.00	0.35	0.12	13	219
20	ISL	13.65	13.65	32.700	24.483	344.5	0.069	6.10	102.9	1.3	0.29	0.0	0.00	0.34	0.13	20	
30		13.64	13.64	32.720	24.501	343.1	0.103	6.08	102.5	1.3	0.29	0.0	0.00	0.32	0.15	30	218
43		13.69	13.68	32.926	24.650	329.3	0.147	5.96	100.7	1.5	0.32	0.0	0.01	0.59	0.36	43	217
50	ISL	13.94	13.93	33.126	24.754	319.6	0.170	5.87	99.8	1.7	0.34	0.1	0.04	0.63	0.36	50	
54		13.99	13.98	33.203	24.803	315.1	0.183	5.82	99.1	1.9	0.35	0.2	0.05	0.64	0.36	54	216
65		12.95	12.94	32.975	24.837	312.0	0.217	5.68	94.5	2.8	0.50	1.7	0.26	0.66	0.50	65	215
75		12.73	12.72	33.102	24.978	298.8	0.248	5.32	88.2	5.3	0.65	4.4	0.19	0.49	0.43	75	214
85		12.03	12.02	33.228	25.210	276.9	0.276	4.89	79.9	8.4	0.88	8.3	0.08	0.30	0.33	85	213
94		11.76	11.75	33.340	25.348	264.0	0.301	4.59	74.7	10.7	1.03	10.8	0.05	0.22	0.31	94	212
100	ISL	11.47	11.46	33.419	25.462	253.2	0.316	4.35	70.4	12.5	1.16	12.9	0.04	0.18	0.28	100	
108		11.04	11.03	33.513	25.613	239.0	0.336	4.05	64.9	15.0	1.33	15.5	0.03	0.13	0.25	109	211
125		10.26	10.25	33.616	25.830	218.6	0.375	3.71	58.5	18.9	1.55	18.9	0.03	0.09	0.27	126	210
141		9.47	9.45	33.646	25.985	204.0	0.409	3.70	57.4	22.2	1.67	21.4	0.03	0.03	0.11	142	209
150	ISL	9.40	9.38	33.733	26.065	196.6	0.427	3.47	53.7	24.0	1.76	22.6	0.03	0.03	0.12	151	
168		9.26	9.24	33.871	26.196	184.5	0.461	2.90	44.8	27.3	1.92	24.7	0.03	0.03	0.13	169	208
199		9.12	9.10	33.985	26.308	174.5	0.517	2.46	37.9	31.0	2.08	26.6	0.03	0.02	0.09	200	207
200	ISL	9.10	9.08	33.987	26.313	174.1	0.518	2.46	37.9	31.1	2.08	26.7	0.03			201	
229		8.49	8.47	34.036	26.447	161.7	0.567	2.41	36.6	35.5	2.17	28.1	0.03			230	206
250	ISL	8.22	8.19	34.062	26.508	156.1	0.600	2.33	35.2	38.2	2.23	28.9	0.03			251	
270		8.04	8.01	34.084	26.553	152.2	0.631	2.21	33.3	40.7	2.30	29.7	0.03			272	205
300	ISL	7.81	7.78	34.124	26.619	146.3	0.676	1.86	27.8	45.0	2.43	31.2	0.03			302	
316		7.69	7.66	34.142	26.650	143.5	0.699	1.65	24.6	47.5	2.51	32.0	0.03			318	204
381		6.86	6.82	34.162	26.783	131.4	0.789	1.09	16.0	59.5	2.78	35.7	0.03			383	203
400	ISL	6.71	6.67	34.165	26.806	129.4	0.813	1.03	15.0	61.9	2.83	36.5	0.03			403	
430		6.50	6.46	34.173	26.840	126.5	0.852	0.96	13.9	65.6	2.91	37.5	0.03			433	202
500	ISL	5.95	5.91	34.229	26.955	116.0	0.937	0.52	7.5	76.5	3.12	39.6	0.03			503	
503		5.93	5.89	34.232	26.960	115.6	0.940	0.50	7.2	77.0	3.13	39.7	0.03			506	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 70 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
35 33.0 N	123 4.5 W	20/04/98	0742 UTC	3825 m	340 26 kn			1021.3 mb	13.1 C	11.5 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	13.64	13.64	32.732	24.509	341.5	0.000	6.06	102.2	1.5	0.32	0.0	0.00	0.24	0.08	0	
2		13.64	13.64	32.732	24.509	341.6	0.007	6.06	102.2	1.5	0.32	0.0	0.00	0.24	0.08	2	220
10	ISL	13.64	13.64	32.734	24.511	341.6	0.034	6.09	102.7	1.5	0.32	0.0	0.00	0.24	0.07	10	
15		13.64	13.64	32.735	24.512	341.7	0.051	6.10	102.9	1.5	0.32	0.0	0.00	0.24	0.07	15	219
20	ISL	13.64	13.64	32.735	24.512	341.8	0.068	6.08	102.5	1.5	0.32	0.0	0.00	0.24	0.07	20	
29		13.65	13.65	32.733	24.509	342.3	0.099	6.05	102.0	1.5	0.32	0.0	0.00	0.24	0.07	29	218
30	ISL	13.65	13.65	32.733	24.509	342.4	0.103	6.05	102.0	1.5	0.32	0.0	0.00	0.24	0.07	30	
45		13.66	13.65	32.732	24.506	343.0	0.154	6.08	102.6	1.5	0.31	0.0	0.00	0.24	0.07	45	217
50	ISL	13.83	13.82	32.930	24.625	331.9	0.171	5.99	101.5	1.7	0.33	0.0	0.00	0.31	0.12	50	
54		13.95	13.94	33.086	24.721	322.9	0.184	5.92	100.7	1.9	0.34	0.0	0.00	0.39	0.18	54	216
65		13.92	13.91	33.145	24.773	318.2	0.219	5.85	99.5	2.2	0.37	0.1	0.05	0.62	0.37	65	215
75		13.78	13.77	33.228	24.866	309.6	0.251	5.68	96.3	2.6	0.43	1.0	0.17	0.51	0.39	75	214
83		13.58	13.57	33.302	24.964	300.5	0.275	5.42	91.6	4.0	0.56	3.1	0.05	0.42	0.36	83	213
93		12.97	12.96	33.335	25.112	286.6	0.304	5.13	85.6	5.8	0.73	5.8	0.03	0.26	0.31	93	212
100	ISL	12.33	12.32	33.385	25.275	271.1	0.324	4.85	79.9	8.2	0.90	8.6	0.02	0.18	0.24	100	
110		11.41	11.40	33.475	25.517	248.2	0.350	4.44	71.7	11.9	1.16	12.7	0.01	0.09	0.13	111	211
125		10.55	10.54	33.593	25.762	225.1	0.385	3.98	63.2	16.2	1.44	17.3	0.01	0.03	0.06	126	210
142		9.95	9.93	33.737	25.977	204.9	0.422	3.44	53.9	21.3	1.69	20.8	0.01	0.01	0.04	143	209
150	ISL	9.80	9.78	33.792	26.045	198.6	0.438	3.21	50.2	23.2	1.78	22.1	0.01	0.01	0.04	151	
168		9.58	9.56	33.896	26.163	187.7	0.473	2.75	42.8	26.8	1.96	24.3	0.01	0.00	0.03	169	208
198		9.13	9.11	34.025	26.338	171.7	0.527	2.27	35.0	32.2	2.17	27.0	0.01	0.00	0.03	199	207
200	ISL	9.10	9.08	34.030	26.346	170.9	0.530	2.27	35.0	32.4	2.18	27.1	0.01			201	
231		8.64	8.62	34.064	26.446	161.9	0.582	2.24	34.2	35.7	2.24	28.2	0.01			232	206
250	ISL	8.21	8.18	34.050	26.500	156.8	0.612	2.37	35.8	37.9	2.25	28.8	0.01			251	
270		7.79	7.76	34.035	26.551	152.2	0.643	2.45	36.6	40.5	2.26	29.5	0.01			272	205
300	ISL	7.52	7.49	34.069	26.617	146.3	0.688	2.14	31.8	44.9	2.40	31.0	0.01			302	
314		7.46	7.43	34.092	26.644	143.9	0.708	1.93	28.7	47.0	2.48	31.8	0.01			316	204
379		7.23	7.19	34.165	26.734	136.3	0.799	1.25	18.5	54.7	2.73	34.2	0.01			381	203
400	ISL	7.01	6.97	34.170	26.769	133.2	0.827	1.11	16.3	58.2	2.80	35.2	0.01			403	
434		6.62	6.58	34.176	26.827	127.9	0.872	0.92	13.4	64.1	2.90	36.8	0.01			437	202
500	ISL	6.14	6.10	34.224	26.927	118.9	0.953	0.58	8.4	73.8	3.08	38.9	0.01			503	
511		6.06	6.01	34.232	26.944	117.3	0.966	0.52	7.5	75.4	3.11	39.3	0.01			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 70 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
35 13.3 N	123 47.2 W	20/04/98	0131 UTC	4064 m	330 27 kn	340 10 05	1	1022.5 mb	13.9 C	11.7 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	13.94	13.94	32.935	24.605	332.4	0.000	6.04	102.6	1.8	0.32	0.0	0.00	0.26	0.04	0	
1	13.94	13.94	32.935	24.605	332.4	0.003	6.04	102.6	1.8	0.32	0.0	0.00	0.26	0.04	1	220
10 ISL	13.95	13.95	32.938	24.605	332.6	0.033	6.04	102.6	1.8	0.32	0.0	0.00	0.26	0.05	10	
16	13.96	13.96	32.940	24.605	332.8	0.053	6.04	102.7	1.8	0.32	0.0	0.00	0.25	0.05	16	219
20 ISL	14.00	14.00	32.976	24.625	331.1	0.066	6.03	102.6	1.8	0.32	0.0	0.00	0.24	0.05	20	
30	14.10	14.10	33.068	24.675	326.6	0.099	6.00	102.3	1.9	0.32	0.0	0.00	0.23	0.04	30	218
45	14.07	14.06	33.082	24.693	325.3	0.148	5.99	102.1	1.9	0.33	0.0	0.00	0.24	0.06	45	217
50 ISL	13.82	13.81	33.019	24.696	325.1	0.165	6.01	101.9	2.0	0.33	0.0	0.00	0.27	0.11	50	
52	13.73	13.72	32.995	24.696	325.2	0.171	6.02	101.9	2.1	0.33	0.0	0.00	0.30	0.13	52	216
63	13.70	13.69	33.072	24.762	319.2	0.206	5.95	100.6	2.1	0.35	0.0	0.01	0.72	0.32	63	215
74	13.56	13.55	33.140	24.843	311.8	0.241	5.66	95.5	3.4	0.48	1.6	0.13	0.62	0.37	74	214
75 ISL	13.49	13.48	33.165	24.876	308.6	0.244	5.56	93.7	3.9	0.52	2.3	0.12	0.58	0.35	75	
84	12.72	12.71	33.387	25.201	277.8	0.271	4.69	77.9	9.0	0.92	8.6	0.05	0.18	0.13	84	213
95	11.99	11.98	33.434	25.378	261.2	0.300	4.43	72.5	11.5	1.11	11.4	0.04	0.09	0.09	95	212
100 ISL	11.68	11.67	33.464	25.459	253.6	0.313	4.29	69.7	12.8	1.20	12.8	0.04	0.07	0.09	100	
111	11.00	10.99	33.543	25.644	236.1	0.340	3.96	63.4	16.0	1.39	16.0	0.04	0.05	0.08	112	211
125 ISL	10.10	10.09	33.666	25.896	212.3	0.372	3.52	55.3	21.1	1.68	20.2	0.04	0.03	0.09	126	
127	9.98	9.97	33.682	25.929	209.2	0.376	3.47	54.4	21.8	1.71	20.7	0.04	0.03	0.09	128	210
145	9.20	9.18	33.739	26.102	193.0	0.412	3.55	54.7	24.6	1.74	22.3	0.03	0.02	0.09	146	209
150 ISL	9.09	9.07	33.777	26.149	188.5	0.421	3.40	52.3	26.1	1.80	23.2	0.03	0.02	0.09	151	
166	8.84	8.82	33.902	26.287	175.8	0.451	2.87	43.9	30.9	2.00	25.9	0.03	0.02	0.07	167	208
200	8.17	8.15	33.971	26.444	161.2	0.508	2.90	43.7	35.5	2.07	27.5	0.03	0.01	0.05	201	207
224	7.78	7.76	33.988	26.515	154.8	0.546	3.41	51.0	36.5	1.94	26.4	0.03			225	206
250 ISL	7.33	7.31	33.988	26.579	148.9	0.585	3.21	47.5	41.0	2.07	28.1	0.03			251	
266	7.07	7.05	33.985	26.613	145.8	0.609	2.92	42.9	44.4	2.20	29.7	0.03			268	205
300 ISL	6.71	6.68	33.990	26.666	141.0	0.658	2.55	37.2	49.5	2.36	31.7	0.03			302	
320	6.54	6.51	33.997	26.694	138.6	0.686	2.33	33.8	52.4	2.45	32.8	0.03			322	204
382	6.02	5.99	34.041	26.797	129.4	0.769	1.51	21.7	64.3	2.75	36.9	0.03			384	203
400 ISL	5.87	5.84	34.056	26.827	126.6	0.792	1.32	18.9	67.9	2.83	37.8	0.03			403	
431	5.62	5.58	34.083	26.880	121.8	0.830	1.04	14.8	73.9	2.94	39.2	0.03			434	202
500 ISL	5.25	5.21	34.143	26.972	113.6	0.911	0.68	9.6	84.0	3.08	41.0	0.03			503	
510	5.20	5.16	34.152	26.985	112.4	0.923	0.63	8.9	85.5	3.10	41.3	0.03			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 73 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
35 37.6 N	121 16.9 W	18/04/98	1526 UTC	78 m	310 13 kn	320 02 06	0	1023.1 mb	13.5 C	12.1 C	07m	06

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	11.23	11.23	33.530	25.590	238.6	0.000	5.14	82.8	10.7	1.01	11.0	0.16	8.87	1.49	0	
1	11.23	11.23	33.530	25.590	238.7	0.002	5.14	82.8	10.7	1.01	11.0	0.16	8.87	1.49	1	209
5	11.22	11.22	33.538	25.598	238.0	0.012	5.08	81.8	10.8	1.00	11.2	0.16	8.63	1.54	5	208
9	11.15	11.15	33.550	25.620	236.0	0.021	4.86	78.1	11.6	1.06	12.1	0.15	8.39	1.48	9	207
10 ISL	11.12	11.12	33.557	25.631	235.0	0.024	4.77	76.7	12.1	1.09	12.5	0.14	7.93	1.43	10	
20	10.69	10.69	33.642	25.774	221.6	0.047	3.82	60.8	17.9	1.43	17.4	0.09	2.45	0.86	20	206
30	10.25	10.25	33.713	25.906	209.3	0.068	3.37	53.2	21.3	1.61	20.2	0.07	0.42	0.65	30	205
40	10.23	10.23	33.714	25.910	209.1	0.089	3.35	52.8	21.7	1.63	20.4	0.07	0.23	0.44	40	204
49	10.13	10.12	33.742	25.949	205.6	0.108	3.28	51.6	22.6	1.67	21.1	0.07	0.23	0.46	49	203
50 ISL	10.08	10.07	33.751	25.965	204.1	0.110	3.25	51.1	23.0	1.69	21.3	0.07	0.22	0.45	50	
59	9.65	9.64	33.835	26.102	191.2	0.128	2.96	46.1	26.2	1.84	23.3	0.05	0.08	0.32	59	202
69	9.54	9.53	33.864	26.143	187.6	0.146	2.80	43.5	27.5	1.89	24.1	0.06	0.08	0.34	69	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 73 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
35 28.6 N	121 36.4 W	18/04/98	1843 UTC	981 m	340 28 kn	330 05 05	0	1024.2 mb	14.7 C	12.6 C	12m	05

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	12.63	12.63	32.883	24.826	311.3	0.000	6.16	101.8	1.7	0.36	0.5	0.10	3.28	1.01	0	
2 A	12.63	12.63	32.883	24.826	311.4	0.006	6.16	101.8	1.7	0.36	0.5	0.10	3.28	1.01	2	222
2	12.62	12.62	32.884	24.829	311.1	0.006									2	223
9 A	12.62	12.62	32.883	24.828	311.4	0.028	6.16	101.8	1.7	0.36	0.6	0.10	3.06	1.15	9	221
10 ISL	12.62	12.62	32.886	24.830	311.1	0.031	6.13	101.3	1.8	0.37	0.7	0.11	2.91	1.11	10	
17 A	12.57	12.57	32.927	24.872	307.4	0.053	5.85	96.6	2.6	0.44	1.6	0.15	1.68	0.74	17	220
20 ISL	12.55	12.55	32.965	24.906	304.3	0.062	5.77	95.2	2.8	0.47	1.9	0.15	1.19	0.59	20	
26 A	12.41	12.41	33.016	24.972	298.1	0.080	5.51	90.7	4.2	0.58	3.6	0.15	0.49	0.36	26	219
30 ISL	12.15	12.15	33.185	25.153	281.0	0.092	5.14	84.2	6.6	0.75	6.5	0.09	0.45	0.33	30	
32 A	12.02	12.02	33.267	25.241	272.7	0.097	4.96	81.1	7.8	0.83	7.9	0.06	0.43	0.31	32	218
39	11.84	11.84	33.316	25.313	266.0	0.116	4.78	77.9	9.1	0.95	9.5	0.06	0.43	0.31	39	217
46 A	11.77	11.76	33.420	25.407	257.2	0.134	4.53	73.7	10.4	1.04	11.3	0.05	0.40	0.37	46	216
50 ISL	11.49	11.48	33.438	25.472	251.0	0.144	4.42	71.5	11.5	1.11	12.4	0.04	0.33	0.28	50	
52	11.32	11.31	33.442	25.506	247.8	0.149	4.38	70.6	12.1	1.14	12.9	0.04	0.29	0.23	52	215
60	10.61	10.60	33.459	25.646	234.7	0.169	4.23	67.2	15.0	1.27	15.0	0.04	0.21	0.31	60	214
69	10.00	9.99	33.497	25.780	222.1	0.189	4.23	66.3	17.0	1.35	16.6	0.04	0.15	0.25	69	213
75 ISL	9.81	9.80	33.521	25.831	217.4	0.202	4.19	65.4	18.0	1.40	17.4	0.04	0.12	0.24	75	
83	9.67	9.66	33.570	25.892	211.7	0.220	4.03	62.7	19.5	1.48	18.6	0.03	0.09	0.23	83	212
99	9.43	9.42	33.780	26.096	192.6	0.252	3.16	49.0	25.3	1.80	23.3	0.03	0.05	0.20	100	211
100 ISL	9.43	9.42	33.788	26.102	192.1	0.254	3.13	48.5	25.5	1.81	23.4	0.03	0.05	0.20	101	
119	9.39	9.38	33.886	26.186	184.5	0.290	2.77	42.9	27.7	1.92	24.8	0.03	0.04	0.19	120	210
125 ISL	9.36	9.35	33.911	26.210	182.3	0.301	2.68	41.5	28.5	1.96	25.2	0.03	0.04	0.18	126	
138	9.25	9.23	33.957	26.264	177.4	0.324	2.51	38.8	30.2	2.03	26.1	0.03	0.04	0.17	139	209
150 ISL	9.09	9.07	33.985	26.312	173.1	0.345	2.42	37.3	31.7	2.08	26.8	0.03	0.04	0.17	151	
169	8.79	8.77	34.016	26.384	166.6	0.377	2.34	35.8	34.0	2.14	27.7	0.03	0.03	0.16	170	208
198	8.38	8.36	34.050	26.474	158.4	0.425	2.24	34.0	37.7	2.23	29.0	0.03	0.04	0.11	199	207
200 ISL	8.32	8.30	34.050	26.483	157.6	0.428	2.24	33.9	38.1	2.24	29.1	0.03			201	
228	7.55	7.53	34.043	26.591	147.5	0.470	2.25	33.5	43.7	2.32	30.8	0.03			229	206
250 ISL	7.33	7.31	34.038	26.619	145.1	0.503	2.22	32.9	45.4	2.34	31.3	0.03			252	
269	7.24	7.21	34.037	26.631	144.3	0.530	2.20	32.5	46.6	2.37	31.7	0.03			271	205
300 ISL	6.93	6.90	34.050	26.684	139.5	0.574	1.94	28.5	51.5	2.49	33.3	0.02			302	
319	6.73	6.70	34.065	26.723	136.0	0.600	1.73	25.3	55.1	2.59	34.4	0.02			321	204
378	6.27	6.24	34.135	26.839	125.5	0.677	1.00	14.4	66.2	2.88	37.6	0.02			381	203
400 ISL	6.06	6.03	34.150	26.878	122.0	0.705	0.85	12.2	70.2	2.95	38.5	0.02			403	
438	5.70	5.66	34.168	26.937	116.6	0.750	0.68	9.7	76.8	3.05	39.9	0.02			441	202
500 ISL	5.23	5.19	34.190	27.011	109.8	0.820	0.51	7.2	86.3	3.15	41.5	0.02			504	
513	5.13	5.09	34.195	27.027	108.4	0.834	0.47	6.6	88.3	3.17	41.8	0.02			517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 73 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
35 18.4 N	121 58.5 W	19/04/98	0031 UTC	2558 m	310 26 kn	310 10 05	1	1022.3 mb	14.5 C	12.6 C	12m 03	6/8	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	13.54	13.54	32.485	24.339	357.8	0.000	6.23	104.7	0.9	0.24	0.1	0.00	0.41	0.08	0	
2	13.54	13.54	32.485	24.339	357.8	0.007	6.23	104.7	0.9	0.24	0.1	0.00	0.41	0.08	2	220
10 ISL	13.53	13.53	32.484	24.340	357.9	0.036	6.24	104.8	0.9	0.23	0.1	0.00	0.42	0.07	10	
15	13.53	13.53	32.483	24.339	358.1	0.054	6.25	105.0	0.9	0.22	0.1	0.00	0.42	0.07	15	219
20 ISL	13.53	13.53	32.484	24.340	358.1	0.072	6.24	104.8	0.9	0.22	0.1	0.00	0.42	0.07	20	
30 ISL	13.52	13.52	32.486	24.344	358.0	0.107	6.21	104.3	0.9	0.21	0.1	0.00	0.42	0.09	30	
31	13.52	13.52	32.486	24.344	358.1	0.111	6.21	104.3	0.9	0.21	0.1	0.00	0.42	0.09	31	218
45	13.36	13.35	32.629	24.487	344.8	0.160	6.20	103.9	0.9	0.26	0.1	0.00	0.40	0.10	45	217
50 ISL	13.35	13.34	32.738	24.574	336.7	0.177	6.14	102.9	1.2	0.29	0.1	0.00	0.46	0.18	50	
55	13.34	13.33	32.855	24.666	328.0	0.194	6.05	101.4	1.7	0.33	0.1	0.01	0.55	0.28	55	216
64	13.61	13.60	33.114	24.812	314.4	0.223	5.80	98.0	2.6	0.37	0.5	0.10	0.84	0.52	64	215
75	13.11	13.10	33.140	24.933	303.2	0.257	5.58	93.3	3.6	0.50	2.2	0.24	0.56	0.45	75	214
84	12.59	12.58	33.214	25.092	288.2	0.283	5.14	85.0	7.0	0.76	6.3	0.26	0.46	0.44	84	213
94	11.91	11.90	33.354	25.331	265.7	0.311	4.59	74.9	10.6	1.01	10.6	0.04	0.25	0.25	94	212
100 ISL	11.54	11.53	33.429	25.457	253.7	0.327	4.34	70.3	12.6	1.14	12.8	0.03	0.18	0.23	100	
110	11.02	11.01	33.538	25.636	236.8	0.351	4.01	64.3	15.5	1.33	15.8	0.02	0.12	0.19	111	211
125	10.45	10.44	33.659	25.831	218.6	0.385	3.58	56.7	19.0	1.54	19.0	0.02	0.08	0.17	126	210
143	9.99	9.97	33.750	25.981	204.6	0.423	3.23	50.7	22.6	1.72	21.6	0.02	0.06	0.16	144	209
150 ISL	9.78	9.76	33.783	26.042	198.9	0.437	3.12	48.7	24.1	1.78	22.6	0.02	0.05	0.16	151	
170	9.25	9.23	33.874	26.200	184.2	0.476	2.84	43.9	28.2	1.95	25.2	0.01	0.04	0.15	171	208
199	8.85	8.83	33.994	26.358	169.7	0.527	2.44	37.4	33.1	2.13	27.3	0.01	0.04	0.13	200	207
200 ISL	8.84	8.82	33.997	26.362	169.3	0.529	2.43	37.2	33.3	2.13	27.4	0.01			201	
228	8.50	8.48	34.061	26.465	159.9	0.575	2.17	33.0	37.4	2.25	29.0	0.01			229	206
250 ISL	8.35	8.32	34.113	26.529	154.2	0.609	1.94	29.4	40.2	2.35	29.9	0.01			251	
267	8.24	8.21	34.144	26.570	150.6	0.635	1.77	26.8	42.4	2.43	30.5	0.01			269	205
300 ISL	7.81	7.78	34.150	26.639	144.4	0.684	1.57	23.5	47.2	2.54	32.1	0.01			302	
320	7.52	7.49	34.145	26.677	141.0	0.713	1.47	21.9	50.3	2.60	33.2	0.01			322	204
380	6.85	6.81	34.181	26.799	129.9	0.794	1.02	14.9	60.8	2.83	36.1	0.01			382	203
400 ISL	6.62	6.58	34.184	26.833	126.8	0.820	0.89	13.0	64.3	2.90	37.0	0.01			403	
435	6.25	6.21	34.189	26.885	122.0	0.863	0.70	10.1	70.3	3.02	38.5	0.01			438	202
500 ISL	5.72	5.68	34.225	26.981	113.3	0.940	0.48	6.8	80.3	3.15	40.3	0.01			503	
516	5.59	5.55	34.234	27.004	111.2	0.958	0.42	6.0	82.7	3.18	40.8	0.01			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 73 65

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
35 8.6 N	122 18.8 W	19/04/98	0427 UTC	3865 m	340 30 kn			1023.0 mb	13.8 C	12.1 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	14.32	14.32	33.062	24.624	330.6	0.000	5.97	102.3	1.7	0.30	0.0	0.00	0.30	0.04	0	
2	14.32	14.32	33.062	24.624	330.6	0.007	5.97	102.3	1.7	0.30	0.0	0.00	0.30	0.04	2	220
10 ISL	14.33	14.33	33.068	24.627	330.6	0.033	5.97	102.3	1.6	0.31	0.0	0.00	0.29	0.05	10	
15	14.34	14.34	33.072	24.628	330.7	0.050	5.96	102.2	1.6	0.31	0.0	0.00	0.27	0.05	15	219
20 ISL	14.36	14.36	33.087	24.635	330.1	0.066	5.95	102.0	1.6	0.30	0.0	0.00	0.25	0.05	20	
29	14.41	14.41	33.128	24.657	328.3	0.096	5.93	101.8	1.6	0.29	0.0	0.00	0.22	0.05	29	218
30 ISL	14.42	14.42	33.136	24.661	327.9	0.099	5.93	101.9	1.6	0.29	0.0	0.00	0.22	0.05	30	
43	14.48	14.47	33.229	24.720	322.7	0.141	5.90	101.5	1.7	0.29	0.0	0.00	0.17	0.04	43	217
50 ISL	14.49	14.48	33.236	24.724	322.5	0.164	5.89	101.4	1.7	0.29	0.0	0.00	0.17	0.04	50	
59	14.51	14.50	33.245	24.727	322.5	0.193	5.89	101.4	1.7	0.30	0.0	0.00	0.17	0.04	59	216
73	14.41	14.40	33.240	24.745	321.2	0.238	5.87	100.9	1.7	0.31	0.0	0.01	0.34	0.12	73	215
75 ISL	14.31	14.30	33.244	24.769	319.0	0.244	5.86	100.5	1.8	0.32	0.1	0.03	0.46	0.19	75	
83	13.76	13.75	33.272	24.905	306.2	0.269	5.74	97.3	2.5	0.37	0.7	0.10	0.82	0.44	83	214
94	12.82	12.81	33.356	25.158	282.2	0.302	5.19	86.3	5.7	0.67	5.6	0.06	0.45	0.37	94	213
100 ISL	12.35	12.34	33.397	25.281	270.6	0.318	5.10	84.0	6.8	0.76	7.0	0.05	0.35	0.36	100	
104	11.99	11.98	33.429	25.374	261.8	0.329	5.01	81.9	7.8	0.83	8.2	0.04	0.29	0.36	104	212
112	11.03	11.02	33.524	25.624	238.1	0.349	4.49	72.0	12.0	1.14	13.2	0.02	0.14	0.17	113	211
124	10.55	10.54	33.576	25.749	226.4	0.377	4.29	68.1	14.5	1.27	15.4	0.02	0.09	0.11	125	210
125 ISL	10.50	10.49	33.582	25.762	225.1	0.379	4.28	67.8	14.7	1.28	15.6	0.02	0.09	0.11	126	
139	9.79	9.77	33.679	25.959	206.6	0.409	4.07	63.6	18.4	1.44	18.3	0.01	0.04	0.06	140	209
150 ISL	9.40	9.38	33.758	26.085	194.8	0.431	3.67	56.8	22.3	1.63	21.1	0.01	0.02	0.05	151	
163	9.07	9.05	33.844	26.205	183.5	0.456	3.18	48.9	26.8	1.84	24.2	0.01	0.00	0.04	164	208
193	8.57	8.55	33.971	26.383	167.0	0.509	2.87	43.7	31.8	2.00	26.3	0.01	0.01	0.04	194	207
200 ISL	8.41	8.39	33.979	26.414	164.2	0.520	2.92	44.3	32.8	2.00	26.5	0.01			201	
228	7.80	7.78	33.984	26.509	155.4	0.565	3.12	46.7	36.6	2.00	27.1	0.01			229	206
250 ISL	7.49	7.47	33.996	26.563	150.5	0.599	2.93	43.5	40.1	2.10	28.5	0.01			251	
268	7.30	7.27	34.010	26.601	147.1	0.625	2.67	39.5	43.1	2.22	29.9	0.01			270	205
300 ISL	7.05	7.02	34.048	26.666	141.3	0.671	2.12	31.2	48.7	2.43	32.1	0.01			302	
321	6.91	6.88	34.074	26.706	137.8	0.701	1.76	25.8	52.6	2.56	33.5	0.01			323	204
374	6.43	6.40	34.114	26.802	129.2	0.772	1.17	17.0	62.7	2.80	36.6	0.01			376	203
400 ISL	6.21	6.17	34.130	26.843	125.4	0.805	0.97	14.0	67.1	2.89	37.8	0.01			403	
435	5.95	5.91	34.150	26.892	121.0	0.848	0.77	11.0	72.4	2.99	39.0	0.01			438	202
500 ISL	5.63	5.59	34.186	26.961	115.1	0.924	0.56	8.0	79.5	3.12	40.3	0.01			503	
511	5.58	5.54	34.192	26.972	114.2	0.937	0.53	7.5	80.7	3.14	40.5	0.01			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 73 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 59.0 N	122 39.9 W	19/04/98	0817 UTC	4060 m	330 30 kn			1022.9 mb	14.7 C	13.2 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	14.52	14.52	33.224	24.707	322.7	0.000	5.91	101.8	2.3	0.30	0.0	0.00	0.15	0.04	0	
2	14.52	14.52	33.224	24.707	322.8	0.006	5.91	101.8	2.3	0.30	0.0	0.00	0.15	0.04	2	220
10 ISL	14.53	14.53	33.223	24.704	323.2	0.032	5.91	101.8	2.3	0.30	0.0	0.00	0.16	0.03	10	
15	14.53	14.53	33.223	24.704	323.4	0.048	5.91	101.8	2.3	0.30	0.0	0.00	0.16	0.03	15	219
20 ISL	14.53	14.53	33.223	24.704	323.5	0.065	5.92	102.0	2.3	0.30	0.0	0.00	0.16	0.03	20	
29	14.53	14.53	33.224	24.705	323.7	0.094	5.93	102.1	2.3	0.30	0.0	0.00	0.17	0.04	29	218
30 ISL	14.53	14.53	33.224	24.705	323.7	0.097	5.93	102.1	2.3	0.30	0.0	0.00	0.17	0.04	30	
44	14.53	14.52	33.222	24.704	324.2	0.142	5.89	101.4	2.3	0.30	0.0	0.00	0.17	0.04	44	217
50 ISL	14.53	14.52	33.224	24.706	324.2	0.162	5.89	101.4	2.3	0.29	0.0	0.00	0.17	0.03	50	
54	14.53	14.52	33.225	24.707	324.2	0.175	5.90	101.6	2.3	0.29	0.0	0.00	0.18	0.03	54	216
63	14.52	14.51	33.223	24.708	324.4	0.204	5.91	101.8	2.3	0.29	0.0	0.00	0.21	0.06	63	215
74	14.05	14.04	33.329	24.888	307.5	0.239	5.64	96.2	3.3	0.40	1.2	0.08	0.82	0.53	74	214
75 ISL	13.95	13.94	33.334	24.913	305.2	0.242	5.59	95.2	3.6	0.43	1.6	0.08	0.81	0.52	75	
84	12.97	12.96	33.358	25.130	284.7	0.268	5.14	85.8	6.3	0.71	6.0	0.05	0.55	0.47	84	213
94	12.02	12.01	33.346	25.304	268.2	0.296	4.84	79.2	8.9	0.92	9.4	0.05	0.33	0.39	94	212
100 ISL	11.58	11.57	33.368	25.403	258.9	0.312	4.70	76.2	10.2	1.03	11.0	0.04	0.25	0.32	100	
107	11.15	11.14	33.413	25.516	248.2	0.330	4.54	72.9	11.8	1.14	12.8	0.02	0.19	0.23	108	211
124	10.35	10.34	33.581	25.787	222.7	0.370	4.06	64.2	16.9	1.41	17.4	0.02	0.06	0.07	125	210
125 ISL	10.31	10.30	33.589	25.801	221.4	0.372	4.03	63.6	17.2	1.42	17.6	0.02	0.06	0.07	126	
145	9.57	9.55	33.734	26.038	199.1	0.414	3.54	55.0	23.0	1.68	21.1	0.02	0.01	0.04	146	209
150 ISL	9.47	9.45	33.762	26.076	195.6	0.424	3.45	53.5	23.9	1.72	21.8	0.02	0.01	0.04	151	
174	9.11	9.09	33.866	26.216	182.7	0.469	3.10	47.7	27.6	1.88	24.4	0.02	0.00	0.03	175	208
195	8.76	8.74	33.936	26.326	172.5	0.506	2.84	43.4	31.2	2.00	26.3	0.02	0.00	0.04	196	207
200 ISL	8.66	8.64	33.946	26.350	170.4	0.515	2.90	44.2	31.7	1.99	26.3	0.02			201	
231	8.06	8.04	33.983	26.470	159.3	0.566	3.32	50.0	34.7	1.93	26.0	0.02			232	206
250 ISL	7.76	7.74	34.001	26.528	153.9	0.596	3.09	46.2	38.1	2.04	27.5	0.02			251	
269	7.51	7.48	34.016	26.576	149.6	0.625	2.72	40.4	41.9	2.20	29.5	0.02			271	205
300 ISL	7.17	7.14	34.045	26.647	143.2	0.670	2.20	32.4	48.1	2.41	32.0	0.02			302	
316	7.01	6.98	34.059	26.680	140.2	0.693	1.95	28.7	51.3	2.51	33.1	0.02			318	204
378	6.38	6.35	34.087	26.787	130.5	0.777	1.36	19.7	62.4	2.77	36.4	0.02			380	203
400 ISL	6.19	6.15	34.097	26.820	127.6	0.805	1.21	17.4	65.8	2.85	37.3	0.02			403	
437	5.90	5.86	34.118	26.873	122.8	0.851	1.00	14.3	71.4	2.96	38.7	0.02			440	202
500 ISL	5.55	5.51	34.180	26.966	114.5	0.926	0.61	8.7	81.4	3.13	40.6	0.03			503	
507	5.51	5.47	34.187	26.976	113.6	0.934	0.57	8.1	82.5	3.15	40.8	0.03			511	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 73 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 39.7 N	123 23.3 W	19/04/98	1802 UTC	4156 m	330 22 kn	330 08 07	2	1023.5 mb	15.0 C	13.5 C	18m 01	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	14.33	14.33	33.199	24.727	320.7	0.000	5.94	101.9	2.0	0.32	0.0	0.00	0.20	0.05	0	
2	14.32	14.32	33.197	24.728	320.7	0.006									2	222
2 A	14.33	14.33	33.199	24.727	320.8	0.006	5.94	101.9	2.0	0.32	0.0	0.00	0.20	0.05	2	221
10 ISL	14.32	14.32	33.201	24.731	320.6	0.032	5.95	102.0	2.0	0.32	0.0	0.00	0.20	0.05	10	
14 A	14.32	14.32	33.202	24.732	320.7	0.045	5.95	102.0	2.0	0.32	0.0	0.00	0.20	0.05	14	220
20 ISL	14.31	14.31	33.200	24.733	320.8	0.064	5.95	102.0	2.0	0.32	0.0	0.00	0.21	0.05	20	
27 A	14.31	14.31	33.198	24.732	321.1	0.087	5.94	101.8	2.0	0.32	0.0	0.00	0.21	0.05	27	219
30 ISL	14.31	14.31	33.198	24.732	321.2	0.096	5.94	101.8	2.0	0.32	0.0	0.00	0.21	0.05	30	
39 A	14.32	14.31	33.199	24.731	321.5	0.125	5.94	101.9	1.9	0.32	0.0	0.00	0.20	0.05	39	218
50 A	14.32	14.31	33.197	24.729	322.0	0.161	5.95	102.0	1.9	0.32	0.0	0.00	0.19	0.05	50	217
59	14.21	14.20	33.214	24.766	318.8	0.189	5.91	101.1	2.0	0.33	0.0	0.01	0.41	0.20	59	216
70 A	13.94	13.93	33.250	24.850	311.0	0.224	5.74	97.7	2.9	0.39	0.6	0.10	0.75	0.42	70	215
75 ISL	13.35	13.34	33.318	25.023	294.6	0.239	5.31	89.3	5.0	0.61	3.9	0.07	0.50	0.39	75	
77	13.08	13.07	33.347	25.099	287.4	0.245	5.13	85.8	5.9	0.70	5.4	0.05	0.38	0.38	77	214
84	12.22	12.21	33.411	25.316	266.8	0.264	4.80	78.9	8.5	0.92	9.0	0.04	0.23	0.27	84	213
94	11.70	11.69	33.434	25.432	256.0	0.291	4.72	76.7	9.8	1.01	10.4	0.04	0.16	0.25	94	212
100 ISL	11.44	11.43	33.469	25.507	249.0	0.306	4.56	73.7	11.1	1.10	11.8	0.04	0.13	0.20	100	
109	11.08	11.07	33.537	25.625	237.9	0.328	4.23	67.9	13.5	1.26	14.3	0.03	0.09	0.12	110	211
124	10.47	10.46	33.667	25.834	218.3	0.362	3.64	57.7	18.4	1.53	18.5	0.03	0.01	0.04	125	210
125 ISL	10.44	10.43	33.672	25.843	217.4	0.364	3.62	57.3	18.6	1.54	18.7	0.03	0.01	0.04	126	
144	9.98	9.96	33.741	25.975	205.2	0.404	3.40	53.3	21.5	1.68	20.9	0.03	0.00	0.04	145	209
150 ISL	9.84	9.82	33.763	26.016	201.4	0.416	3.33	52.1	22.4	1.72	21.6	0.03	0.00	0.04	151	
169	9.43	9.41	33.832	26.138	190.1	0.454	3.12	48.4	25.4	1.84	23.5	0.03	0.00	0.04	170	208
199	8.82	8.80	33.946	26.325	172.8	0.508	2.79	42.7	30.7	2.02	26.2	0.03	0.00	0.03	200	207
200 ISL	8.81	8.79	33.950	26.330	172.3	0.510	2.78	42.5	30.8	2.03	26.3	0.03			201	
229	8.69	8.67	34.037	26.417	164.6	0.559	2.37	36.2	34.5	2.17	27.8	0.03			230	206
250 ISL	8.48	8.45	34.082	26.485	158.5	0.592	2.12	32.2	37.7	2.28	28.9	0.03			251	
268	8.27	8.24	34.109	26.538	153.7	0.621	1.94	29.4	40.5	2.36	29.9	0.03			270	205
300 ISL	7.90	7.87	34.133	26.612	147.0	0.669	1.71	25.7	45.2	2.48	31.4	0.03			302	
317	7.69	7.66	34.139	26.648	143.8	0.693	1.60	23.9	47.9	2.54	32.2	0.03			319	204
378	6.73	6.70	34.160	26.799	129.8	0.777	1.05	15.3	61.7	2.83	36.1	0.03			380	203
400 ISL	6.49	6.45	34.164	26.834	126.6	0.805	0.93	13.5	65.3	2.90	37.1	0.03			403	
436	6.16	6.12	34.173	26.884	122.1	0.850	0.78	11.2	70.6	2.98	38.5	0.03			439	202
500 ISL	5.70	5.66	34.210	26.971	114.2	0.925	0.55	7.8	80.0	3.11	40.2	0.03			503	
516	5.58	5.54	34.220	26.994	112.1	0.943	0.49	7.0	82.3	3.14	40.6	0.03			520	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
35 5.2 N	120 46.5 W	18/04/98	0923 UTC	70 m	340	16 kn			1022.1 mb	13.0 C	12.1 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	10.91	10.91	33.686	25.769	221.7	0.000	4.53	72.5	18.7	1.33	16.1	0.14	4.36	0.81	0	
1		10.91	10.91	33.686	25.769	221.7	0.002	4.53	72.5	18.7	1.33	16.1	0.14	4.36	0.81	1	208
5		10.91	10.91	33.685	25.768	221.8	0.011	4.51	72.2	18.6	1.33	16.1	0.14	4.36	0.83	5	207
10		10.84	10.84	33.696	25.789	219.9	0.022	4.32	69.1	19.1	1.38	16.6	0.14	4.27	0.80	10	206
20		10.04	10.04	33.783	25.996	200.5	0.043	3.21	50.5	25.0	1.71	21.3	0.08	0.91	0.65	20	205
30		9.75	9.75	33.857	26.102	190.6	0.063	2.86	44.7	27.8	1.88	23.4	0.05	0.16	0.31	30	204
41		9.72	9.72	33.868	26.116	189.6	0.084	2.78	43.4	27.9	1.89	23.7	0.05	0.17	0.30	41	203
50		9.71	9.70	33.872	26.121	189.3	0.101	2.78	43.4	28.0	1.89	23.8	0.05	0.16	0.31	50	202
60		9.64	9.63	33.891	26.148	186.9	0.119	2.68	41.8	29.1	1.95	24.1	0.06	0.22	0.45	60	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 55.0 W	18/04/98	0510 UTC	238 m	330	20 kn			1023.3 mb	13.3 C	11.8 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	13.16	13.16	33.152	24.930	301.4	0.000	6.48	108.5	0.9	0.23	0.0	0.02	4.97	1.88	0	
2		13.16	13.16	33.152	24.930	301.5	0.006	6.48	108.5	0.9	0.23	0.0	0.02	4.97	1.88	2	215
9		13.16	13.16	33.149	24.928	301.8	0.027	6.47	108.3	0.8	0.23	0.1	0.02	5.06	1.84	9	214
10	ISL	13.10	13.10	33.152	24.943	300.5	0.030	6.39	106.8	1.1	0.26	0.5	0.03	4.89	1.83	10	
19		12.44	12.44	33.199	25.108	285.0	0.057	5.53	91.2	4.7	0.63	4.8	0.10	2.80	1.60	19	213
20	ISL	12.39	12.39	33.205	25.122	283.6	0.059	5.46	90.0	5.0	0.66	5.2	0.10	2.58	1.56	20	
29		12.00	12.00	33.265	25.243	272.4	0.084	5.02	82.1	7.4	0.85	8.0	0.10	1.05	1.13	29	212
30	ISL	11.94	11.94	33.271	25.259	270.9	0.087	4.99	81.5	7.6	0.87	8.3	0.10	0.98	1.08	30	
40		11.41	11.41	33.344	25.414	256.4	0.113	4.72	76.2	10.0	1.02	10.8	0.06	0.62	0.61	40	211
49		11.13	11.12	33.441	25.540	244.6	0.136	4.37	70.2	12.4	1.18	13.5	0.04	0.16	0.27	49	210
50	ISL	11.09	11.08	33.452	25.556	243.1	0.138	4.33	69.5	12.7	1.20	13.8	0.04	0.15	0.27	50	
59		10.74	10.73	33.553	25.697	229.9	0.160	3.96	63.1	15.3	1.38	16.6	0.03	0.10	0.22	59	209
69		10.31	10.30	33.656	25.852	215.3	0.182	3.57	56.4	18.6	1.55	19.4	0.02	0.09	0.25	69	208
75	ISL	10.09	10.08	33.713	25.934	207.6	0.195	3.39	53.3	20.4	1.64	20.8	0.02	0.07	0.23	75	
84		9.82	9.81	33.787	26.037	198.0	0.213	3.16	49.4	22.8	1.74	22.4	0.02	0.04	0.18	84	207
99		9.60	9.59	33.872	26.140	188.5	0.242	2.82	43.9	25.7	1.85	24.2	0.02	0.03	0.17	100	206
100	ISL	9.59	9.58	33.876	26.145	188.1	0.244	2.80	43.6	26.0	1.86	24.3	0.02	0.03	0.17	101	
119		9.44	9.43	33.929	26.211	182.1	0.279	2.57	39.9	31.2	2.00	25.5	0.02	0.03	0.13	120	205
125	ISL	9.36	9.35	33.944	26.236	179.9	0.290	2.52	39.0	32.2	2.03	25.8	0.02	0.03	0.13	126	
138		9.20	9.18	33.973	26.285	175.5	0.313	2.42	37.4	33.7	2.07	26.5	0.02	0.04	0.14	139	204
150	ISL	9.10	9.08	33.992	26.316	172.8	0.334	2.35	36.2	34.8	2.10	26.9	0.02	0.04	0.14	151	
170		8.99	8.97	34.012	26.349	170.0	0.368	2.27	34.9	36.0	2.13	27.4	0.01	0.03	0.13	171	203
199		8.92	8.90	34.021	26.368	168.8	0.417	2.22	34.1	36.6	2.17	27.7	0.02	0.04	0.13	200	202
200	ISL	8.89	8.87	34.024	26.375	168.1	0.419	2.21	33.9	36.9	2.18	27.8	0.02			201	
225		8.21	8.19	34.088	26.530	153.6	0.459	1.84	27.8	44.5	2.39	30.4	0.02			226	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 52.5 N	121 11.0 W	18/04/98	0132 UTC	561 m	330	20 kn	330 07 04	0	1022.8 mb	14.8 C	13.7 C	13m	02	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.80	13.80	32.774	24.509	341.5	0.000	6.11	103.4	1.0	0.29	0.0	0.00	0.42	0.09	0	
1		13.80	13.80	32.774	24.509	341.5	0.003	6.11	103.4	1.0	0.29	0.0	0.00	0.42	0.09	1	220
10	ISL	13.78	13.78	32.768	24.509	341.8	0.034	6.12	103.5	1.0	0.29	0.0	0.00	0.43	0.10	10	
15		13.77	13.77	32.765	24.509	342.0	0.051	6.12	103.5	1.0	0.29	0.0	0.00	0.44	0.10	15	219
20	ISL	13.70	13.70	32.775	24.531	340.0	0.068	6.11	103.2	1.0	0.29	0.0	0.00	0.62	0.17	20	
30		13.56	13.56	32.834	24.605	333.2	0.102	6.04	101.7	1.1	0.30	0.1	0.03	0.96	0.32	30	218
46		13.55	13.54	33.073	24.792	315.8	0.154	5.71	96.3	2.7	0.41	1.2	0.14	0.87	0.45	46	217
50	ISL	13.16	13.15	33.161	24.939	302.0	0.166	5.44	91.0	4.4	0.55	3.3	0.12	0.64	0.38	50	
54		12.69	12.68	33.252	25.102	286.5	0.178	5.14	85.2	6.4	0.71	5.9	0.09	0.41	0.30	54	216
65		11.40	11.39	33.470	25.514	247.4	0.207	4.35	70.3	12.2	1.16	13.1	0.04	0.14	0.20	65	215
75		10.84	10.83	33.593	25.710	228.9	0.231	3.90	62.3	15.7	1.38	16.6	0.03	0.06	0.11	75	214
83		10.49	10.48	33.676	25.837	217.1	0.249	3.55	56.3	19.1	1.54	18.9	0.03	0.05	0.11	83	213
93		10.41	10.40	33.698	25.868	214.4	0.271	3.46	54.8	19.9	1.58	19.5	0.03	0.07	0.12	93	212
100	ISL	10.39	10.38	33.707	25.878	213.5	0.286	3.42	54.1	20.3	1.60	19.7	0.03	0.07	0.13	100	
110		10.30	10.29	33.729	25.911	210.6	0.307	3.33	52.6	21.2	1.65	20.3	0.03	0.08	0.13	111	211
125		9.89	9.88	33.818	26.050	197.6	0.337	3.01	47.2	24.7	1.80	22.6	0.02	0.06	0.13	126	210
145		9.33	9.31	33.942	26.240	180.0	0.375	2.58	39.9	29.8	2.02	25.6	0.02	0.04	0.12	146	209
150	ISL	9.26	9.24	33.954	26.260	178.1	0.384	2.56	39.6	30.2	2.04	25.9	0.02	0.04	0.12	151	
171		9.05	9.03	33.981	26.316	173.2	0.421	2.50	38.5	31.5	2.08	26.7	0.02	0.03	0.11	172	208
200	ISL	8.68	8.66	34.047	26.426	163.2	0.470	2.20	33.6	36.4	2.23	27.9	0.02	0.03	0.10	201	
201		8.67	8.65	34.049	26.429	162.9	0.471	2.19	33.4	36.6	2.24	27.9	0.02	0.03	0.10	202	207
229		8.55	8.53	34.086	26.477	158.9	0.516	1.96	29.8	39.6	2.35	29.3	0.02			230	206
250	ISL	8.45	8.42	34.099	26.503	156.8	0.550	1.88	28.6	41.0	2.38	29.7	0.01			251	
266		8.33	8.30	34.106	26.527	154.7	0.575	1.82	27.6	42.3	2.41	30.0	0.01			268	205
300	ISL	7.86	7.83	34.138	26.622	146.0	0.626	1.56	23.4	48.4	2.57	31.7	0.02			302	
322		7.48	7.45	34.158	26.693	139.5	0.657	1.36	20.2	53.4	2.69	33.2	0.02			324	204
374		6.57	6.54	34.170	26.828	126.9	0.726	0.93	13.5	65.2	2.92	36.9	0.01			376	203
400	ISL	6.31	6.27	34.179	26.869	123.1	0.759	0.80	11.6	69.4	2.99	38.0	0.01			403	
433		6.07	6.03	34.194	26.912	119.3	0.799	0.67	9.6	74.0	3.06	38.9	0.01			436	202
500	ISL	5.70	5.66	34.243	26.997	111.7	0.876	0.44	6.3	83.0	3.19	40.2	0.02			503	
510		5.64	5.60	34.251	27.011	110.5	0.887	0.41	5.8	84.3	3.21	40.4	0.02			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 43.2 N	121 32.8 W	17/04/98	1930 UTC	950 m	320 20 kn	350 05 06	1	1025.2 mb	15.5 C	13.6 C	17m 03	1/8	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	13.85	13.85	32.870	24.573	335.4	0.000	6.10	103.4	1.1	0.28	0.0	0.00	0.33	0.12	0	
2 A	13.85	13.85	32.870	24.573	335.5	0.007	6.10	103.4	1.1	0.28	0.0	0.00	0.33	0.12	2	220
2	13.85	13.85	32.870	24.573	335.5	0.007									2	221
10 ISL	13.84	13.84	32.870	24.575	335.5	0.034	6.09	103.2	1.1	0.28	0.0	0.00	0.34	0.12	10	
12 A	13.84	13.84	32.870	24.575	335.5	0.040	6.09	103.2	1.1	0.28	0.0	0.00	0.34	0.12	12	219
20 ISL	13.78	13.78	32.878	24.594	334.0	0.067	6.10	103.2	1.1	0.28	0.0	0.00	0.36	0.13	20	
24 A	13.75	13.75	32.883	24.604	333.1	0.080	6.10	103.2	1.1	0.28	0.0	0.00	0.37	0.14	24	218
30 ISL	13.74	13.74	32.892	24.613	332.4	0.100	6.10	103.2	1.1	0.27	0.0	0.00	0.41	0.16	30	
36 A	13.73	13.72	32.898	24.620	331.9	0.120	6.10	103.1	1.1	0.27	0.0	0.00	0.44	0.17	36	217
47 A	13.75	13.74	32.914	24.629	331.4	0.157	6.09	103.0	1.1	0.28	0.0	0.00	0.46	0.18	47	216
50 ISL	13.91	13.90	32.979	24.646	329.8	0.167	6.04	102.6	1.2	0.28	0.0	0.00	0.47	0.18	50	
56	14.20	14.19	33.114	24.691	325.8	0.186	5.92	101.2	1.6	0.30	0.0	0.00	0.53	0.19	56	215
64 A	14.10	14.09	33.173	24.757	319.7	0.212	5.86	100.0	2.2	0.34	0.1	0.02	0.69	0.32	64	214
75	13.52	13.51	33.290	24.967	300.0	0.246	5.52	93.2	3.7	0.48	2.4	0.15	0.70	0.50	75	213
85	12.53	12.52	33.348	25.208	277.2	0.275	4.93	81.5	7.8	0.82	7.6	0.17	0.41	0.37	85	212
94	11.85	11.84	33.467	25.429	256.3	0.299	4.41	71.9	11.8	1.11	12.0	0.09	0.29	0.29	94	211
100 ISL	11.52	11.51	33.503	25.519	247.9	0.314	4.26	69.0	12.9	1.20	13.4	0.07	0.24	0.25	100	
109	11.16	11.15	33.534	25.608	239.5	0.336	4.13	66.4	13.9	1.26	14.5	0.05	0.20	0.20	110	210
124	10.75	10.74	33.612	25.742	227.1	0.371	3.82	60.9	16.6	1.41	16.9	0.04	0.15	0.19	125	209
125 ISL	10.71	10.70	33.620	25.755	225.8	0.373	3.79	60.4	16.9	1.43	17.2	0.04	0.14	0.19	126	
144	9.88	9.86	33.780	26.023	200.7	0.414	3.23	50.6	22.8	1.73	22.0	0.03	0.03	0.09	145	208
150 ISL	9.75	9.73	33.809	26.067	196.5	0.426	3.13	48.9	23.8	1.78	22.7	0.03	0.03	0.09	151	
170	9.45	9.43	33.883	26.175	186.7	0.464	2.86	44.4	26.6	1.91	24.3	0.03	0.02	0.08	171	207
200	8.83	8.81	34.021	26.382	167.4	0.517	2.38	36.5	33.4	2.16	27.5	0.03	0.02	0.08	201	206
228	8.34	8.32	34.067	26.494	157.1	0.563	2.14	32.4	38.6	2.30	29.4	0.03			229	205
250 ISL	8.14	8.11	34.081	26.535	153.5	0.597	2.05	30.9	40.9	2.35	30.1	0.03			251	
268	8.01	7.98	34.086	26.559	151.5	0.624	1.99	29.9	42.5	2.39	30.5	0.03			270	204
300 ISL	7.58	7.55	34.101	26.634	144.8	0.672	1.78	26.5	47.5	2.51	32.1	0.03			302	
318	7.34	7.31	34.110	26.675	141.0	0.697	1.65	24.4	50.5	2.58	33.1	0.03			320	203
378	6.84	6.80	34.143	26.771	132.5	0.780	1.22	17.9	59.3	2.79	35.4	0.03			380	202
400 ISL	6.63	6.59	34.152	26.806	129.3	0.808	1.07	15.6	62.8	2.86	36.3	0.03			403	
436	6.29	6.25	34.171	26.866	123.9	0.854	0.84	12.1	69.0	2.98	37.8	0.03			439	201
500 ISL	5.75	5.71	34.239	26.988	112.7	0.930	0.49	7.0	81.2	3.16	40.0	0.01			503	
515	5.627	5.583	34.256	27.017	110.1	0.946	0.41	5.8	84.1	3.20	40.5	0.01			519	224

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 23.5 N	122 14.7 W	17/04/98	1337 UTC	4011 m	330 24 kn	360 04 05	1	1024.9 mb	13.6 C	12.0 C		3/8	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	14.13	14.13	33.049	24.653	327.8	0.000	5.95	101.5	2.1	0.31	0.0	0.00	0.27	0.06	0	
1	14.13	14.13	33.049	24.653	327.8	0.003	5.95	101.5	2.1	0.31	0.0	0.00	0.27	0.06	1	220
10 ISL	14.14	14.14	33.048	24.651	328.3	0.033	5.96	101.7	2.1	0.31	0.0	0.00	0.27	0.05	10	
14	14.14	14.14	33.047	24.650	328.5	0.046	5.97	101.9	2.1	0.31	0.0	0.00	0.27	0.05	14	219
20 ISL	14.14	14.14	33.048	24.651	328.5	0.066	5.97	101.9	2.1	0.31	0.0	0.00	0.28	0.05	20	
29	14.15	14.15	33.049	24.650	328.9	0.095	5.96	101.8	2.1	0.32	0.0	0.00	0.29	0.05	29	218
30 ISL	14.15	14.15	33.049	24.650	328.9	0.099	5.96	101.8	2.1	0.32	0.0	0.00	0.29	0.05	30	
43	14.15	14.14	33.049	24.651	329.3	0.141	5.98	102.1	2.1	0.32	0.0	0.00	0.29	0.03	43	217
50 ISL	14.16	14.15	33.052	24.651	329.4	0.164	5.98	102.1	2.0	0.31	0.0	0.00	0.28	0.05	50	
55	14.16	14.15	33.054	24.653	329.4	0.181	5.98	102.1	2.0	0.31	0.0	0.00	0.28	0.08	55	216
64	14.24	14.23	33.119	24.687	326.5	0.210	5.91	101.1	2.0	0.31	0.0	0.00	0.44	0.13	64	215
75 ISL	14.16	14.15	33.240	24.797	316.3	0.246	5.80	99.1	2.4	0.34	0.0	0.07	0.69	0.43	75	
76	14.15	14.14	33.253	24.809	315.1	0.249	5.79	99.0	2.4	0.34	0.0	0.08	0.70	0.45	76	214
85	13.89	13.88	33.281	24.885	308.2	0.277	5.70	96.9	2.8	0.39	0.4	0.21	0.60	0.41	85	213
95	13.57	13.56	33.336	24.993	298.1	0.307	5.40	91.2	4.2	0.53	3.0	0.11	0.38	0.41	95	212
100 ISL	13.33	13.32	33.370	25.068	291.1	0.322	5.28	88.8	4.9	0.60	4.1	0.08	0.32	0.39	100	
110	12.62	12.61	33.431	25.255	273.4	0.350	5.04	83.5	6.9	0.77	6.9	0.05	0.23	0.32	111	211
124	11.00	10.98	33.482	25.597	240.9	0.386	4.55	72.9	12.2	1.16	13.2	0.02	0.10	0.15	125	210
125 ISL	10.94	10.92	33.487	25.611	239.6	0.389	4.53	72.5	12.4	1.17	13.4	0.02	0.09	0.14	126	
144	10.27	10.25	33.598	25.815	220.5	0.432	4.26	67.2	15.8	1.35	16.5	0.02	0.04	0.06	145	209
150 ISL	10.03	10.01	33.637	25.886	213.8	0.445	4.07	63.9	17.7	1.45	18.0	0.02	0.03	0.05	151	
170	9.30	9.28	33.765	26.107	193.1	0.486	3.56	55.0	23.6	1.72	22.2	0.02	0.00	0.03	171	208
198	8.66	8.64	33.909	26.321	173.1	0.537	3.88	59.2	26.6	1.68	22.4	0.02	0.00	0.02	199	207
200 ISL	8.62	8.60	33.916	26.332	172.0	0.541	3.86	58.8	27.0	1.69	22.6	0.02			201	
228	8.18	8.16	33.978	26.448	161.3	0.587			33.3	1.96	26.2	0.01			229	206
250 ISL	7.92	7.89	34.006	26.509	155.9	0.622	3.09	46.4	37.1	2.11	28.0	0.01			251	
269	7.71	7.68	34.021	26.552	152.0	0.651	2.64	39.4	40.1	2.21	29.3	0.01			271	205
300 ISL	7.31	7.28	34.039	26.623	145.6	0.698	2.28	33.7	45.6	2.37	31.4	0.02			302	
318	7.11	7.08	34.054	26.663	141.9	0.723	2.07	30.5	48.8	2.47	32.5	0.02			320	204
376	7.00	6.96	34.182	26.779	131.8	0.803	1.06	15.6	59.3	2.84	35.6	0.02			378	203
400 ISL	6.73	6.69	34.185	26.819	128.2	0.834	0.91	13.3	63.2	2.92	36.8	0.02			403	
436	6.27	6.23	34.175	26.871	123.3	0.879	0.80	11.6	68.8	3.00	38.3	0.01			439	202
500 ISL	5.82	5.78	34.210	26.956	115.7	0.956	0.57	8.1	77.7	3.14	40.0	0.01			503	
511	5.74	5.70	34.216	26.971	114.4	0.969	0.53	7.6	79.2	3.16	40.3	0.01			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 3.3 N	122 56.2 W	17/04/98	0736 UTC	4228 m	340 20 kn			1025.9 mb	13.6 C	11.7 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	14.49	14.49	33.194	24.690	324.3	0.000	5.96	102.6	2.1	0.27	0.1	0.00	0.14	0.04	0	
2	14.49	14.49	33.194	24.690	324.4	0.006	5.96	102.6	2.1	0.27	0.1	0.00	0.14	0.04	2	220
10 ISL	14.49	14.49	33.193	24.689	324.6	0.032	5.93	102.0	2.1	0.27	0.1	0.00	0.15	0.03	10	
16	14.50	14.50	33.194	24.688	324.9	0.052	5.91	101.7	2.1	0.27	0.1	0.00	0.15	0.03	16	219
20 ISL	14.50	14.50	33.196	24.690	324.9	0.065	5.92	101.9	2.1	0.27	0.1	0.00	0.15	0.03	20	
30 ISL	14.51	14.51	33.201	24.692	325.0	0.097	5.95	102.4	2.2	0.27	0.1	0.00	0.15	0.03	30	
31	14.51	14.51	33.202	24.693	324.9	0.101	5.95	102.4	2.2	0.27	0.1	0.00	0.15	0.03	31	218
45	14.53	14.52	33.255	24.730	321.8	0.146	5.87	101.1	2.2	0.27	0.1	0.00	0.21	0.05	45	217
50 ISL	14.50	14.49	33.257	24.738	321.2	0.162	5.89	101.4	2.2	0.27	0.1	0.00	0.23	0.08	50	
55	14.47	14.46	33.259	24.746	320.6	0.178	5.90	101.5	2.2	0.27	0.1	0.00	0.26	0.10	55	216
65	14.11	14.10	33.289	24.845	311.4	0.210	5.80	99.1	2.6	0.34	0.5	0.06	0.82	0.54	65	215
74	13.46	13.45	33.332	25.012	295.7	0.237	5.39	90.9	4.7	0.55	3.7	0.07	0.54	0.48	74	214
75 ISL	13.39	13.38	33.339	25.031	293.9	0.240	5.34	89.9	5.0	0.58	4.1	0.07	0.51	0.46	75	
86	12.47	12.46	33.429	25.282	270.1	0.271	4.90	81.0	8.0	0.84	8.4	0.02	0.23	0.23	86	213
94	11.64	11.63	33.507	25.500	249.6	0.292	4.75	77.1	10.0	0.95	10.5	0.01	0.13	0.16	94	212
100 ISL	11.20	11.19	33.553	25.616	238.6	0.306	4.47	71.9	12.2	1.10	12.8	0.01	0.08	0.11	100	
110	10.71	10.70	33.610	25.747	226.2	0.330	3.98	63.4	15.7	1.35	16.5	0.01	0.04	0.06	111	211
124	10.38	10.37	33.663	25.846	217.1	0.361	3.73	59.0	18.2	1.47	18.5	0.01	0.02	0.05	125	210
125 ISL	10.35	10.34	33.669	25.856	216.2	0.363	3.77	59.6	18.1	1.46	18.4	0.01	0.02	0.05	126	
142	9.74	9.72	33.777	26.044	198.6	0.398	4.46	69.6	17.3	1.29	16.9	0.01	0.01	0.03	143	209
150 ISL	9.48	9.46	33.818	26.118	191.6	0.414	4.36	67.7	19.2	1.36	18.1	0.01	0.01	0.03	151	
165	9.07	9.05	33.881	26.234	180.8	0.442	3.98	61.2	23.5	1.56	21.1	0.01	0.00	0.02	166	208
199	8.66	8.64	33.948	26.351	170.2	0.501	3.89	59.3	26.5	1.62	22.3	0.01	0.00	0.02	200	207
200 ISL	8.64	8.62	33.950	26.356	169.8	0.503	3.88	59.1	26.7	1.63	22.4	0.01			201	
227	8.10	8.08	33.986	26.466	159.6	0.547	3.62	54.5	32.8	1.80	24.9	0.00			228	206
250 ISL	7.78	7.76	33.994	26.520	154.7	0.584	3.59	53.7	35.4	1.86	25.9	0.00			251	
266	7.57	7.54	33.991	26.548	152.2	0.608	3.57	53.1	37.0	1.90	26.5	0.00			268	205
300 ISL	6.94	6.91	33.976	26.624	145.2	0.659	3.20	46.9	43.5	2.08	29.0	0.00			302	
319	6.61	6.58	33.971	26.665	141.4	0.686	2.90	42.2	47.7	2.21	30.6	0.00			321	204
379	6.17	6.14	34.023	26.763	132.6	0.768	1.80	25.9	59.5	2.62	35.6	0.00			381	203
400 ISL	5.97	5.94	34.033	26.797	129.6	0.796	1.59	22.8	63.6	2.72	36.8	0.00			403	
439	5.62	5.58	34.053	26.856	124.1	0.845	1.30	18.5	70.8	2.86	38.5	0.00			442	202
500 ISL	5.34	5.30	34.120	26.943	116.4	0.918	0.82	11.6	79.6	3.04	40.4	0.00			503	
515	5.27	5.23	34.137	26.965	114.5	0.936	0.70	9.9	81.8	3.08	40.9	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 41.8 N	123 37.3 W	17/04/98	0140 UTC	4450 m	340 16 kn	340 04 04	1	1025.8 mb	15.2 C	12.2 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	14.46	14.46	33.155	24.666	326.6	0.000	5.94	102.1	2.3	0.29	0.0	0.00	0.16	0.03	0	
1	14.46	14.46	33.155	24.666	326.6	0.003	5.94	102.1	2.3	0.29	0.0	0.00	0.16	0.03	1	220
10 ISL	14.46	14.46	33.157	24.668	326.7	0.033	5.93	102.0	2.3	0.28	0.0	0.00	0.16	0.03	10	
15	14.46	14.46	33.158	24.669	326.7	0.049	5.93	102.0	2.3	0.28	0.0	0.00	0.16	0.03	15	219
20 ISL	14.43	14.43	33.155	24.673	326.5	0.065	5.93	101.9	2.3	0.28	0.0	0.00	0.16	0.03	20	
30	14.37	14.37	33.147	24.680	326.1	0.098	5.94	101.9	2.2	0.28	0.0	0.00	0.18	0.04	30	218
44	14.29	14.28	33.135	24.688	325.8	0.144	5.93	101.6	2.2	0.28	0.0	0.00	0.21	0.05	44	217
50 ISL	14.29	14.28	33.136	24.689	325.9	0.163	5.93	101.6	2.2	0.28	0.0	0.00	0.22	0.05	50	
61	14.29	14.28	33.137	24.690	326.1	0.199	5.93	101.6	2.1	0.28	0.0	0.00	0.24	0.05	61	216
75 ISL	14.88	14.87	33.306	24.695	326.0	0.245	5.85	101.5	2.1	0.26	0.0	0.00	0.28	0.09	75	
76	14.93	14.92	33.321	24.696	326.0	0.248	5.84	101.5	2.1	0.26	0.0	0.00	0.28	0.09	76	215
84	15.23	15.22	33.471	24.747	321.5	0.274	5.77	100.9	2.3	0.22	0.0	0.00	0.39	0.20	84	214
95	15.45	15.44	33.656	24.841	312.9	0.309	5.65	99.4	2.8	0.24	0.2	0.01	0.53	0.34	95	213
100 ISL	15.20	15.18	33.731	24.954	302.2	0.324	5.51	96.5	3.3	0.29	1.1	0.05	0.44	0.34	100	
103	14.92	14.90	33.758	25.036	294.5	0.333	5.41	94.2	3.7	0.33	1.8	0.07	0.37	0.34	103	212
114	12.98	12.96	33.652	25.356	264.0	0.364	5.14	86.0	6.2	0.61	5.5	0.05	0.25	0.25	115	211
124	12.02	12.00	33.649	25.540	246.6	0.389	4.96	81.3	8.3	0.77	8.1	0.04	0.15	0.15	125	210
125 ISL	11.91	11.89	33.643	25.556	245.1	0.392	4.91	80.3	8.8	0.81	8.6	0.04	0.14	0.14	126	
139	10.56	10.54	33.582	25.752	226.4	0.425	4.09	64.9	16.0	1.34	16.4	0.03	0.05	0.06	140	209
150 ISL	10.40	10.38	33.699	25.871	215.3	0.449	3.47	54.9	19.9	1.59	19.7	0.03	0.02	0.05	151	
164	10.19	10.17	33.809	25.993	204.0	0.478	2.97	46.8	23.0	1.75	21.8	0.03	0.00	0.04	165	208
192	9.25	9.23	33.828	26.164	188.0	0.533	3.69	57.0	23.8	1.63	21.7	0.03	0.00	0.02	193	207
200 ISL	9.09	9.07	33.857	26.213	183.5	0.548	3.78	58.2	24.1	1.62	21.7	0.03			201	
228	8.64	8.62	33.960	26.364	169.5	0.598	4.08	62.2	26.7	1.57	21.7	0.03			229	206
250 ISL	8.18	8.15	33.989	26.457	160.9	0.634	3.55	53.6	32.3	1.81	24.8	0.03			251	
269	7.79	7.76	33.996	26.520	155.0	0.664	2.99	44.7	37.6	2.05	27.8	0.03			271	205
300 ISL	7.24	7.21	33.994	26.597	147.9	0.711	2.75	40.6	43.0	2.19	29.8	0.02			302	
320	6.97	6.94	33.994	26.635	144.5	0.740	2.65	38.9	46.0	2.25	30.7	0.02			322	204
377	6.69	6.66	34.068	26.731	136.1	0.820	1.69	24.6	55.7	2.64	34.5	0.02			379	203
400 ISL	6.56	6.52	34.097	26.772	132.5	0.851	1.39	20.2	59.6	2.74	35.8	0.02			403	
439	6.30	6.26	34.138	26.838	126.5	0.901	0.99	14.3	66.2	2.87	37.6	0.02			442	202
500 ISL	5.75	5.71	34.164	26.929	118.3	0.976	0.68	9.7	76.4	3.03	39.8	0.02			503	
512	5.64	5.60	34.170	26.947	116.6	0.990	0.62	8.8	78.4	3.06	40.2	0.02			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 23.2 N	124 19.9 W	16/04/98	1858 UTC	4486 m	350 14 kn	350 03 08	2	1026.9 mb	15.3 c	12.0 c	28m 01	8/8	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	15.22	15.22	33.424	24.710	322.4	0.000	5.81	101.6	2.4	0.25	0.0	0.00	0.09	0.02	0	
1	A	15.22	15.22	33.424	24.710	322.4	0.003	5.81	101.6	2.4	0.25	0.0	0.00	0.09	0.02	1	222
2		15.22	15.22	33.425	24.711	322.4	0.006									2	223
10	ISL	15.21	15.21	33.425	24.713	322.4	0.032	5.81	101.6	2.4	0.25	0.0	0.00	0.09	0.02	10	
20	ISL	15.20	15.20	33.429	24.719	322.2	0.064	5.81	101.6	2.4	0.24	0.0	0.00	0.09	0.02	20	
21	A	15.20	15.20	33.430	24.720	322.1	0.068	5.81	101.6	2.4	0.24	0.0	0.00	0.09	0.02	21	221
30		15.21	15.21	33.435	24.722	322.2	0.097	5.80	101.4	2.4	0.23	0.0	0.00	0.09	0.02	30	220
40	A	15.22	15.21	33.438	24.722	322.5	0.129	5.81	101.6	2.4	0.23	0.0	0.00	0.10	0.02	40	219
49		15.24	15.23	33.451	24.728	322.2	0.158	5.79	101.3	2.4	0.23	0.0	0.00	0.10	0.02	49	218
50	ISL	15.25	15.24	33.456	24.730	322.0	0.161	5.79	101.3	2.4	0.23	0.0	0.00	0.10	0.02	50	
60	A	15.37	15.36	33.503	24.740	321.4	0.193	5.77	101.2	2.4	0.23	0.0	0.00	0.12	0.03	60	217
68		15.35	15.34	33.500	24.742	321.4	0.219	5.78	101.4	2.4	0.23	0.0	0.00	0.12	0.04	68	216
75	ISL	15.36	15.35	33.501	24.741	321.8	0.242	5.78	101.4	2.4	0.23	0.0	0.00	0.14	0.04	75	
76	A	15.36	15.35	33.501	24.741	321.8	0.245	5.78	101.4	2.4	0.23	0.0	0.00	0.14	0.04	76	215
87		15.37	15.36	33.503	24.741	322.2	0.280	5.77	101.2	2.4	0.23	0.0	0.00	0.15	0.05	87	214
97		15.40	15.39	33.514	24.743	322.3	0.312	5.76	101.1	2.4	0.22	0.0	0.00	0.18	0.06	97	213
100	ISL	15.44	15.42	33.531	24.747	321.9	0.322	5.76	101.2	2.4	0.22	0.0	0.00	0.21	0.07	100	
106	A	15.49	15.47	33.557	24.756	321.3	0.341	5.73	100.8	2.4	0.22	0.0	0.00	0.28	0.11	106	212
116		15.33	15.31	33.625	24.844	313.2	0.373	5.60	98.2	2.7	0.27	0.6	0.04	0.40	0.24	117	211
124		15.24	15.22	33.757	24.966	301.8	0.398	5.51	96.6	3.1	0.27	0.9	0.06	0.40	0.35	125	210
125	ISL	15.11	15.09	33.753	24.992	299.4	0.401	5.49	96.0	3.3	0.29	1.1	0.06	0.39	0.35	126	
140		12.63	12.61	33.628	25.407	259.8	0.443	5.12	85.0	6.5	0.63	5.8	0.06	0.22	0.23	141	209
150	ISL	11.74	11.72	33.643	25.588	242.6	0.468	4.98	81.1	8.3	0.78	8.2	0.04	0.14	0.15	151	
164		10.96	10.94	33.700	25.774	225.0	0.500	4.82	77.2	10.9	0.96	11.1	0.02	0.07	0.06	165	208
194		9.66	9.64	33.783	26.063	197.9	0.564	4.29	66.8	18.5	1.46	17.7	0.02	0.01	0.03	195	207
200	ISL	9.49	9.47	33.809	26.111	193.4	0.576	4.23	65.7	19.8	1.50	18.5	0.02			201	
229		8.84	8.82	33.924	26.305	175.2	0.629	4.02	61.5	25.4	1.58	21.6	0.02			230	206
250	ISL	8.47	8.44	33.968	26.397	166.8	0.665	3.79	57.6	29.2	1.69	23.5	0.02			251	
268		8.18	8.15	33.987	26.456	161.4	0.695	3.58	54.0	32.3	1.80	24.9	0.02			269	205
300	ISL	7.59	7.56	33.991	26.546	153.1	0.745	3.32	49.4	37.9	1.95	27.1	0.02			302	
318		7.27	7.24	33.985	26.586	149.3	0.772	3.18	47.0	41.1	2.04	28.2	0.02			320	204
378		6.36	6.33	33.976	26.702	138.5	0.858	2.57	37.2	52.4	2.36	32.3	0.02			380	203
400	ISL	6.15	6.11	33.990	26.740	135.1	0.888	2.23	32.1	57.1	2.49	34.1	0.02			402	
436		5.88	5.84	34.023	26.800	129.6	0.936	1.66	23.7	64.8	2.70	36.8	0.02			439	202
500	ISL	5.50	5.46	34.092	26.902	120.5	1.016	1.01	14.3	76.1	2.94	39.6	0.02			503	
516		5.41	5.37	34.110	26.927	118.2	1.035	0.85	12.0	78.9	3.00	40.3	0.02			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 31.5 W	15/04/98	0412 UTC	75 m	340 13 kn			1017.3 mb	11.9 c	9.6 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	12.34	12.34	33.461	25.330	263.4	0.000	5.38	88.7	11.3	0.96	10.1	0.13	3.18	0.65	0	
2		12.34	12.34	33.461	25.330	263.4	0.005	5.38	88.7	11.3	0.96	10.1	0.13	3.18	0.65	2	208
6		12.26	12.26	33.475	25.356	261.0	0.016	5.27	86.7	11.6	0.97	10.4	0.13	2.83	0.67	6	207
9		11.89	11.89	33.565	25.496	247.8	0.023	4.60	75.2	14.9	1.21	13.4	0.17	1.98	0.42	9	206
10	ISL	11.89	11.89	33.573	25.502	247.2	0.026	4.59	75.0	15.0	1.22	13.5	0.17	1.94	0.43	10	
19		11.86	11.86	33.641	25.561	241.9	0.048	4.51	73.7	16.3	1.32	14.6	0.20	1.54	0.49	19	205
20	ISL	11.84	11.84	33.645	25.568	241.3	0.050	4.49	73.3	16.4	1.33	14.7	0.20	1.44	0.47	20	
30		11.54	11.54	33.686	25.656	233.2	0.074	4.08	66.2	17.8	1.43	16.2	0.20	0.59	0.25	30	204
39		11.06	11.06	33.747	25.790	220.5	0.094	3.45	55.4	20.4	1.59	18.5	0.16	0.63	0.32	39	203
49		10.78	10.77	33.803	25.884	211.9	0.116	3.23	51.6	22.9	1.70	20.0	0.14	0.62	0.37	49	202
50	ISL	10.77	10.76	33.806	25.888	211.5	0.118	3.21	51.3	23.0	1.71	20.1	0.14	0.61	0.37	50	
59		10.64	10.63	33.829	25.929	207.8	0.137	3.06	48.7	23.9	1.76	20.9	0.13	0.50	0.40	59	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 48.1 W	15/04/98	0704 UTC	791 m	280 18 kn			1017.7 mb	12.0 c	9.5 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	13.71	13.71	33.173	24.836	310.4	0.000	6.67	112.9	0.3	0.23	0.0	0.00	2.06	0.81	0	
1		13.71	13.71	33.173	24.836	310.4	0.003	6.67	112.9	0.3	0.23	0.0	0.00	2.06	0.81	1	220
10	ISL	13.69	13.69	33.183	24.848	309.5	0.031	6.65	112.6	0.3	0.23	0.0	0.00	2.09	0.82	10	
11		13.69	13.69	33.184	24.849	309.5	0.034	6.65	112.6	0.3	0.23	0.0	0.00	2.09	0.82	11	219
20		13.49	13.49	33.236	24.930	302.0	0.062	6.47	109.1	0.4	0.28	0.0	0.00	2.64	0.81	20	218
30		13.21	13.21	33.213	24.969	298.6	0.092	5.88	98.6	2.3	0.46	1.7	0.07	4.20	1.31	30	217
40		13.03	13.02	33.268	25.047	291.4	0.121	5.59	93.4	4.3	0.56	3.3	0.13	2.24	1.15	40	216
50		12.52	12.51	33.327	25.193	277.7	0.150	5.02	83.0	7.2	0.80	7.4	0.11	0.88	0.88	50	215
60		11.58	11.57	33.395	25.423	256.0	0.176	4.65	75.4	10.3	1.03	11.2	0.09	0.26	0.47	60	214
70		10.95	10.94	33.583	25.683	231.5	0.201	3.94	63.1	15.4	1.35	16.2	0.03	0.14	0.29	70	213
75	ISL	10.73	10.72	33.624	25.754	224.8	0.212	3.77	60.1	17.1	1.44	17.6	0.03	0.12	0.28	75	
83		10.46	10.45	33.662	25.831	217.6	0.230	3.59	56.9	19.2	1.53	19.0	0.02	0.10	0.27	83	212
99		10.12	10.11	33.770	25.974	204.4	0.264	3.15	49.6	22.8	1.72	21.4	0.02	0.10	0.23	100	211
100	ISL	10.09	10.08	33.777	25.984	203.4	0.266	3.12	49.1	23.1	1.73	21.6	0.02	0.10	0.23	101	
118		9.68	9.67	33.880	26.134	189.5	0.301	2.74	42.7	27.2	1.92	24.3	0.02	0.08	0.21	119	210
125	ISL	9.59	9.58	33.900	26.164	186.8	0.314	2.67	41.6	28.0	1.95	24.8	0.02	0.08	0.21	126	
138		9.44	9.42	33.926	26.209	182.7	0.338	2.59	40.2	29.1	1.99	25.4	0.02	0.07	0.21	139	209
150	ISL	9.22	9.20	33.963	26.274	176.8	0.360	2.48	38.3	31.0	2.05	26.3	0.02	0.07	0.18	151	
169		8.90	8.88	34.017	26.367	168.2	0.392	2.33	35.7	33.9	2.15	27.6	0.02	0.06	0.13	170	208
200		8.70	8.68	34.050	26.425	163.3	0.444	2.26	34.5	35.6	2.20	28.3	0.01	0.10	0.11	201	207
230		8.47	8.45	34.094	26.495	157.1	0.492	2.04	31.0	38.8	2.30	29.4	0.01			231	206
250	ISL	8.21	8.18	34.114	26.551	152.1	0.523	1.88	28.4	41.9	2.39	30.4	0.01			252	
271		7.92	7.89	34.129	26.606	147.1	0.554	1.72	25.8	45.3	2.48	31.5	0.01			273	205
300	ISL	7.61	7.58	34.141	26.661	142.2	0.596	1.53	22.8	49.3	2.58	32.8	0.01			302	
319		7.42	7.39	34.145	26.691	139.5	0.623	1.42	21.1	51.9	2.64	33.6	0.01			321	204
371		6.88	6.85	34.158	26.777	131.9	0.693	1.10	16.1	59.9	2.82	35.9	0.01			373	203
400	ISL	6.60	6.56	34.175	26.828	127.2	0.731	0.91	13.3	64.8	2.90	37.0	0.01			403	
437		6.27	6.23	34.201	26.892	121.4	0.777	0.68	9.8	70.9	3.00	38.3	0.01			440	202
500	ISL	5.81	5.77	34.237	26.979	113.6	0.851	0.47	6.7	80.1	3.15	40.1	0.01			503	
514		5.71	5.67	34.245	26.998	111.9	0.867	0.42	6.0	82.1	3.18	40.5	0.01			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 9.1 N	121 8.7 W	15/04/98	1050 UTC	2154 m	330	17 kn			1017.2 mb	11.5 C	9.6 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	14.21	14.21	33.103	24.678	325.4	0.000	5.95	101.7	2.0	0.29	0.1	0.00	0.37	0.10	0	
1		14.21	14.21	33.103	24.678	325.4	0.003	5.95	101.7	2.0	0.29	0.1	0.00	0.37	0.10	1	220
10	ISL	14.22	14.22	33.103	24.677	325.8	0.033	5.95	101.8	2.0	0.29	0.1	0.00	0.36	0.10	10	
15		14.22	14.22	33.103	24.677	326.0	0.049	5.95	101.8	2.0	0.29	0.1	0.00	0.36	0.10	15	219
20	ISL	14.22	14.22	33.105	24.679	325.9	0.065	5.95	101.8	2.0	0.29	0.1	0.00	0.36	0.10	20	
30		14.23	14.23	33.109	24.680	326.1	0.098	5.96	102.0	2.0	0.29	0.1	0.00	0.35	0.11	30	218
46		14.19	14.18	33.104	24.685	326.1	0.150	5.93	101.4	2.0	0.28	0.1	0.00	0.44	0.16	46	217
50	ISL	14.08	14.07	33.124	24.723	322.5	0.163	5.92	101.0	2.3	0.30	0.2	0.03	0.77	0.27	50	
54		13.98	13.97	33.155	24.768	318.4	0.176	5.91	100.6	2.7	0.33	0.4	0.05	1.05	0.38	54	216
65		13.93	13.92	33.314	24.901	306.0	0.210	5.67	96.5	3.2	0.45	1.5	0.49	0.70	0.47	65	215
74		13.47	13.46	33.389	25.054	291.7	0.237	5.12	86.4	5.9	0.67	5.5	0.09	0.43	0.38	74	214
75	ISL	13.44	13.43	33.405	25.072	290.0	0.240	5.04	85.0	6.3	0.70	5.9	0.08	0.41	0.37	75	
85		13.06	13.05	33.544	25.256	272.7	0.268	4.39	73.5	9.7	0.97	9.8	0.02	0.22	0.25	85	213
95		12.43	12.42	33.570	25.400	259.2	0.295	4.15	68.6	11.8	1.11	12.2	0.02	0.13	0.19	95	212
100	ISL	12.11	12.10	33.580	25.469	252.8	0.307	4.07	66.8	12.8	1.18	13.2	0.02	0.15	0.19	100	
110		11.60	11.59	33.604	25.583	242.1	0.332	3.93	63.8	14.5	1.29	14.8	0.02	0.19	0.19	111	211
124		11.37	11.35	33.656	25.666	234.5	0.366	3.66	59.2	16.5	1.39	16.5	0.02	0.06	0.15	125	210
125	ISL	11.30	11.28	33.658	25.680	233.1	0.368	3.66	59.1	16.7	1.40	16.7	0.02	0.06	0.15	126	
141		10.01	9.99	33.698	25.937	208.8	0.403	3.68	57.8	20.4	1.56	19.9	0.02	0.02	0.09	142	209
150	ISL	9.65	9.63	33.751	26.038	199.2	0.422	3.51	54.7	22.7	1.66	21.5	0.02	0.02	0.07	151	
167		9.25	9.23	33.855	26.185	185.5	0.454	3.12	48.2	26.8	1.84	24.0	0.02	0.01	0.05	168	208
198		8.59	8.57	33.959	26.371	168.3	0.509	2.85	43.4	32.3	2.01	26.7	0.02	0.02	0.05	199	207
200	ISL	8.57	8.55	33.964	26.378	167.7	0.512	2.84	43.2	32.5	2.02	26.8	0.02			201	
230		8.26	8.24	34.022	26.471	159.3	0.562	2.66	40.2	36.1	2.12	28.2	0.02			231	206
250	ISL	7.98	7.95	34.031	26.520	154.9	0.593	2.58	38.8	39.9	2.17	29.1	0.02			251	
270		7.73	7.70	34.042	26.565	150.8	0.624	2.43	36.3	44.1	2.25	30.1	0.02			272	205
300	ISL	7.60	7.57	34.125	26.650	143.3	0.668	1.75	26.1	49.4	2.50	32.2	0.01			302	
320		7.52	7.49	34.183	26.707	138.1	0.696	1.28	19.0	53.0	2.67	33.7	0.01			322	204
373		6.83	6.80	34.223	26.835	126.4	0.766	0.84	12.3	64.5	2.91	36.6	0.01			375	203
400	ISL	6.55	6.51	34.232	26.880	122.3	0.799	0.72	10.5	68.8	2.99	37.7	0.01			403	
439		6.18	6.14	34.241	26.935	117.3	0.846	0.60	8.7	74.4	3.08	39.1	0.01			442	202
500	ISL	5.65	5.61	34.262	27.018	109.7	0.915	0.39	5.6	83.7	3.19	40.9	0.01			503	
512		5.54	5.50	34.267	27.036	108.1	0.928	0.35	5.0	85.5	3.21	41.2	0.01			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 48.8 N	121 51.0 W	15/04/98	1834 UTC	3627 m	330	10 kn	320 04 07	1	1020.1 mb	14.0 C	11.6 C	19m 03	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	14.23	14.23	33.094	24.667	326.4	0.000	5.99	102.5	1.9	0.30	0.0	0.00	0.32	0.09	0	
2	A	14.23	14.23	33.094	24.667	326.5	0.007	5.99	102.5	1.9	0.30	0.0	0.00	0.32	0.09	2	222
2		14.22	14.22	33.094	24.670	326.3	0.007									2	223
10	ISL	14.20	14.20	33.094	24.674	326.1	0.033	5.99	102.4	1.9	0.30	0.0	0.00	0.32	0.10	10	
15	A	14.18	14.18	33.096	24.680	325.7	0.049	5.99	102.4	1.9	0.30	0.0	0.00	0.32	0.10	15	221
20	ISL	14.18	14.18	33.102	24.685	325.4	0.065	5.99	102.4	1.9	0.30	0.0	0.00	0.32	0.09	20	
27	A	14.19	14.19	33.109	24.688	325.2	0.088	5.98	102.2	1.9	0.30	0.0	0.00	0.34	0.09	27	220
30	ISL	14.19	14.19	33.108	24.687	325.4	0.098	5.98	102.2	1.9	0.30	0.0	0.00	0.35	0.10	30	
41	A	14.18	14.17	33.106	24.688	325.6	0.134	5.98	102.2	1.9	0.30	0.0	0.00	0.41	0.13	41	219
46		14.36	14.35	33.221	24.740	320.9	0.150	5.87	100.7	1.8	0.31	0.0	0.03	0.85	0.38	46	218
50	ISL	14.32	14.31	33.263	24.780	317.1	0.162	5.84	100.2	2.0	0.33	0.1	0.09	1.07	0.53	50	
53	A	14.23	14.22	33.279	24.812	314.2	0.172	5.82	99.7	2.2	0.35	0.2	0.15	1.13	0.60	53	217
61		14.01	14.00	33.315	24.885	307.4	0.197	5.65	96.3	2.7	0.41	1.1	0.30	0.80	0.58	61	216
72	A	13.70	13.69	33.437	25.044	292.6	0.230	5.24	88.8	4.7	0.58	4.0	0.11	0.44	0.44	72	215
75	ISL	13.47	13.46	33.444	25.096	287.7	0.238	5.16	87.1	5.3	0.63	4.9	0.08	0.36	0.39	75	
78		13.18	13.17	33.454	25.162	281.5	0.247	5.02	84.2	6.4	0.72	6.3	0.06	0.29	0.33	78	214
84		12.41	12.40	33.533	25.375	261.3	0.263	4.28	70.7	10.9	1.09	11.4	0.03	0.13	0.19	84	213
94		12.02	12.01	33.575	25.481	251.4	0.289	3.99	65.4	13.0	1.22	13.5	0.03	0.12	0.20	94	212
100	ISL	11.63	11.62	33.612	25.583	241.8	0.304	3.80	61.7	14.8	1.32	15.1	0.03	0.11	0.21	100	
108		11.11	11.10	33.662	25.717	229.2	0.323	3.58	57.5	17.2	1.45	17.2	0.02	0.09	0.22	109	211
125		10.61	10.60	33.724	25.854	216.4	0.360	3.34	53.1	19.9	1.60	19.5	0.02	0.07	0.25	126	210
144		10.09	10.07	33.802	26.005	202.4	0.400	3.06	48.1	23.1	1.77	21.8	0.02	0.05	0.25	145	209
150	ISL	9.88	9.86	33.812	26.048	198.4	0.412	3.06	47.9	23.9	1.79	22.3	0.02	0.04	0.23	151	
169		9.27	9.25	33.843	26.172	186.8	0.449	3.11	48.1	26.3	1.85	23.8	0.02	0.03	0.14	170	208
199		8.78	8.76	33.959	26.341	171.2	0.503	2.78	42.5	31.4	2.02	26.4	0.02	0.02	0.10	200	207
200	ISL	8.76	8.74	33.961	26.346	170.8	0.504	2.78	42.5	31.5	2.02	26.5	0.02			201	
227		8.38	8.36	33.998	26.434	162.8	0.549	2.71	41.1	34.6	2.10	27.6	0.02			228	206
250	ISL	8.12	8.09	34.021	26.491	157.6	0.586	2.60	39.2	37.0	2.17	28.5	0.02			251	
268		7.93	7.90	34.034	26.530	154.2	0.614	2.50	37.5	39.1	2.22	29.2	0.02			270	205
300	ISL	7.48	7.45	34.046	26.605	147.4	0.663	2.32	34.5	44.0	2.33	30.8	0.02			302	
317		7.25	7.22	34.051	26.641	144.1	0.687	2.20	32.5	46.8	2.39	31.7	0.02			319	204
377		6.68	6.65	34.088	26.749	134.4	0.771	1.54	22.5	56.9	2.67	35.0	0.02			379	203
400	ISL	6.43	6.39	34.092	26.785	131.1	0.801	1.37	19.9	60.9	2.75	36.2	0.02			403	
436		6.10	6.06	34.103	26.836	126.5	0.848	1.13	16.3	66.9	2.87	37.9	0.02			439	202
500	ISL	5.91	5.87	34.189	26.929	118.4	0.926	0.68	9.7	74.9	3.06	39.4	0.01			503	
517		5.86	5.82	34.212	26.953	116.3	0.946	0.56	8.0	77.0	3.11	39.8	0.01			521	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 27.4 N	122 29.9 W	16/04/98	0029 UTC	3986 m	330 15 kn	310 03 05	1	1022.0 mb	15.7 C	12.1 C	26m 01	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	15.15	15.15	33.349	24.667	326.4	0.000	5.84	101.9	2.0	0.28	0.1	0.00	0.15	0.03	0	
1		15.15	15.15	33.349	24.667	326.4	0.003	5.84	101.9	2.0	0.28	0.1	0.00	0.15	0.03	1	220
10	ISL	15.14	15.14	33.348	24.669	326.6	0.033	5.84	101.9	1.9	0.29	0.1	0.00	0.15	0.03	10	
16		15.14	15.14	33.348	24.669	326.7	0.052	5.84	101.9	1.9	0.29	0.1	0.00	0.15	0.03	16	219
20	ISL	15.11	15.11	33.349	24.677	326.2	0.065	5.84	101.9	1.9	0.29	0.1	0.00	0.16	0.03	20	
30		15.02	15.02	33.354	24.701	324.2	0.098	5.84	101.7	1.9	0.29	0.1	0.00	0.19	0.04	30	218
46		15.03	15.02	33.367	24.709	323.9	0.150	5.84	101.7	1.9	0.29	0.1	0.00	0.24	0.06	46	217
50	ISL	15.03	15.02	33.369	24.711	323.8	0.163	5.84	101.7	1.9	0.29	0.1	0.00	0.26	0.07	50	
60		15.03	15.02	33.371	24.713	324.0	0.195	5.84	101.7	1.9	0.29	0.1	0.00	0.29	0.08	60	216
75		15.04	15.03	33.376	24.715	324.2	0.244	5.82	101.4	1.8	0.29	0.1	0.00	0.31	0.10	75	215
83		15.03	15.02	33.376	24.717	324.2	0.270	5.81	101.2	1.8	0.29	0.1	0.00	0.40	0.11	83	214
94		15.03	15.02	33.407	24.741	322.3	0.305	5.77	100.5	2.1	0.29	0.1	0.02	0.47	0.21	94	213
100	ISL	14.92	14.91	33.413	24.770	319.7	0.324	5.68	98.7	2.4	0.32	0.4	0.08	0.45	0.24	100	
103		14.81	14.79	33.417	24.797	317.2	0.334	5.62	97.4	2.6	0.35	0.7	0.11	0.43	0.25	103	212
115		13.88	13.86	33.478	25.040	294.2	0.371	5.35	91.0	4.3	0.51	3.3	0.11	0.31	0.28	116	211
125		12.98	12.96	33.567	25.291	270.5	0.399	5.14	85.9	6.0	0.63	5.5	0.07	0.25	0.39	126	210
141		11.03	11.01	33.543	25.639	237.3	0.439	4.34	69.6	13.0	1.19	13.8	0.02	0.09	0.12	142	209
150	ISL	10.51	10.49	33.582	25.761	225.8	0.460	4.07	64.5	15.6	1.35	16.4	0.02	0.05	0.09	151	
164		10.07	10.05	33.672	25.907	212.1	0.491	3.75	58.9	19.0	1.52	19.1	0.02	0.02	0.05	165	208
194		9.20	9.18	33.918	26.243	180.6	0.550	2.88	44.5	28.3	1.93	24.9	0.02	0.00	0.03	195	207
200	ISL	9.12	9.10	33.949	26.280	177.2	0.561	2.77	42.7	29.5	1.98	25.5	0.02			201	
229		8.79	8.77	34.034	26.399	166.3	0.610	2.46	37.6	33.7	2.12	27.2	0.02			230	206
250	ISL	8.36	8.33	34.039	26.469	159.9	0.645	2.49	37.7	36.4	2.16	28.2	0.02			251	
268		8.00	7.97	34.033	26.519	155.3	0.673	2.54	38.2	38.6	2.18	28.9	0.02			269	205
300	ISL	7.69	7.66	34.066	26.590	148.9	0.722	2.24	33.4	42.9	2.30	30.5	0.02			302	
320		7.57	7.54	34.091	26.627	145.7	0.751	1.98	29.5	45.8	2.40	31.5	0.02			322	204
378		7.07	7.03	34.146	26.742	135.5	0.833	1.33	19.6	55.4	2.70	34.6	0.01			380	203
400	ISL	6.87	6.83	34.160	26.780	132.0	0.862	1.14	16.7	59.2	2.79	35.7	0.01			402	
434		6.57	6.53	34.176	26.833	127.2	0.906	0.90	13.1	64.8	2.90	37.2	0.01			437	202
500	ISL	6.08	6.04	34.196	26.913	120.1	0.988	0.64	9.2	73.4	3.06	39.3	0.01			503	
512		5.99	5.95	34.200	26.927	118.8	1.002	0.59	8.5	75.0	3.09	39.7	0.01			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 9.2 N	123 13.2 W	16/04/98	0623 UTC	4227 m	360 21 kn			1024.2 mb	13.7 C	10.9 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	14.97	14.97	33.327	24.690	324.3	0.000	5.84	101.6	1.9	0.28	0.0	0.00	0.13	0.03	0	
2		14.97	14.97	33.327	24.690	324.4	0.006	5.84	101.6	1.9	0.28	0.0	0.00	0.13	0.03	2	220
10	ISL	14.97	14.97	33.326	24.689	324.7	0.032	5.85	101.7	1.8	0.28	0.0	0.00	0.14	0.04	10	
16		14.97	14.97	33.326	24.689	324.8	0.052	5.85	101.7	1.7	0.28	0.0	0.00	0.14	0.04	16	219
20	ISL	14.97	14.97	33.325	24.689	325.0	0.065	5.84	101.6	1.7	0.28	0.0	0.00	0.14	0.04	20	
29		14.97	14.97	33.324	24.688	325.3	0.094	5.82	101.2	1.7	0.28	0.0	0.00	0.14	0.03	29	218
30	ISL	14.97	14.97	33.324	24.688	325.4	0.097	5.82	101.2	1.7	0.28	0.0	0.00	0.14	0.03	30	
46		14.98	14.97	33.330	24.691	325.6	0.150	5.82	101.2	1.7	0.28	0.0	0.00	0.14	0.03	46	217
50	ISL	14.98	14.97	33.330	24.691	325.7	0.163	5.83	101.4	1.7	0.28	0.0	0.00	0.14	0.03	50	
60		14.98	14.97	33.330	24.692	325.9	0.195	5.84	101.6	1.7	0.28	0.0	0.00	0.14	0.03	60	216
74		15.06	15.05	33.388	24.719	323.7	0.241	5.81	101.2	1.7	0.29	0.0	0.00	0.21	0.06	74	215
75	ISL	15.06	15.05	33.391	24.722	323.5	0.244	5.81	101.2	1.7	0.29	0.0	0.00	0.21	0.06	75	
86		15.09	15.08	33.427	24.743	321.8	0.279	5.82	101.5	1.9	0.29	0.0	0.00	0.24	0.09	86	214
93		15.07	15.06	33.439	24.757	320.7	0.302	5.79	100.9	1.9	0.30	0.0	0.00	0.31	0.15	93	213
100	ISL	15.06	15.04	33.440	24.760	320.6	0.324	5.77	100.6	1.9	0.29	0.0	0.00	0.41	0.20	100	
103		15.06	15.04	33.441	24.761	320.6	0.334	5.76	100.4	1.9	0.29	0.0	0.00	0.44	0.21	103	212
112		15.04	15.02	33.439	24.764	320.6	0.363	5.74	100.0	1.9	0.30	0.0	0.02	0.40	0.21	112	211
123		13.76	13.74	33.465	25.055	293.0	0.396	5.10	86.6	5.2	0.62	4.7	0.09	0.24	0.22	124	210
125	ISL	13.56	13.54	33.477	25.105	288.3	0.402	5.08	85.9	5.5	0.65	5.2	0.09	0.23	0.22	126	
139		12.36	12.34	33.562	25.408	259.6	0.441	4.96	81.8	7.6	0.77	7.7	0.04	0.18	0.22	140	209
150	ISL	11.51	11.49	33.584	25.585	242.8	0.468	4.66	75.5	10.5	0.97	11.0	0.02	0.12	0.16	151	
165		10.57	10.55	33.617	25.778	224.5	0.503	4.14	65.7	15.2	1.28	15.8	0.01	0.05	0.06	166	208
193		9.68	9.66	33.822	26.090	195.3	0.562	3.17	49.4	24.1	1.77	22.5	0.01	0.00	0.03	194	207
200	ISL	9.51	9.49	33.863	26.150	189.7	0.576	3.02	46.9	25.8	1.84	23.5	0.01			201	
232		8.88	8.86	34.002	26.360	170.1	0.633	2.59	39.7	32.3	2.07	26.7	0.01			233	206
250	ISL	8.61	8.58	34.048	26.438	162.9	0.663	2.41	36.7	35.2	2.16	27.8	0.01			251	
266		8.40	8.37	34.077	26.493	157.9	0.689	2.27	34.4	37.7	2.24	28.7	0.01			267	205
300	ISL	7.89	7.86	34.118	26.602	147.9	0.741	1.89	28.3	44.3	2.42	31.1	0.01			302	
317		7.65	7.62	34.130	26.647	143.9	0.766	1.71	25.5	47.5	2.51	32.2	0.01			319	204
380		7.11	7.07	34.153	26.742	135.5	0.854	1.31	19.3	55.4	2.73	34.8	0.01			382	203
400	ISL	6.92	6.88	34.152	26.767	133.3	0.881	1.20	17.6	58.0	2.78	35.6	0.01			402	
437		6.57	6.53	34.153	26.815	129.0	0.929	1.01	14.7	63.2	2.87	37.0	0.01			440	202
500	ISL	6.02	5.98	34.190	26.916	119.8	1.007	0.69	9.9	73.4	3.06	39.3	0.01			503	
512		5.92	5.88	34.197	26.934	118.1	1.022	0.63	9.0	75.4	3.10	39.7	0.01			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 54.3 W	16/04/98	1214 UTC	4371 m	350 14 kn			1024.9 mb	14.9 C	10.8 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	15.27	15.27	33.425	24.700	323.4	0.000	5.79	101.4	2.0	0.26	0.0	0.00	0.15	0.03	0	
2	15.27	15.27	33.425	24.700	323.4	0.006	5.79	101.4	2.0	0.26	0.0	0.00	0.15	0.03	2	220
10 ISL	15.28	15.28	33.425	24.698	323.8	0.032	5.78	101.2	2.0	0.26	0.0	0.00	0.15	0.04	10	
15	15.28	15.28	33.425	24.698	324.0	0.049	5.78	101.2	2.0	0.26	0.0	0.00	0.15	0.04	15	219
20 ISL	15.28	15.28	33.425	24.698	324.1	0.065	5.78	101.2	2.0	0.26	0.0	0.00	0.15	0.04	20	
30	15.28	15.28	33.424	24.698	324.5	0.097	5.77	101.0	1.9	0.26	0.0	0.00	0.16	0.04	30	218
45	15.27	15.26	33.423	24.700	324.7	0.146	5.80	101.5	1.9	0.26	0.0	0.00	0.15	0.04	45	217
50 ISL	15.27	15.26	33.423	24.700	324.9	0.162	5.80	101.5	1.9	0.26	0.0	0.00	0.15	0.04	50	
59	15.28	15.27	33.424	24.699	325.3	0.191	5.79	101.4	1.9	0.26	0.0	0.00	0.16	0.04	59	216
74	15.28	15.27	33.425	24.700	325.6	0.240	5.77	101.0	1.9	0.26	0.0	0.00	0.16	0.04	74	215
75 ISL	15.28	15.27	33.425	24.700	325.6	0.243	5.77	101.0	1.9	0.26	0.0	0.00	0.16	0.04	75	
84	15.27	15.26	33.426	24.703	325.6	0.273	5.78	101.2	1.9	0.27	0.0	0.00	0.18	0.05	84	214
94	15.14	15.13	33.444	24.746	321.8	0.305	5.76	100.6	2.0	0.29	0.1	0.01	0.39	0.19	94	213
100 ISL	14.44	14.43	33.479	24.923	305.0	0.324	5.51	94.9	3.4	0.42	2.0	0.08	0.40	0.24	100	
105	13.72	13.71	33.513	25.100	288.3	0.339	5.27	89.4	4.8	0.56	4.0	0.13	0.41	0.26	105	212
114	12.68	12.66	33.548	25.335	266.0	0.364	5.03	83.5	6.8	0.74	6.8	0.09	0.32	0.28	115	211
123	11.40	11.38	33.511	25.547	245.7	0.387	4.58	74.0	10.9	1.07	11.9	0.04	0.20	0.19	124	210
125 ISL	11.23	11.21	33.517	25.583	242.3	0.392	4.52	72.8	11.6	1.11	12.6	0.04	0.18	0.17	126	
138	10.50	10.48	33.595	25.773	224.4	0.422	4.24	67.2	15.1	1.30	15.8	0.02	0.09	0.09	139	209
150 ISL	10.00	9.98	33.662	25.911	211.5	0.448	3.97	62.3	18.2	1.46	18.3	0.02	0.04	0.08	151	
163	9.59	9.57	33.729	26.031	200.1	0.475	3.74	58.2	21.3	1.59	20.5	0.02	0.02	0.06	164	208
193	8.84	8.82	33.848	26.245	180.2	0.532	3.56	54.5	26.6	1.75	23.4	0.02	0.00	0.03	194	207
200 ISL	8.71	8.69	33.873	26.285	176.5	0.544	3.48	53.1	27.9	1.79	24.0	0.02			201	
226	8.26	8.24	33.951	26.415	164.5	0.589	3.13	47.3	32.9	1.96	26.1	0.02			227	206
250 ISL	7.78	7.76	33.994	26.520	154.7	0.627	2.84	42.5	38.3	2.11	28.3	0.02			251	
267	7.48	7.45	34.017	26.581	149.1	0.653	2.62	38.9	42.2	2.22	29.8	0.02			268	205
300 ISL	7.17	7.14	34.069	26.666	141.4	0.701	2.00	29.5	48.9	2.44	32.4	0.02			302	
317	7.08	7.05	34.094	26.698	138.6	0.725	1.68	24.7	52.0	2.55	33.5	0.02			319	204
376	6.80	6.77	34.162	26.791	130.5	0.804	1.06	15.5	60.2	2.81	36.1	0.02			378	203
400 ISL	6.58	6.54	34.172	26.828	127.2	0.835	0.90	13.1	64.3	2.89	37.1	0.02			402	
439	6.20	6.16	34.186	26.889	121.6	0.883	0.70	10.1	70.8	3.00	38.6	0.02			442	202
500 ISL	5.82	5.78	34.235	26.976	113.9	0.955	0.47	6.7	78.8	3.13	40.1	0.02			503	
512	5.75	5.71	34.245	26.993	112.4	0.969	0.43	6.1	80.4	3.16	40.4	0.02			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 16.5 N	120 1.4 W	14/04/98	2335 UTC	575 m	260 17 kn	250 03 05	1	1017.0 mb	14.2 C	12.2 C	4m 10	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	13.11	13.11	33.498	25.208	275.0	0.000	7.07	118.5	1.1	0.36	0.1	0.05	14.42	2.36	0	
1 A	13.11	13.11	33.498	25.208	275.0	0.003	7.07	118.5	1.1	0.36	0.1	0.05	14.42	2.36	1	224
10	13.06	13.06	33.495	25.216	274.5	0.027	7.00	117.2	1.1	0.31	0.1	0.05	14.32	2.02	10	223
20	12.48	12.48	33.512	25.343	262.7	0.054	5.29	87.5	8.8	0.90	8.0	0.23	8.39	0.74	20	222
30	11.78	11.78	33.615	25.556	242.6	0.080	4.12	67.2	15.8	1.35	14.4	0.31	3.18	0.63	30	221
40	11.35	11.35	33.671	25.679	231.2	0.103	3.66	59.1	18.3	1.50	16.6	0.21	1.77	0.47	40	220
50	10.29	10.28	33.755	25.932	207.3	0.125	3.21	50.7	21.9	1.70	20.8	0.04	0.33	0.36	50	219
60	9.99	9.98	33.807	26.024	198.8	0.146	3.04	47.7	23.7	1.80	22.2	0.03	0.15	0.26	60	218
70	9.74	9.73	33.851	26.100	191.7	0.165	2.89	45.1	25.5	1.88	23.5	0.02	0.08	0.17	70	217
75 ISL	9.63	9.62	33.873	26.135	188.4	0.175	2.83	44.1	26.3	1.91	24.0	0.02	0.07	0.17	75	
84	9.51	9.50	33.920	26.192	183.2	0.191	2.67	41.5	27.9	1.98	24.8	0.02	0.05	0.17	84	216
100 ISL	9.73	9.72	34.054	26.261	177.1	0.220	2.08	32.5	31.4	2.18	26.2	0.02	0.08	0.15	101	
102	9.76	9.75	34.069	26.268	176.5	0.224	2.01	31.4	31.8	2.20	26.3	0.02	0.08	0.15	103	215
121	9.34	9.33	34.065	26.334	170.5	0.257	2.10	32.5	33.1	2.21	27.0	0.01	0.05	0.14	122	214
125 ISL	9.29	9.28	34.069	26.345	169.5	0.263	2.09	32.4	33.5	2.22	27.2	0.01	0.05	0.13	126	
138	9.19	9.17	34.085	26.374	167.0	0.285	2.00	30.9	34.8	2.26	27.7	0.01	0.04	0.12	139	213
150 ISL	9.13	9.11	34.104	26.399	164.9	0.305	1.90	29.3	35.9	2.30	28.1	0.01	0.05	0.13	151	
167	9.06	9.04	34.130	26.431	162.2	0.333	1.74	26.8	37.5	2.37	28.7	0.01	0.07	0.14	168	212
200	8.80	8.78	34.157	26.493	156.8	0.386	1.52	23.3	41.1	2.48	29.9	0.01	0.07	0.11	201	211
227	8.48	8.46	34.165	26.550	151.9	0.427	1.43	21.7	44.5	2.55	30.7	0.01			228	210
250 ISL	8.25	8.22	34.172	26.590	148.4	0.462	1.36	20.6	47.2	2.60	31.3	0.01			252	
264	8.11	8.08	34.176	26.615	146.3	0.482	1.30	19.6	48.9	2.64	31.7	0.01			266	209
300 ISL	7.75	7.72	34.194	26.682	140.3	0.534	1.06	15.9	54.8	2.78	32.8	0.01			302	
316	7.59	7.56	34.201	26.711	137.7	0.556	0.95	14.2	57.6	2.84	33.3	0.01			318	208
374	7.05	7.01	34.205	26.791	130.8	0.634	0.73	10.7	66.5	2.98	34.4	0.00			377	207
400 ISL	6.88	6.84	34.215	26.822	128.1	0.668	0.60	8.8	71.5	3.07	34.0	0.00			403	
433	6.70	6.66	34.228	26.857	125.1	0.710	0.45	6.6	77.4	3.17	33.4	0.00			436	206
500 ISL	6.36	6.31	34.230	26.904	121.3	0.792	0.36	5.2	83.1	3.26	33.6	0.00			504	
511	6.32	6.27	34.230	26.909	120.9	0.805	0.35	5.1	83.4	3.26	33.6	0.00			515	205
534	6.30	6.25	34.234	26.915	120.7	0.833	0.35	5.1	83.3	3.27	34.0	0.01			538	204
549	6.27	6.22	34.229	26.916	120.9	0.851	0.37	5.3	83.0	3.28	34.4	0.03			553	203
559	6.25	6.20	34.237	26.924	120.1	0.863	0.37	5.3	83.0	3.28	34.5	0.38			563	202
569	6.20	6.15	34.227	26.923	120.3	0.875	0.45	6.5	81.7	3.25	35.1	0.36			573	201

A) SANTA BARBARA BASIN STATION.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 13.8 N	119 24.7 W	14/04/98	1830 UTC	35 m	250	12 kn	250 02 06	1	1017.7 mb	14.0 c	10.9 c	12m 05	2/8	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	12.73	12.73	33.625	25.382	258.5	0.000	5.34	88.8	8.4	0.89	8.2	0.18	3.57	0.82	0	
1	A	12.73	12.73	33.625	25.382	258.5	0.003	5.34	88.8	8.4	0.89	8.2	0.18	3.57	0.82	1	205
1		12.73	12.73	33.624	25.381	258.6	0.003									1	206
5		12.66	12.66	33.634	25.402	256.6	0.013	5.32	88.4	8.3	0.88	8.3	0.17	3.64	0.82	5	204
9	A	12.48	12.48	33.625	25.430	254.1	0.023	5.19	85.9	9.0	0.93	8.8	0.17	4.13	0.94	9	203
10	ISL	12.47	12.47	33.627	25.434	253.8	0.026	5.17	85.5	9.1	0.94	8.9	0.17	4.09	0.93	10	
17	A	12.39	12.39	33.632	25.453	252.1	0.043	5.01	82.8	9.7	0.99	9.7	0.17	3.35	0.86	17	202
20	ISL	12.36	12.36	33.644	25.469	250.7	0.051	4.90	80.9	10.5	1.06	10.6	0.16	3.21	0.85	20	
26	A	12.30	12.30	33.667	25.498	248.1	0.066	4.68	77.2	12.2	1.20	12.4	0.14	2.92	0.82	26	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 30.3 W	14/04/98	1424 UTC	132 m	300	11 kn	310 02 06	1	1021.2 mb	13.7 c	10.9 c		3/8	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	13.02	13.02	33.508	25.234	272.5	0.000	5.81	97.2	3.8	0.56	3.4	0.14	7.91	1.96	0	
1		13.02	13.02	33.508	25.234	272.5	0.003	5.81	97.2	3.8	0.56	3.4	0.14	7.91	1.96	1	212
10		13.02	13.02	33.508	25.234	272.8	0.027	5.82	97.3	3.8	0.56	3.5	0.14	8.49	1.81	10	211
20		13.02	13.02	33.510	25.236	272.9	0.055	5.86	98.0	3.9	0.59	3.7	0.15	8.73	1.88	20	210
29		12.97	12.97	33.523	25.256	271.2	0.079	5.64	94.2	4.7	0.64	4.4	0.16	7.91	1.96	29	209
30	ISL	12.89	12.89	33.530	25.277	269.2	0.082	5.49	91.6	5.6	0.70	5.3	0.17	7.23	1.87	30	
39		12.09	12.08	33.638	25.516	246.7	0.105	3.98	65.3	14.4	1.27	14.0	0.21	1.08	0.94	39	208
50		11.71	11.70	33.830	25.736	226.0	0.131	2.90	47.3	19.8	1.63	19.0	0.04	0.38	0.78	50	207
61		11.45	11.44	33.851	25.801	220.1	0.155	2.81	45.6	21.0	1.69	19.8	0.03	0.30	0.68	61	206
68		11.37	11.36	33.870	25.831	217.4	0.171	2.73	44.2	21.5	1.73	20.3	0.03	0.86 U	0.76 U	68	205
75	ISL	11.15	11.14	33.857	25.861	214.7	0.186	2.79	44.9	21.8	1.73	20.5	0.02	0.19	0.52	75	
84		10.82	10.81	33.836	25.903	210.8	0.205	2.89	46.2	22.3	1.73	20.8	0.02	0.15	0.43	84	204
98		10.47	10.46	33.870	25.991	202.7	0.234	2.76	43.8	24.6	1.84	22.0	0.05	0.17	0.38	99	203
100	ISL	10.45	10.44	33.875	25.999	202.1	0.238	2.74	43.5	24.8	1.85	22.1	0.05	0.16	0.36	101	
109		10.37	10.36	33.913	26.043	198.1	0.256	2.60	41.2	25.9	1.90	22.8	0.05	0.13	0.29	110	202
121		10.12	10.11	34.032	26.178	185.5	0.279	2.15	33.9	29.5	2.10	25.1	0.03	0.12	0.27	122	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 52.9 N	120 8.3 W	14/04/98	0740 UTC	91 m	330	12 kn			1018.0 mb	12.0 c	9.7 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	13.35	13.35	33.442	25.117	283.7	0.000	5.77	97.1	5.3	0.56	3.3	0.11	2.94	0.70	0	
2		13.35	13.35	33.442	25.117	283.7	0.006	5.77	97.1	5.3	0.56	3.3	0.11	2.94	0.70	2	210
6		13.35	13.35	33.443	25.118	283.7	0.017	5.76	97.0	5.3	0.58	3.3	0.12	2.67	0.63	6	209
10	ISL	13.35	13.35	33.439	25.115	284.1	0.028	5.75	96.8	5.3	0.58	3.3	0.12	2.67	0.63	10	
11		13.35	13.35	33.438	25.114	284.2	0.031	5.75	96.8	5.3	0.58	3.3	0.12	2.67	0.63	11	208
20		13.36	13.36	33.467	25.135	282.5	0.057	5.65	95.1	5.7	0.61	3.8	0.12	2.71	0.72	20	207
30		13.33	13.33	33.465	25.139	282.3	0.085	5.61	94.4	6.2	0.64	4.3	0.13	2.53	0.78	30	206
40		13.31	13.30	33.470	25.148	281.8	0.113	5.59	94.0	6.4	0.65	4.4	0.14	2.50	0.80	40	205
50		13.28	13.27	33.472	25.156	281.4	0.141	5.54	93.1	6.5	0.67	4.7	0.14	2.45	0.64	50	204
60		12.92	12.91	33.522	25.266	271.1	0.169	5.09	85.0	9.2	0.84	7.2	0.15	1.87	0.74	60	203
69		11.27	11.26	33.766	25.768	223.4	0.191	3.40	54.9	20.0	1.54	17.5	0.11	0.51	0.84	69	202
75	ISL	11.16	11.15	33.773	25.793	221.1	0.205	3.32	53.5	20.5	1.57	18.0	0.10	0.44	0.79	75	
79		11.09	11.08	33.778	25.810	219.6	0.213	3.27	52.6	20.8	1.59	18.4	0.10	0.39	0.75	79	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 24.6 W	14/04/98	0409 UTC	959 m	310	13 kn			1018.3 mb	13.1 c	10.7 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	13.88	13.88	33.135	24.772	316.5	0.000	6.19	105.2	0.8	0.28	0.0	0.01	1.75	0.51	0	
2		13.88	13.88	33.135	24.772	316.6	0.006	6.19	105.2	0.8	0.28	0.0	0.01	1.75	0.51	2	220
10		13.81	13.81	33.134	24.786	315.5	0.032	6.23	105.7	0.8	0.27	0.0	0.01	2.09	0.68	10	219
19		13.55	13.55	33.137	24.841	310.4	0.060	6.16	103.9	1.0	0.32	0.1	0.02	3.99	0.96	19	218
20	ISL	13.53	13.53	33.138	24.846	310.0	0.063	6.14	103.6	1.0	0.33	0.1	0.02	3.97	0.99	20	
29		13.42	13.42	33.162	24.887	306.3	0.091	5.99	100.8	1.5	0.38	0.7	0.04	3.79	1.12	29	217
30	ISL	13.41	13.41	33.166	24.892	305.9	0.094	5.98	100.6	1.6	0.39	0.8	0.04	3.76	1.10	30	
40		13.37	13.36	33.230	24.950	300.6	0.124	5.84	98.2	3.0	0.45	1.9	0.08	3.17	0.77	40	216
49		13.32	13.31	33.330	25.037	292.5	0.151	5.66	95.1	4.7	0.55	3.3	0.09	1.90	0.53	49	215
50	ISL	13.31	13.30	33.340	25.047	291.6	0.154	5.64	94.8	4.9	0.56	3.4	0.09	1.82	0.53	50	
60		13.14	13.13	33.421	25.144	282.7	0.182	5.50	92.2	6.5	0.66	4.8	0.12	1.25	0.55	60	214
69		13.03	13.02	33.456	25.193	278.2	0.208	5.36	89.6	7.7	0.76	5.9	0.21	0.83	0.55	69	213
75	ISL	12.76	12.75	33.466	25.255	272.6	0.224	5.14	85.5	8.4	0.83	7.2	0.19	0.72	0.53	75	
84		12.21	12.20	33.506	25.392	259.6	0.248	4.65	76.4	10.5	1.00	10.1	0.11	0.61	0.47	84	212
99		11.19	11.18	33.721	25.748	226.0	0.284	3.41	54.9	18.5	1.52	17.9	0.04	0.18	0.37	99	211
100	ISL	11.15	11.14	33.727	25.760	224.9	0.287	3.40	54.7	18.6	1.53	18.0	0.04	0.18	0.37	100	
119		10.60	10.59	33.764	25.887	213.2	0.328	3.26	51.9	20.2	1.63	19.5	0.04	0.14	0.31	120	210
125	ISL	10.38	10.37	33.773	25.932	209.0	0.341	3.25	51.4	21.0	1.66	20.2	0.04	0.12	0.31	126	
138		9.93	9.91	33.798	26.028	200.0	0.368	3.20	50.2	23.0	1.73	21.7	0.04	0.08	0.30	139	209
150	ISL	9.61	9.59	33.848	26.121	191.4	0.391	3.05	47.5	25.4	1.83	23.2	0.04	0.06	0.24	151	
167		9.26	9.24	33.921	26.235	180.8	0.423	2.81	43.4	28.6	1.97	24.9	0.03	0.05	0.16	168	208
198		8.85	8.83	33.983	26.349	170.5	0.477	2.66	40.8	31.8	2.07	26.2	0.03	0.04	0.14	199	207
200	ISL	8.81	8.79	33.985	26.357	169.7	0.481	2.66	40.7	32.0	2.07	26.3	0.03			201	
227		8.25	8.23	34.016	26.468	159.5	0.525	2.67	40.4	35.9	2.11	27.8	0.02			228	206
250	ISL	8.00	7.97	34.076	26.552	151.8	0.561	2.27	34.1	40.7	2.28	29.6	0.02			251	
268		7.85	7.82	34.122	26.611	146.5	0.588	1.89	28.3	44.8	2.44	31.0	0.02			270	205
300	ISL	7.48	7.45	34.160	26.694	139.0	0.633	1.46	21.7	51.3	2.64	33.1	0.02			302	
316		7.27	7.24	34.163	26.726	136.0	0.655	1.31	19.4	54.4	2.71	34.1	0.02			318	204
377		6.16	6.13	34.082	26.811	128.0	0.736	1.29	18.6	64.2	2.82	37.2	0.01			379	203
400	ISL	5.89	5.86	34.093	26.854	124.1	0.765	1.12	16.0	69.2	2.91	38.4	0.01			403	
436		5.61	5.57	34.132	26.920	118.1	0.808	0.80	11.4	76.5	3.05	40.0	0.01			439	202
500	ISL	5.54	5.50	34.203	26.985	112.7	0.882	0.51	7.2	82.1	3.18	40.9	0.01			503	
512		5.53	5.49	34.216	26.997	111.8	0.896	0.45	6.4	83.1	3.21	41.1	0.01			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 33.4 N	120 44.1 W	14/04/98	0009	UTC	1355 m	320	12 kn	320 06 05	1	1024.8 mb	15.4 C	12.1 C	14m 03	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	14.10	14.10	33.114	24.710	322.4	0.000	6.07	103.6	1.7	0.30	0.0	0.01	0.74	0.22	0	
1		14.10	14.10	33.114	24.710	322.4	0.003	6.07	103.6	1.7	0.30	0.0	0.01	0.74	0.22	1	220
10	ISL	14.04	14.04	33.113	24.722	321.5	0.032	6.08	103.6	1.6	0.30	0.0	0.01	0.72	0.25	10	
15		13.99	13.99	33.112	24.732	320.8	0.048	6.08	103.5	1.6	0.30	0.0	0.01	0.71	0.28	15	219
20	ISL	13.97	13.97	33.111	24.735	320.6	0.064	6.07	103.3	1.6	0.30	0.0	0.01	0.77	0.31	20	
30		13.94	13.94	33.113	24.743	320.1	0.096	6.04	102.7	1.7	0.30	0.0	0.01	0.95	0.38	30	218
45		13.90	13.89	33.126	24.762	318.7	0.144	6.08	103.3	1.3	0.30	0.0	0.01	1.27	0.42	45	217
50	ISL	13.88	13.87	33.150	24.785	316.7	0.160	5.98	101.6	2.0	0.33	0.3	0.04	1.07	0.37	50	
55		13.86	13.85	33.180	24.812	314.2	0.176	5.87	99.7	2.8	0.37	0.7	0.07	0.84	0.34	55	216
65		13.82	13.81	33.248	24.873	308.7	0.207	5.72	97.1	3.3	0.40	1.2	0.11	0.73	0.47	65	215
75		13.29	13.28	33.421	25.115	285.9	0.237	5.62	94.5	6.8	0.63	3.9	0.22	0.50	0.28	75	214
85		12.81	12.80	33.406	25.198	278.2	0.265	5.10	84.9	7.5	0.78	7.0	0.09	0.36	0.32	85	213
93		12.26	12.25	33.432	25.325	266.2	0.287	4.81	79.1	9.1	0.91	9.0	0.09	0.28	0.36	93	212
100	ISL	11.79	11.78	33.503	25.469	252.7	0.305	4.40	71.7	11.7	1.10	11.9	0.07	0.19	0.28	100	
109		11.32	11.31	33.628	25.652	235.4	0.327	3.79	61.2	15.7	1.37	15.7	0.03	0.09	0.14	110	211
124		11.18	11.16	33.849	25.850	216.9	0.361	2.84	45.8	21.7	1.74	19.9	0.02	0.07	0.10	125	210
125	ISL	11.17	11.15	33.856	25.857	216.3	0.363	2.83	45.6	21.9	1.75	20.0	0.02	0.07	0.10	126	
144		10.74	10.72	33.902	25.970	205.9	0.403	2.64	42.2	24.2	1.86	21.8	0.02	0.06	0.12	145	209
150	ISL	10.44	10.42	33.898	26.020	201.3	0.415	2.70	42.8	24.9	1.87	22.3	0.02	0.06	0.13	151	
169		9.46	9.44	33.890	26.178	186.3	0.452	2.93	45.5	27.4	1.91	23.8	0.03	0.04	0.15	170	208
199		8.90	8.88	33.976	26.336	171.8	0.506	2.72	41.7	31.8	2.06	26.1	0.02	0.02	0.08	200	207
200	ISL	8.88	8.86	33.977	26.340	171.4	0.508	2.72	41.7	31.9	2.06	26.1	0.02			201	
229		8.20	8.18	33.990	26.455	160.8	0.556	2.81	42.4	35.5	2.10	27.4	0.02			230	206
250	ISL	7.67	7.65	34.001	26.541	152.7	0.589	2.70	40.3	40.2	2.20	29.0	0.02			251	
268		7.27	7.24	34.014	26.609	146.4	0.616	2.53	37.4	44.6	2.31	30.5	0.02			270	205
300	ISL	6.96	6.93	34.050	26.680	139.9	0.661	2.05	30.1	51.1	2.52	32.9	0.01			302	
317		6.86	6.83	34.069	26.709	137.4	0.685	1.78	26.1	54.0	2.61	33.9	0.01			319	204
376		6.28	6.25	34.107	26.816	127.7	0.763	1.17	16.9	60.6	2.70	34.6	0.02			378	203
400	ISL	6.04	6.01	34.122	26.858	123.8	0.793	0.99	14.2	66.8	2.85	36.6	0.02			403	
437		5.72	5.68	34.145	26.917	118.5	0.838	0.77	11.0	76.5	3.09	39.9	0.01			440	202
500	ISL	5.41	5.37	34.178	26.981	113.0	0.911	0.57	8.1	83.8	3.20	41.1	0.01			503	
511		5.36	5.32	34.184	26.991	112.0	0.923	0.53	7.5	85.1	3.22	41.3	0.01			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 14.5 N	121 26.4 W	13/04/98	1823	UTC	3801 m	310	11 kn	300 04 08	2	1020.9 mb	15.2 C	13.1 C	32m 02	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	14.59	14.59	33.219	24.688	324.5	0.000	5.87	101.2	2.1	0.30	0.0	0.00	0.22	0.06	0	
2	A	14.59	14.59	33.219	24.688	324.5	0.006	5.87	101.2	2.1	0.30	0.0	0.00	0.22	0.06	2	223
2		14.59	14.59	33.219	24.688	324.5	0.006									2	224
10	ISL	14.58	14.58	33.218	24.690	324.6	0.032	5.88	101.4	2.0	0.30	0.0	0.00	0.22	0.06	10	
13		14.58	14.58	33.217	24.689	324.8	0.042	5.89	101.6	2.0	0.30	0.0	0.00	0.22	0.06	13	222
20	ISL	14.57	14.57	33.218	24.692	324.7	0.065	5.88	101.4	2.0	0.30	0.0	0.00	0.21	0.06	20	
23	A	14.57	14.57	33.218	24.692	324.8	0.075	5.88	101.4	2.0	0.30	0.0	0.00	0.21	0.06	23	221
30	ISL	14.57	14.57	33.218	24.692	325.0	0.097	5.89	101.5	2.0	0.30	0.0	0.00	0.22	0.06	30	
34		14.57	14.57	33.218	24.692	325.1	0.110	5.89	101.5	2.0	0.30	0.0	0.00	0.22	0.06	34	220
46	A	14.57	14.56	33.219	24.694	325.3	0.149	5.88	101.4	1.9	0.30	0.0	0.00	0.22	0.06	46	219
50	ISL	14.57	14.56	33.220	24.694	325.3	0.162	5.88	101.3	1.9	0.30	0.0	0.00	0.22	0.06	50	
57		14.57	14.56	33.221	24.695	325.5	0.185	5.88	101.3	1.9	0.30	0.0	0.00	0.23	0.06	57	218
68	A	14.57	14.56	33.217	24.693	326.0	0.221	5.87	101.2	1.9	0.30	0.0	0.00	0.23	0.06	68	217
75	ISL	14.56	14.55	33.219	24.697	325.9	0.244	5.87	101.1	1.8	0.30	0.0	0.01	0.26	0.09	75	
77		14.56	14.55	33.220	24.697	325.8	0.250	5.87	101.1	1.8	0.30	0.0	0.01	0.27	0.10	77	216
88	A	14.38	14.37	33.284	24.785	317.8	0.286	5.75	98.8	2.5	0.33	0.3	0.15	0.56	0.35	88	215
96		14.03	14.02	33.365	24.921	305.0	0.311	5.46	93.1	3.8	0.46	2.4	0.06	0.34	0.31	96	214
100	ISL	13.87	13.86	33.378	24.964	301.0	0.323	5.39	91.7	4.2	0.51	3.2	0.04	0.29	0.27	100	
103		13.71	13.70	33.384	25.002	297.5	0.332	5.33	90.3	4.5	0.55	3.8	0.03	0.26	0.24	103	213
112		12.76	12.74	33.437	25.233	275.6	0.358	4.96	82.5	7.0	0.77	7.2	0.03	0.18	0.18	113	212
122	A	11.79	11.77	33.496	25.464	253.7	0.384	4.57	74.5	10.4	1.02	11.0	0.02	0.09	0.11	123	211
125	ISL	11.70	11.68	33.505	25.488	251.5	0.392	4.50	73.2	10.9	1.05	11.5	0.02	0.08	0.10	126	
133		11.46	11.44	33.534	25.554	245.3	0.412	4.31	69.7	12.4	1.16	13.2	0.02	0.05	0.08	134	210
139		10.95	10.93	33.586	25.687	232.7	0.426	4.06	65.0	15.0	1.33	15.7	0.02	0.03	0.06	140	209
150	ISL	10.34	10.32	33.654	25.847	217.6	0.451	3.77	59.6	18.2	1.51	18.6	0.02	0.02	0.05	151	
164		9.86	9.84	33.721	25.980	205.1	0.480	3.54	55.4	21.2	1.64	20.8	0.01	0.01	0.04	165	208
193		9.06	9.04	33.874	26.231	181.7	0.536	3.10	47.7	27.7	1.89	24.6	0.02	0.01	0.04	194	207
200	ISL	8.93	8.91	33.899	26.271	178.0	0.549	3.03	46.5	28.9	1.93	25.2	0.02			201	
229		8.52	8.50	33.972	26.392	166.9	0.599	2.79	42.4	33.1	2.07	27.1	0.02			230	206
250	ISL	8.24	8.21	34.014	26.468	159.9	0.633	2.59	39.1	36.4	2.17	28.4	0.01			251	
268		8.00	7.97	34.039	26.523	154.9	0.662	2.42	36.4	39.3	2.25	29.4	0.01			269	205
300	ISL	7.47	7.44	34.052	26.611	146.8	0.710	2.23	33.1	44.7	2.37	31.2	0.01			302	
317		7.21	7.18	34.057	26.651	143.1	0.734	2.12	31.3	47.7	2.44	32.1	0.01			319	204
377		6.89	6.85	34.136	26.758	133.7	0.817	1.28	18.8	58.1	2.77	35.4	0.01			379	203
400	ISL	6.74	6.70	34.154	26.793	130.7	0.848	1.10	16.1	61.3	2.85	36.3	0.01			402	
436		6.50	6.46	34.175	26.842	126.4	0.894	0.91	13.2	65.9	2.95	37.4	0.01			439	202
500	ISL	6.09	6.05	34.208	26.921	119.4	0.973	0.63	9.1	73.7	3.09	39.2	0.01			503	
516		5.99	5.94	34.217	26.941	117.6	0.992	0.56	8.0	75.7	3.13	39.7	0.01			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 7.6 W	13/04/98	0841 UTC	4181 m	310 12 kn			1022.1 mb	15.0 C	12.6 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	14.61	14.61	33.220	24.684	324.8	0.000	5.89	101.6	1.8	0.30	0.1	0.00	0.24	0.06	0	
2	14.61	14.61	33.220	24.684	324.9	0.006	5.89	101.6	1.8	0.30	0.1	0.00	0.24	0.06	2	220
10 ISL	14.60	14.60	33.220	24.687	324.9	0.032	5.90	101.8	1.8	0.29	0.0	0.00	0.24	0.05	10	
16	14.60	14.60	33.220	24.687	325.0	0.052	5.90	101.8	1.8	0.29	0.0	0.00	0.24	0.05	16	219
20 ISL	14.60	14.60	33.220	24.687	325.1	0.065	5.90	101.8	1.8	0.29	0.0	0.00	0.24	0.05	20	
29	14.60	14.60	33.220	24.687	325.4	0.094	5.90	101.8	1.8	0.29	0.0	0.00	0.23	0.06	29	218
30 ISL	14.60	14.60	33.220	24.688	325.4	0.098	5.90	101.8	1.8	0.29	0.0	0.00	0.23	0.06	30	
45	14.59	14.58	33.221	24.691	325.5	0.146	5.89	101.6	1.8	0.29	0.0	0.00	0.26	0.08	45	217
50 ISL	14.57	14.56	33.219	24.694	325.4	0.163	5.89	101.5	1.8	0.29	0.0	0.00	0.27	0.09	50	
55	14.56	14.55	33.217	24.694	325.5	0.179	5.89	101.5	1.8	0.29	0.0	0.00	0.27	0.09	55	216
64	14.55	14.54	33.216	24.696	325.6	0.208	5.89	101.5	1.8	0.29	0.0	0.00	0.28	0.10	64	215
75	14.51	14.50	33.215	24.704	325.1	0.244	5.91	101.7	1.8	0.29	0.0	0.00	0.30	0.11	75	214
83	14.26	14.25	33.256	24.789	317.3	0.270	5.80	99.4	2.2	0.33	0.2	0.16	0.58	0.35	83	213
94	14.12	14.11	33.407	24.935	303.7	0.304	5.48	93.7	3.6	0.43	2.0	0.17	0.32	0.31	94	212
100 ISL	13.45	13.44	33.460	25.113	286.8	0.322	5.30	89.4	5.0	0.56	4.1	0.12	0.25	0.29	100	
108	12.43	12.42	33.519	25.360	263.3	0.344	5.09	84.1	7.1	0.74	7.1	0.05	0.20	0.26	108	211
122	11.62	11.60	33.586	25.565	244.0	0.379	4.82	78.3	9.8	0.90	9.9	0.03	0.14	0.16	123	210
125 ISL	11.44	11.42	33.589	25.601	240.7	0.386	4.74	76.7	10.6	0.95	10.7	0.03	0.13	0.14	126	
145	10.40	10.38	33.614	25.805	221.5	0.433	4.14	65.5	16.2	1.33	16.4	0.02	0.05	0.05	146	209
150 ISL	10.20	10.18	33.642	25.861	216.2	0.443	4.00	63.0	17.6	1.41	17.6	0.02	0.04	0.05	151	
168	9.65	9.63	33.753	26.040	199.4	0.481	3.57	55.6	22.1	1.64	21.1	0.01	0.00	0.03	169	208
197	9.19	9.17	33.846	26.188	185.8	0.537	3.22	49.7	26.4	1.82	23.7	0.01	0.00	0.03	198	207
200 ISL	9.13	9.11	33.854	26.204	184.4	0.542	3.20	49.3	26.8	1.83	23.9	0.01			201	
227	8.63	8.61	33.927	26.340	171.8	0.590	3.06	46.6	30.8	1.94	25.8	0.01			228	206
250 ISL	8.33	8.30	33.998	26.442	162.5	0.629	2.77	41.9	34.9	2.07	27.5	0.01			251	
267	8.11	8.08	34.040	26.508	156.4	0.656	2.54	38.3	38.1	2.17	28.7	0.01			268	205
300 ISL	7.47	7.44	34.045	26.605	147.3	0.706	2.32	34.4	44.6	2.31	30.9	0.01			302	
318	7.13	7.10	34.039	26.648	143.3	0.732	2.21	32.6	48.1	2.39	32.0	0.01			320	204
378	6.67	6.64	34.103	26.762	133.2	0.815	1.41	20.6	59.3	2.71	35.9	0.01			380	203
400 ISL	6.48	6.44	34.122	26.802	129.6	0.844	1.19	17.3	63.3	2.80	37.0	0.01			402	
439	6.15	6.11	34.155	26.871	123.3	0.893	0.87	12.5	70.0	2.94	38.6	0.01			442	202
500 ISL	5.80	5.76	34.215	26.963	115.1	0.966	0.53	7.6	78.6	3.11	40.2	0.01			503	
512	5.73	5.69	34.227	26.981	113.5	0.980	0.46	6.6	80.3	3.14	40.5	0.01			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 33.5 N	122 47.6 W	13/04/98	0241 UTC	4120 m	290 13 kn	290 06 04	1	1023.5 mb	14.4 C	12.4 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	14.96	14.96	33.289	24.662	326.9	0.000	5.84	101.5	1.7	0.29	0.0	0.00	0.17	0.04	0	
1	14.96	14.96	33.289	24.662	326.9	0.003	5.84	101.5	1.7	0.29	0.0	0.00	0.17	0.04	1	220
10 ISL	14.97	14.97	33.285	24.658	327.7	0.033	5.85	101.7	1.8	0.29	0.0	0.00	0.17	0.04	10	
15	14.97	14.97	33.284	24.657	327.9	0.049	5.85	101.7	1.8	0.29	0.0	0.00	0.17	0.04	15	219
20 ISL	14.95	14.95	33.283	24.661	327.7	0.066	5.84	101.5	1.8	0.29	0.0	0.00	0.18	0.04	20	
30	14.92	14.92	33.283	24.667	327.3	0.098	5.83	101.2	1.8	0.29	0.0	0.00	0.19	0.05	30	218
46	14.91	14.90	33.284	24.671	327.5	0.151	5.85	101.6	1.7	0.33	0.0	0.00	0.21	0.05	46	217
50 ISL	14.91	14.90	33.285	24.672	327.5	0.164	5.85	101.6	1.7	0.32	0.0	0.00	0.21	0.05	50	
60	14.91	14.90	33.287	24.674	327.6	0.196	5.84	101.4	1.7	0.28	0.0	0.00	0.21	0.06	60	216
74	14.90	14.89	33.284	24.674	328.0	0.242	5.84	101.4	1.7	0.28	0.0	0.00	0.24	0.07	74	215
75 ISL	14.90	14.89	33.285	24.675	328.0	0.246	5.84	101.4	1.7	0.28	0.0	0.00	0.24	0.07	75	
85	14.90	14.89	33.292	24.681	327.7	0.278	5.83	101.2	1.7	0.31	0.0	0.01	0.28	0.10	85	214
94	14.57	14.56	33.454	24.876	309.3	0.307	5.46	94.2	3.1	0.41	1.6	0.15	0.47	0.35	94	213
100 ISL	14.16	14.15	33.475	24.979	299.7	0.325	5.34	91.4	3.9	0.48	2.8	0.12	0.39	0.35	100	
103	13.89	13.88	33.469	25.031	294.8	0.334	5.29	90.0	4.4	0.53	3.5	0.11	0.32	0.35	103	212
114	12.47	12.45	33.429	25.283	270.8	0.365	4.90	81.0	7.9	0.83	8.1	0.03	0.23	0.25	115	211
125	11.64	11.62	33.480	25.479	252.3	0.394	4.63	75.2	10.4	1.01	11.1	0.02	0.14	0.16	126	210
139	10.81	10.79	33.556	25.688	232.5	0.428	4.27	68.1	14.0	1.24	14.7	0.01	0.07	0.08	140	209
150 ISL	10.30	10.28	33.614	25.822	219.9	0.453	4.07	64.2	16.6	1.38	17.0	0.01	0.04	0.06	151	
165	9.73	9.71	33.695	25.982	205.0	0.485	3.82	59.6	20.2	1.54	19.7	0.01	0.01	0.04	166	208
195	8.91	8.89	33.869	26.250	179.8	0.543	3.10	47.5	28.4	1.89	24.8	0.01	0.00	0.03	196	207
200 ISL	8.81	8.79	33.890	26.282	176.8	0.552	3.04	46.5	29.3	1.90	25.3	0.01			201	
230	8.33	8.31	33.977	26.425	163.7	0.603	2.85	43.1	34.0	1.95	27.0	0.01			231	206
250 ISL	8.06	8.03	34.002	26.485	158.2	0.635	2.75	41.4	36.8	2.05	28.0	0.01			251	
269	7.83	7.80	34.016	26.530	154.1	0.664	2.62	39.2	39.6	2.16	28.9	0.01			270	205
300 ISL	7.44	7.41	34.055	26.617	146.2	0.711	2.20	32.6	45.6	2.35	31.1	0.01			302	
318	7.22	7.19	34.075	26.664	141.9	0.737	1.94	28.6	49.3	2.46	32.5	0.01			320	204
379	6.45	6.42	34.085	26.776	131.6	0.820	1.41	20.4	60.9	2.73	36.0	0.01			381	203
400 ISL	6.26	6.22	34.104	26.816	128.0	0.848	1.20	17.3	64.9	2.80	37.1	0.01			402	
438	5.96	5.92	34.142	26.885	121.8	0.895	0.85	12.2	71.9	2.91	38.7	0.01			441	202
500 ISL	5.54	5.50	34.170	26.959	115.2	0.969	0.61	8.7	81.0	3.06	40.5	0.01			503	
510	5.47	5.43	34.175	26.971	114.0	0.980	0.57	8.1	82.5	3.08	40.8	0.01			513	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 29.2 W	12/04/98	1850 UTC	4187 m	320 14 kn	320 06 08	1	1024.9 mb	15.2 C	12.1 C	29m 01	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	15.25	15.25	33.383	24.672	326.0	0.000	5.81	101.6	2.3	0.28	0.1	0.00	0.16	0.03	0	
1		15.23	15.23	33.381	24.675	325.8	0.003									1	224
2	A	15.25	15.25	33.383	24.672	326.1	0.007	5.81	101.6	2.3	0.28	0.1	0.00	0.16	0.03	2	223
10	ISL	15.22	15.22	33.382	24.678	325.7	0.033	5.81	101.6	2.3	0.28	0.1	0.00	0.16	0.04	10	
11		15.22	15.22	33.382	24.678	325.8	0.036	5.81	101.6	2.3	0.28	0.1	0.00	0.16	0.04	11	222
20	ISL	15.23	15.23	33.381	24.675	326.3	0.065	5.82	101.8	2.3	0.28	0.1	0.00	0.16	0.04	20	
21	A	15.23	15.23	33.381	24.675	326.3	0.068	5.82	101.8	2.3	0.28	0.1	0.00	0.16	0.04	21	221
30	ISL	15.22	15.22	33.385	24.681	326.1	0.098	5.81	101.6	2.3	0.28	0.1	0.00	0.16	0.04	30	
31		15.22	15.22	33.385	24.681	326.1	0.101	5.81	101.6	2.3	0.28	0.1	0.00	0.16	0.04	31	220
40	A	15.21	15.20	33.380	24.680	326.5	0.130	5.82	101.7	2.3	0.28	0.1	0.00	0.17	0.04	40	219
50	ISL	15.21	15.20	33.384	24.683	326.5	0.163	5.81	101.5	2.3	0.28	0.1	0.00	0.17	0.04	50	
52		15.21	15.20	33.385	24.684	326.5	0.170	5.81	101.5	2.3	0.28	0.1	0.00	0.17	0.04	52	218
61	A	15.20	15.19	33.380	24.682	326.9	0.199	5.81	101.5	2.3	0.27	0.1	0.00	0.19	0.06	61	217
68		15.17	15.16	33.380	24.689	326.4	0.222	5.81	101.5	2.3	0.29	0.1	0.00	0.23	0.09	68	216
75	ISL	15.11	15.10	33.384	24.706	325.1	0.245	5.79	101.0	2.3	0.28	0.1	0.00	0.34	0.17	75	
79	A	15.06	15.05	33.388	24.720	323.9	0.258	5.77	100.5	2.3	0.28	0.1	0.01	0.40	0.22	79	215
89		14.90	14.89	33.412	24.773	319.1	0.290	5.68	98.7	2.8	0.33	0.6	0.04	0.43	0.25	89	214
100	ISL	13.90	13.89	33.425	24.995	298.2	0.324	5.41	92.1	4.2	0.48	2.7	0.13	0.37	0.31	100	
101		13.77	13.76	33.426	25.022	295.5	0.327	5.37	91.2	4.4	0.50	3.0	0.14	0.36	0.31	101	213
111	A	12.32	12.31	33.440	25.320	267.2	0.355	4.81	79.2	8.4	0.89	8.9	0.05	0.24	0.30	111	212
117		11.75	11.74	33.470	25.451	254.8	0.371	4.54	73.9	10.8	1.07	11.8	0.03	0.20	0.25	118	211
125		11.17	11.15	33.514	25.591	241.5	0.390	4.32	69.5	13.2	1.22	14.1	0.03	0.14	0.19	126	210
138		10.41	10.39	33.600	25.792	222.5	0.421	4.10	64.9	16.4	1.38	16.8	0.02	0.06	0.07	139	209
150	ISL	9.79	9.77	33.687	25.965	206.2	0.446	3.77	58.9	20.5	1.57	19.8	0.01	0.02	0.04	151	
161		9.33	9.31	33.762	26.099	193.6	0.468	3.52	54.4	24.1	1.71	22.2	0.01	0.00	0.02	162	208
196		8.68	8.66	33.904	26.314	173.7	0.533	3.80	58.0	27.3	1.63	22.8	0.01	0.00	0.01	197	207
200	ISL	8.61	8.59	33.917	26.335	171.8	0.539	3.71	56.5	28.2	1.68	23.3	0.01			201	
231		8.09	8.07	33.991	26.472	159.1	0.591	2.84	42.8	36.1	2.09	27.8	0.01			232	206
250	ISL	7.81	7.79	34.011	26.529	153.9	0.620	2.64	39.5	39.4	2.19	29.1	0.01			251	
266		7.60	7.57	34.021	26.567	150.4	0.645	2.53	37.7	41.8	2.24	29.8	0.01			267	205
300	ISL	7.26	7.23	34.058	26.645	143.5	0.695	2.10	31.0	47.8	2.43	31.9	0.01			302	
317		7.10	7.07	34.075	26.681	140.2	0.719	1.87	27.5	50.9	2.53	33.0	0.01			319	204
380		6.41	6.38	34.109	26.801	129.3	0.804	1.22	17.7	63.1	2.83	36.7	0.01			382	203
400	ISL	6.30	6.26	34.130	26.832	126.6	0.829	1.05	15.2	65.8	2.90	37.5	0.01			402	
436		6.13	6.09	34.167	26.883	122.1	0.874	0.80	11.5	70.5	3.01	38.6	0.01			439	202
500	ISL	5.52	5.48	34.196	26.982	113.0	0.949	0.53	7.5	82.4	3.16	40.8	0.01			503	
515		5.38	5.34	34.204	27.005	110.8	0.966	0.47	6.6	85.2	3.19	41.3	0.01			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 54.9 N	124 9.7 W	12/04/98	1238 UTC	4216 m	330 24 kn			1022.1 mb	13.8 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	15.08	15.08	33.306	24.650	328.1	0.000	5.81	101.3	2.3	0.27	0.0	0.00	0.11	0.02	0	
2		15.08	15.08	33.306	24.650	328.2	0.007	5.81	101.3	2.3	0.27	0.0	0.00	0.11	0.02	2	220
10	ISL	15.09	15.09	33.305	24.647	328.7	0.033	5.84	101.8	2.3	0.27	0.0	0.00	0.11	0.03	10	
14		15.09	15.09	33.305	24.647	328.8	0.046	5.85	102.0	2.3	0.27	0.0	0.00	0.11	0.03	14	219
20	ISL	15.09	15.09	33.305	24.647	329.0	0.066	5.85	102.0	2.3	0.27	0.0	0.00	0.11	0.03	20	
29		15.09	15.09	33.305	24.648	329.2	0.095	5.84	101.8	2.3	0.26	0.0	0.00	0.11	0.02	29	218
30	ISL	15.09	15.09	33.305	24.648	329.2	0.099	5.84	101.8	2.3	0.26	0.0	0.00	0.11	0.02	30	
44		15.09	15.08	33.305	24.648	329.6	0.145	5.84	101.8	2.2	0.26	0.0	0.00	0.11	0.02	44	217
50	ISL	15.09	15.08	33.305	24.648	329.8	0.165	5.88	102.5	2.2	0.26	0.0	0.00	0.10	0.03	50	
53		15.09	15.08	33.305	24.648	329.9	0.174	5.89	102.6	2.2	0.26	0.0	0.00	0.10	0.03	53	216
62		15.32	15.31	33.457	24.716	323.8	0.204	5.78	101.3	2.3	0.22	0.0	0.00	0.12	0.03	62	215
74		15.32	15.31	33.494	24.744	321.4	0.243	5.75	100.8	2.3	0.22	0.0	0.01	0.22	0.10	74	214
75	ISL	15.32	15.31	33.504	24.752	320.7	0.246	5.74	100.6	2.3	0.22	0.0	0.02	0.25	0.12	75	
85		15.17	15.16	33.627	24.880	308.8	0.277	5.55	97.1	2.9	0.27	0.6	0.12	0.45	0.34	85	213
95		14.78	14.77	33.752	25.061	291.8	0.307	5.36	93.1	3.8	0.34	1.8	0.07	0.35	0.33	95	212
100	ISL	14.24	14.23	33.732	25.161	282.4	0.322	5.28	90.7	4.5	0.42	2.9	0.05	0.30	0.31	100	
111		12.92	12.90	33.650	25.367	262.9	0.352	5.12	85.5	6.4	0.61	5.6	0.03	0.22	0.24	111	211
122		12.05	12.03	33.636	25.524	248.1	0.380	4.97	81.5	8.4	0.77	8.0	0.02	0.16	0.16	123	210
125	ISL	11.83	11.81	33.635	25.564	244.2	0.387	4.92	80.3	9.1	0.82	8.7	0.02	0.14	0.14	126	
144		10.57	10.55	33.660	25.811	220.9	0.431	4.43	70.4	14.6	1.21	14.2	0.02	0.05	0.05	145	209
150	ISL	10.18	10.16	33.686	25.899	212.6	0.444	4.13	65.1	17.4	1.37	16.7	0.02	0.03	0.04	151	
168		9.21	9.19	33.785	26.137	190.1	0.481	3.35	51.7	25.4	1.78	23.2	0.01	0.00	0.02	169	208
198		8.50	8.48	33.935	26.366	168.7	0.534	3.66	55.6	29.2	1.75	23.7	0.01	0.00	0.02	199	207
200	ISL	8.47	8.45	33.940	26.374	168.0	0.538	3.62	55.0	29.6	1.77	23.9	0.01			201	
228		8.04	8.02	33.985	26.474	158.8	0.583	2.89	43.5	36.0	2.06	27.5	0.01			229	206
250	ISL	7.72	7.70	34.001	26.534	153.4	0.618	2.84	42.4	39.1	2.14	28.6	0.01			251	
267		7.47	7.44	34.006	26.574	149.7	0.644	2.81	41.7	41.3	2.17	29.1	0.01			268	205
300	ISL	6.97	6.94	34.007	26.645	143.3	0.692	2.52	37.0	47.3	2.32	31.2	0.01			302	
316		6.75	6.72	34.007	26.675	140.5	0.715	2.34	34.2	50.4	2.40	32.3	0.01			318	204
380		6.26	6.23	34.050	26.773	131.8	0.802	1.58	22.8	61.5	2.71	36.0	0.00			382	203
400	ISL	6.12	6.08	34.072	26.809	128.6	0.828	1.36	19.6	65.2	2.80	37.1	0.00			402	
440		5.88	5.84	34.123	26.880	122.2	0.878	0.96	13.7	72.3	2.97	39.0	0.00			443	202
500	ISL	5.62	5.58	34.198	26.971	114.1	0.949	0.56	8.0	80.6	3.15	40.4	0.01			503	
511		5.57	5.53	34.212	26.989	112.5	0.961	0.49	7.0	82.1	3.18	40.7	0.01			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 53.4 N	118 29.5 W	09/04/98	1516 UTC	57 m	120 06 kn	220 01 05	0	1020.9 mb	15.8 c	13.9 c	07m 04	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.21	15.21	33.635	24.875	306.7	0.000	6.01	105.2	1.5	0.32	0.2	0.03	6.32	0.84	0	
1		15.21	15.21	33.635	24.875	306.7	0.003	6.01	105.2	1.5	0.32	0.2	0.03	6.32	0.84	1	207
5		15.21	15.21	33.633	24.873	307.0	0.015	5.99	104.9	1.6	0.33	0.2	0.03	6.17	1.11	5	206
9		15.20	15.20	33.633	24.876	306.9	0.028	5.97	104.5	1.6	0.33	0.2	0.03	6.12	1.28	9	205
10	ISL	15.19	15.19	33.633	24.878	306.7	0.031	5.96	104.3	1.6	0.33	0.2	0.03	6.22	1.29	10	
20		15.07	15.07	33.631	24.903	304.6	0.061	5.89	102.8	1.6	0.36	0.4	0.03	7.23	1.40	20	204
30		13.41	13.41	33.591	25.221	274.6	0.090	4.05	68.3	11.9	1.40	10.6	0.39	2.56	0.99	30	203
39		12.46	12.45	33.747	25.530	245.4	0.114	3.09	51.2	17.6	1.64	15.7	0.34	0.53	0.90	39	202
49		11.79	11.78	33.814	25.709	228.6	0.137	2.90	47.3	19.5	1.67	17.9	0.11	0.36	0.47	49	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 49.4 N	118 37.7 W	09/04/98	1848 UTC	631 m	190 01 kn	280 01 04	0	1021.2 mb	17.2 c	15.5 c	10m 03	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.98	14.98	33.645	24.932	301.2	0.000	5.79	100.9	3.9	0.55	2.7	0.21	4.65	1.08	0	
1	A	14.98	14.98	33.645	24.933	301.2	0.003	5.79	100.9	3.9	0.55	2.7	0.21	4.65	1.08	1	222
1		14.89	14.89	33.637	24.946	299.9	0.003									1	223
7	A	14.65	14.65	33.636	24.997	295.3	0.021	5.80	100.4	4.0	0.57	2.7	0.22	5.21	1.14	7	221
10	ISL	14.56	14.56	33.635	25.016	293.6	0.030	5.77	99.7	4.1	0.58	2.9	0.22	5.86	1.26	10	
14	A	14.49	14.49	33.634	25.030	292.3	0.041	5.66	97.7	4.4	0.60	3.1	0.22	6.41	1.42	14	220
20	A	14.38	14.38	33.635	25.054	290.2	0.059	5.31	91.4	5.2	0.67	4.7	0.26	5.20	1.43	20	219
27	A	14.27	14.27	33.637	25.079	288.1	0.079	5.07	87.1	6.0	0.76	5.8	0.29	3.84	1.50	27	218
30	ISL	14.14	14.14	33.642	25.110	285.2	0.088	4.81	82.4	6.9	0.85	6.9	0.26	2.92	1.39	30	
39	A	13.29	13.28	33.667	25.304	266.9	0.113	3.94	66.3	11.0	1.16	11.5	0.19	0.62	0.74	39	217
43		12.64	12.63	33.683	25.445	253.6	0.123	3.65	60.6	13.4	1.29	13.8	0.06	0.34	0.37	43	216
50		12.22	12.21	33.688	25.530	245.6	0.140	3.60	59.3	14.6	1.36	14.8	0.06	0.20	0.33	50	215
60		12.13	12.12	33.724	25.576	241.6	0.165	3.37	55.4	15.9	1.45	15.9	0.04	0.18	0.39	60	214
69		11.97	11.96	33.755	25.630	236.6	0.186	3.25	53.2	16.6	1.51	16.2	0.03	0.13	0.22	69	213
75	ISL	11.82	11.81	33.788	25.684	231.6	0.200	3.12	51.0	17.8	1.58	17.2	0.04	0.14	0.23	75	
84		11.52	11.51	33.849	25.787	222.0	0.221	2.87	46.6	20.1	1.70	19.1	0.06	0.17	0.30	84	212
99		10.86	10.85	33.963	25.996	202.5	0.253	2.42	38.8	24.7	1.94	22.4	0.01	0.17	0.23	100	211
100	ISL	10.83	10.82	33.968	26.005	201.6	0.255	2.40	38.4	24.9	1.95	22.5	0.01	0.17	0.23	101	
119		10.37	10.36	34.037	26.140	189.2	0.292	2.18	34.6	27.9	2.08	24.4	0.01	0.11	0.16	120	210
125	ISL	10.25	10.24	34.057	26.176	185.8	0.303	2.11	33.4	28.9	2.12	24.9	0.01	0.10	0.15	126	
139		10.01	9.99	34.100	26.251	179.0	0.329	1.96	30.8	31.2	2.21	25.9	0.01	0.08	0.13	140	209
150	ISL	9.83	9.81	34.129	26.304	174.1	0.348	1.88	29.5	32.5	2.26	26.5	0.01	0.06	0.12	151	
169		9.54	9.52	34.171	26.385	166.8	0.380	1.76	27.4	34.8	2.34	27.5	0.01	0.04	0.10	170	208
199		9.05	9.03	34.222	26.505	155.9	0.429	1.47	22.7	39.8	2.50	29.3	0.01	0.06	0.11	200	207
200	ISL	9.04	9.02	34.223	26.507	155.7	0.430	1.46	22.5	39.9	2.50	29.3	0.01			201	
229		8.72	8.70	34.243	26.574	149.8	0.475	1.29	19.7	43.3	2.60	30.4	0.01			230	206
250	ISL	8.52	8.49	34.254	26.614	146.3	0.506	1.18	18.0	45.7	2.66	31.2	0.00			252	
269		8.35	8.32	34.262	26.646	143.5	0.533	1.09	16.5	47.8	2.71	31.8	0.00			271	205
300	ISL	8.11	8.08	34.271	26.690	139.8	0.577	0.95	14.3	50.8	2.78	32.6	0.00			302	
319		7.96	7.93	34.277	26.717	137.5	0.604	0.86	12.9	52.8	2.83	33.1	0.00			321	204
379		7.31	7.27	34.307	26.835	126.9	0.683	0.55	8.1	62.5	3.04	35.4	0.00			381	203
400	ISL	7.07	7.03	34.314	26.874	123.3	0.709	0.46	6.8	66.3	3.10	36.2	0.00			403	
437		6.67	6.63	34.326	26.938	117.5	0.754	0.34	5.0	72.9	3.19	37.3	0.01			440	202
500	ISL	6.18	6.14	34.343	27.016	110.6	0.826	0.25	3.6	81.5	3.29	38.3	0.01			504	
515		6.06	6.01	34.348	27.036	108.8	0.842	0.23	3.3	83.5	3.31	38.6	0.01			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 58.3 W	09/04/98	2305 UTC	779 m	280 10 kn	280 01 04	1	1020.0 mb	17.4 c	15.0 c	12m 03	3/8 CC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.09	16.09	33.614	24.662	326.9	0.000	5.99	106.7	2.0	0.29	0.0	0.00	0.86	0.24	0	
2		16.09	16.09	33.614	24.662	327.0	0.007	5.99	106.7	2.0	0.29	0.0	0.00	0.86	0.24	2	220
10	ISL	15.46	15.46	33.608	24.799	314.2	0.032	6.06	106.6	1.8	0.27	0.0	0.00	0.84	0.27	10	
11		15.37	15.37	33.607	24.818	312.4	0.035	6.07	106.6	1.8	0.27	0.0	0.00	0.84	0.28	11	219
20	ISL	15.30	15.30	33.607	24.834	311.2	0.063	6.04	105.9	1.9	0.29	0.0	0.01	1.09	0.40	20	
21		15.29	15.29	33.607	24.836	311.0	0.066	6.04	105.9	1.9	0.29	0.0	0.01	1.14	0.42	21	218
30		15.25	15.25	33.607	24.845	310.4	0.094	5.94	104.1	2.0	0.30	0.1	0.01	2.01	0.68	30	217
40		14.07	14.06	33.580	25.077	288.6	0.124	4.88	83.4	5.9	0.76	5.7	0.20	2.70	1.01	40	216
50		13.19	13.18	33.585	25.261	271.3	0.152	4.29	72.0	9.7	1.02	9.8	0.11	0.82	0.51	50	215
60		12.49	12.48	33.659	25.456	253.0	0.179	3.78	62.6	13.2	1.26	13.4	0.03	0.36	0.38	60	214
70		11.51	11.50	33.752	25.713	228.7	0.203	3.33	54.0	17.5	1.53	17.3	0.02	0.21	0.27	70	213
75	ISL	11.21	11.20	33.747	25.764	223.9	0.214	3.35	54.0	18.2	1.54	17.6	0.02	0.20	0.27	75	
85		10.86	10.85	33.726	25.811	219.7	0.236	3.46	55.3	18.9	1.55	18.2	0.02	0.18	0.28	85	212
99		10.64	10.63	33.824	25.926	209.0	0.266	3.05	48.6	21.9	1.73	20.4	0.02	0.17	0.26	99	211
100	ISL	10.62	10.61	33.828	25.933	208.4	0.268	3.03	48.2	22.1	1.74	20.5	0.02	0.17	0.26	101	
120		10.26	10.25	33.914	26.063	196.5	0.309	2.70	42.7	25.2	1.90	22.6	0.02	0.14	0.22	121	210
125	ISL	10.21	10.20	33.949	26.099	193.1	0.319	2.57	40.6	26.2	1.96	23.2	0.02	0.13	0.22	126	
139		10.07	10.05	34.040	26.194	184.4	0.345	2.21	34.8	29.0	2.11	24.8	0.03	0.11	0.21	140	209
150	ISL	9.90	9.88	34.067	26.244	179.9	0.365	2.10	33.0	30.5	2.17	25.5	0.03	0.12	0.20	151	
169		9.56	9.54	34.089	26.318	173.2	0.399	2.01	31.3	33.0	2.23	26.5	0.03	0.13	0.17	170	208
197		9.12	9.10	34.160	26.445	161.5	0.445	1.73	26.7	37.7	2.38	28.3	0.01	0.06	0.13	198	207
200	ISL	9.07	9.05	34.164	26.456	160.5	0.450	1.71	26.4	38.2	2.39	28.5	0.01			201	
228		8.65	8.63	34.194	26.546	152.3	0.494	1.51	23.1	42.4	2.51	30.0	0.01			229	206
250	ISL	8.44	8.41	34.216	26.596	147.9	0.527	1.37	20.8	44.7	2.58	30.8	0.00			251	
268		8.30	8.27	34.233	26.631	144.9	0.553	1.26	19.1	46.5	2.64	31.4	0.00			270	205
300	ISL	8.05	8.02	34.261	26.691	139.7	0.599	1.02	15.4	50.6	2.76	32.6	0.00			302	
318		7.91	7.88	34.275	26.723	136.9	0.624	0.89	13.4	52.9	2.83	33.2	0.00			320	204
374		7.51	7.47	34.299	26.800	130.3	0.699	0.63	9.4	59.1	2.96	34.8	0.00			376	203
400	ISL	7.17	7.13	34.308	26.856	125.2	0.732	0.52	7.7	64.2	3.04	35.9	0.00			403	
438		6.67	6.63	34.321	26.934	117.9	0.778	0.38	5.5	71.9	3.15	37.3	0.01			441	202
500	ISL	6.26	6.22	34.339	27.003	111.9	0.849	0.28	4.0	79.3	3.24	38.1	0.00			503	
514		6.17	6.12	34.343	27.018	110.6	0.865	0.26	3.8	81.0	3.26	38.3	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.4 N	119 18.9 W	10/04/98	0302	UTC	1644 m	300	20 kn	300 03 03	1	1019.5 mb	15.3 C	14.2 C		2/8	CC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.24	15.24	33.624	24.860	308.1	0.000	5.91	103.5	3.1	0.35	0.3	0.03	1.25	0.31	0	
1		15.24	15.24	33.624	24.860	308.2	0.003	5.91	103.5	3.1	0.35	0.3	0.03	1.25	0.31	1	220
10		15.23	15.23	33.623	24.861	308.3	0.031	5.93	103.9	3.1	0.35	0.3	0.03	1.31	0.27	10	219
20		15.09	15.09	33.621	24.891	305.8	0.062	5.96	104.1	3.0	0.33	0.2	0.03	1.48	0.43	20	218
30		14.87	14.87	33.621	24.939	301.5	0.092	5.97	103.8	3.0	0.35	0.3	0.03	1.75	0.45	30	217
39		14.39	14.38	33.628	25.047	291.4	0.119	5.10	87.8	6.2	0.66	4.5	0.10	1.25	0.38	39	216
50		13.48	13.47	33.655	25.257	271.7	0.150	4.33	73.2	9.4	0.99	9.1	0.15	0.98	0.36	50	215
60		12.78	12.77	33.687	25.421	256.3	0.176	3.73	62.1	12.9	1.26	13.1	0.14	0.52	0.26	60	214
70		11.49	11.48	33.718	25.691	230.8	0.200	3.42	55.4	17.0	1.49	16.9	0.04	0.41	0.28	70	213
75	ISL	11.45	11.44	33.764	25.734	226.8	0.212	3.31	53.6	17.9	1.54	17.7	0.04	0.35	0.28	75	
85		11.36	11.35	33.796	25.775	223.1	0.234	3.11	50.3	19.3	1.61	18.7	0.03	0.27	0.28	85	212
99		10.83	10.82	33.899	25.951	206.7	0.264	2.71	43.4	23.3	1.84	21.5	0.02	0.26	0.25	99	211
100	ISL	10.80	10.79	33.905	25.961	205.7	0.266	2.69	43.0	23.5	1.85	21.6	0.02	0.26	0.25	101	
119		10.34	10.33	33.988	26.106	192.3	0.304	2.41	38.2	26.9	2.00	23.8	0.02	0.17	0.26	120	210
125	ISL	10.23	10.22	34.009	26.142	189.1	0.316	2.34	37.0	27.8	2.04	24.3	0.02	0.16	0.25	126	
140		9.97	9.95	34.048	26.217	182.2	0.343	2.21	34.7	29.7	2.11	25.3	0.01	0.15	0.21	141	209
150	ISL	9.74	9.72	34.056	26.262	178.1	0.362	2.20	34.4	30.9	2.14	25.8	0.01	0.13	0.19	151	
169		9.32	9.30	34.070	26.342	170.8	0.395	2.16	33.5	33.3	2.19	26.8	0.01	0.11	0.16	170	208
199		8.86	8.84	34.159	26.485	157.6	0.444	1.77	27.2	39.0	2.40	29.0	0.01	0.11	0.13	200	207
200	ISL	8.85	8.83	34.161	26.489	157.3	0.445	1.76	27.0	39.1	2.40	29.1	0.01			201	
229		8.62	8.60	34.203	26.558	151.2	0.490	1.50	22.9	42.6	2.51	30.3	0.01			230	206
250	ISL	8.42	8.39	34.220	26.602	147.3	0.522	1.37	20.8	45.3	2.58	31.1	0.01			251	
268		8.25	8.22	34.230	26.636	144.4	0.548	1.27	19.2	47.5	2.64	31.8	0.01			270	205
300	ISL	8.00	7.97	34.249	26.689	139.8	0.593	1.08	16.3	50.8	2.74	32.8	0.01			302	
318		7.86	7.83	34.259	26.718	137.3	0.618	0.97	14.6	52.9	2.80	33.4	0.01			320	204
376		7.25	7.21	34.297	26.836	126.7	0.695	0.59	8.7	63.0	3.01	35.7	0.01			378	203
400	ISL	7.06	7.02	34.305	26.869	123.9	0.725	0.51	7.5	65.9	3.06	36.4	0.01			403	
438		6.78	6.74	34.315	26.915	119.8	0.771	0.42	6.1	70.2	3.13	37.4	0.01			441	202
500	ISL	6.27	6.23	34.338	27.001	112.1	0.843	0.29	4.2	79.3	3.24	38.5	0.01			503	
514		6.16	6.11	34.344	27.020	110.4	0.859	0.26	3.8	81.4	3.26	38.7	0.01			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 39.8 W	10/04/98	0641	UTC	79 m	300	14 kn			1020.0 mb	14.9 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	14.06	14.06	33.199	24.784	315.4	0.000	6.02	102.7	2.7	0.31	0.0	0.01	0.68	0.36	0	
2		14.06	14.06	33.199	24.784	315.4	0.006	6.02	102.7	2.7	0.31	0.0	0.01	0.68	0.36	2	209
5		14.06	14.06	33.197	24.782	315.6	0.016	6.02	102.7	2.7	0.31	0.0	0.01	0.66	0.35	5	208
10		14.06	14.06	33.198	24.783	315.7	0.032	6.03	102.9	2.7	0.31	0.0	0.01	0.67	0.35	10	207
20		14.06	14.06	33.198	24.784	315.9	0.063	6.02	102.7	2.7	0.32	0.0	0.01	0.65	0.40	20	206
30		14.00	14.00	33.218	24.812	313.5	0.095	5.98	101.9	2.8	0.33	0.2	0.03	0.85	0.45	30	205
39		13.93	13.92	33.271	24.868	308.5	0.123	5.81	98.9	3.6	0.41	1.1	0.05	0.91	0.48	39	204
50		13.90	13.89	33.370	24.950	300.9	0.156	5.48	93.3	4.5	0.52	2.8	0.09	0.63	0.38	50	203
61		13.55	13.54	33.436	25.073	289.5	0.189	5.11	86.4	6.3	0.69	5.3	0.11	0.40	0.34	61	202
67		13.32	13.31	33.549	25.208	276.9	0.206	4.82	81.1	8.3	0.86	7.0	0.20	0.46	0.43	67	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 9.3 N	120 0.1 W	10/04/98	0958	UTC	1206 m	310	06 kn			1018.9 mb	15.9 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	14.82	14.82	33.310	24.709	322.5	0.000	5.87	101.8	2.2	0.31	0.0	0.00	0.27	0.08	0	
2		14.82	14.82	33.310	24.709	322.6	0.006	5.87	101.8	2.2	0.31	0.0	0.00	0.27	0.08	2	220
10	ISL	14.82	14.82	33.308	24.708	322.9	0.032	5.88	101.9	2.1	0.30	0.0	0.00	0.27	0.07	10	
15		14.82	14.82	33.306	24.706	323.2	0.048	5.89	102.1	2.1	0.30	0.0	0.00	0.27	0.07	15	219
20	ISL	14.86	14.86	33.325	24.712	322.7	0.065	5.87	101.8	2.1	0.30	0.0	0.00	0.29	0.08	20	
30		14.94	14.94	33.365	24.726	321.7	0.097	5.83	101.3	2.1	0.29	0.0	0.00	0.35	0.11	30	218
43		14.93	14.92	33.364	24.728	321.9	0.139	5.82	101.1	2.1	0.29	0.0	0.00	0.43	0.14	43	217
50	ISL	14.93	14.92	33.365	24.729	322.1	0.161	5.82	101.1	2.1	0.29	0.0	0.00	0.43	0.15	50	
54		14.93	14.92	33.365	24.729	322.2	0.174	5.82	101.1	2.1	0.29	0.0	0.00	0.43	0.15	54	216
64		14.93	14.92	33.365	24.730	322.4	0.206	5.83	101.3	2.1	0.29	0.0	0.00	0.44	0.15	64	215
73		14.92	14.91	33.367	24.734	322.3	0.235	5.82	101.1	2.1	0.29	0.0	0.01	0.40	0.13	73	214
75	ISL	14.88	14.87	33.367	24.742	321.6	0.242	5.80	100.7	2.2	0.29	0.1	0.02	0.40	0.14	75	
84		14.69	14.68	33.366	24.783	318.0	0.271	5.73	99.1	2.6	0.35	0.6	0.06	0.36	0.18	84	213
94		13.82	13.81	33.377	24.974	299.9	0.301	5.40	91.7	3.1	0.53	3.3	0.11	0.25	0.21	94	212
100	ISL	13.40	13.39	33.393	25.072	290.7	0.319	5.26	88.6	4.4	0.62	4.7	0.09	0.22	0.21	100	
110		12.73	12.72	33.429	25.233	275.6	0.347	5.02	83.4	7.3	0.78	7.3	0.04	0.19	0.22	110	211
125		11.49	11.47	33.511	25.531	247.3	0.387	4.51	73.0	11.9	1.10	12.4	0.02	0.09	0.12	126	210
144		10.29	10.27	33.660	25.860	216.2	0.431	3.80	60.0	18.7	1.49	18.4	0.01	0.03	0.05	145	209
150	ISL	10.03	10.01	33.688	25.926	210.0	0.443	3.70	58.1	20.1	1.56	19.5	0.01	0.02	0.05	151	
168		9.47	9.45	33.756	26.072	196.3	0.480	3.51	54.4	23.6	1.70	21.9	0.01	0.01	0.04	169	208
198		8.86	8.84	33.903	26.285	176.6	0.536	3.05	46.7	29.7	1.93	25.2	0.01	0.01	0.05	199	207
200	ISL	8.81	8.79	33.909	26.297	175.4	0.540	3.04	46.5	30.1	1.94	25.4	0.01			201	
229		8.18	8.16	33.970	26.442	162.0	0.588	2.91	43.9	35.0	2.05	27.3	0.01			230	206
250	ISL	7.92	7.89	34.002	26.506	156.2	0.622	2.74	41.1	38.2	2.14	28.5	0.01			251	
270		7.73	7.70	34.026	26.553	152.0	0.653	2.54	37.9	41.1	2.23	29.5	0.01			272	205
300	ISL	7.41	7.38	34.060	26.625	145.4	0.697	2.21	32.8	45.9	2.37	31.2	0.01			302	
316		7.25	7.22	34.076 D	26.661	142.2	0.720									318	204
375		6.78	6.75	34.123	26.763	133.2	0.802	1.34	19.6	58.7	2.74	35.3	0.00			377	203
400	ISL	6.61	6.57	34.158	26.813	128.6	0.834	1.06	15.4	63.3	2.86	36.5	0.00			403	
438		6.35	6.31	34.208	26.887	122.0	0.882	0.71	10.3	70.1	3.02	38.2	0.00			441	202
500	ISL	5.88	5.84	34.237	26.970	114.5	0.955	0.50	7.2	78.7	3.15	39.9	0.00			503	
511		5.80	5.76	34.242	26.984	113.2	0.968	0.46	6.6	80.2	3.17	40.2	0.00			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 0.0 N	120 21.8 W	10/04/98	1836 UTC	720 m	300 13 kn	320 02 04	1	1018.2 mb	16.9 C	13.8 C	36m 01	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	15.26	15.26	33.402	24.684	324.8	0.000	5.80	101.5	1.8	0.28	0.0	0.00	0.17	0.05	0	
1		15.26	15.26	33.402	24.684	324.9	0.003									1	224
1	A	15.26	15.26	33.402 D	24.684	324.9	0.003	5.80	101.5	1.8	0.28	0.0	0.00	0.17	0.05	1	223
10	ISL	15.22	15.22	33.403	24.694	324.2	0.032	5.82	101.8	1.8	0.28	0.0	0.00	0.18	0.05	10	
15		15.18	15.18	33.401	24.701	323.7	0.049	5.83	101.9	1.8	0.28	0.0	0.00	0.19	0.05	15	222
20	ISL	15.15	15.15	33.393	24.702	323.8	0.065	5.83	101.8	1.8	0.28	0.0	0.00	0.24	0.06	20	
26	A	15.10	15.10	33.380	24.703	323.8	0.084	5.83	101.7	1.9	0.28	0.0	0.00	0.29	0.08	26	221
30	ISL	15.06	15.06	33.372	24.706	323.7	0.097	5.83	101.6	1.9	0.28	0.0	0.00	0.29	0.08	30	
38		14.97	14.96	33.356	24.713	323.2	0.123	5.84	101.6	1.9	0.29	0.0	0.00	0.28	0.09	38	220
50	ISL	14.89	14.88	33.339	24.718	323.1	0.162	5.85	101.6	1.9	0.29	0.0	0.00	0.25	0.07	50	
51	A	14.89	14.88	33.338	24.717	323.2	0.165	5.85	101.6	1.9	0.29	0.0	0.00	0.25	0.07	51	219
60		14.89	14.88	33.335	24.715	323.7	0.194	5.86	101.7	2.0	0.29	0.0	0.00	0.28	0.08	60	218
69		14.88	14.87	33.338	24.720	323.5	0.223	5.83	101.2	2.0	0.29	0.0	0.00	0.34	0.12	69	217
75	ISL	14.88	14.87	33.336	24.718	323.8	0.243	5.83	101.2	2.0	0.29	0.0	0.01	0.39	0.12	75	
76	A	14.88	14.87	33.336	24.719	323.9	0.246	5.83	101.2	2.0	0.29	0.0	0.01	0.40	0.12	76	216
87		14.83	14.82	33.343	24.735	322.6	0.282	5.61	97.3	2.2	0.26	0.0	0.02	0.33	0.15	87	215
97	A	14.29	14.28	33.371	24.872	309.8	0.313	5.56	95.4	3.3	0.39	1.5	0.14	0.33	0.23	97	214
100	ISL	14.03	14.02	33.395	24.944	302.9	0.322	5.46	93.2	3.9	0.45	2.5	0.12	0.29	0.23	100	
108		13.25	13.24	33.457	25.151	283.3	0.346	5.19	87.2	5.7	0.61	5.2	0.03	0.19	0.23	108	213
117		12.45	12.43	33.476	25.323	267.0	0.371	5.07	83.8	7.1	0.71	6.9	0.03	0.15	0.19	118	212
125	ISL	11.69	11.67	33.506	25.490	251.2	0.391	4.86	79.0	9.3	0.86	9.4	0.02	0.12	0.15	126	
127		11.52	11.50	33.514	25.528	247.7	0.396	4.80	77.8	9.9	0.91	10.1	0.02	0.11	0.14	128	211
138	A	10.90	10.88	33.547	25.665	234.7	0.423	4.39	70.2	13.5	1.19	14.0	0.01	0.09	0.10	139	210
150		10.25	10.23	33.624	25.839	218.3	0.450	4.03	63.6	17.5	1.40	17.5	0.01	0.04	0.05	151	209
164		9.71	9.69	33.714	26.000	203.2	0.480	3.68	57.4	21.5	1.59	20.6	0.01	0.01	0.03	165	208
194		8.77	8.75	33.880	26.281	176.8	0.537	3.26	49.8	29.2	1.85	24.7	0.00	0.00	0.02	195	207
200	ISL	8.66	8.64	33.911	26.322	173.0	0.547	3.16	48.2	30.6	1.90	25.3	0.00			201	
229		8.29	8.27	34.021	26.465	159.8	0.595	2.72	41.2	36.1	2.09	27.5	0.00			230	206
250	ISL	8.01	7.98	34.032	26.516	155.2	0.628	2.64	39.7	38.4	2.15	28.4	0.00			251	
269		7.77	7.74	34.026	26.547	152.5	0.658	2.59	38.7	40.4	2.19	29.1	0.00			271	205
300	ISL	7.39	7.36	34.054	26.624	145.6	0.704	2.20	32.6	46.3	2.36	31.3	0.00			302	
318		7.21	7.18	34.078	26.668	141.5	0.730	1.92	28.3	50.0	2.48	32.6	0.00			320	204
376		7.01	6.97	34.177	26.774	132.3	0.809	1.10	16.2	59.0	2.81	35.3	0.00			378	203
400	ISL	6.78	6.74	34.175	26.804	129.7	0.840	0.99	14.5	62.4	2.87	36.3	0.00			402	
437		6.41	6.37	34.164	26.845	126.0	0.888	0.90	13.0	67.3	2.93	37.6	0.00			440	202
500	ISL	6.12	6.08	34.221	26.928	118.8	0.965	0.58	8.4	74.2	3.08	39.1	0.00			503	
515		6.05	6.00	34.235	26.948	117.0	0.983	0.50	7.2	75.9	3.12	39.5	0.00			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 39.0 N	121 1.6 W	11/04/98	0017 UTC	3794 m	260 03 kn	260 01 04	1	1015.0 mb	16.9 C	14.5 C	31m 01	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	16.42	16.42	33.443	24.455	346.6	0.000	5.76	103.2	2.1	0.27	0.1	0.00	0.10	0.01	0	
1		16.42	16.42	33.443	24.455	346.7	0.003	5.76	103.2	2.1	0.27	0.1	0.00	0.10	0.01	1	220
10	ISL	15.85	15.85	33.434	24.578	335.2	0.034	5.78	102.4	2.1	0.26	0.1	0.00	0.11	0.02	10	
14		15.52	15.52	33.430	24.649	328.6	0.047	5.79	101.9	2.1	0.26	0.1	0.00	0.11	0.02	14	219
20	ISL	15.46	15.46	33.425	24.659	327.9	0.067	5.79	101.7	2.1	0.26	0.1	0.00	0.11	0.02	20	
29		15.37	15.37	33.418	24.673	326.8	0.097			2.1	0.26	0.1	0.00	0.12	0.03	29	218
30	ISL	15.37	15.37	33.418	24.673	326.8	0.100	5.80	101.7	2.1	0.26	0.1	0.00	0.12	0.03	30	
44		15.34	15.33	33.413	24.677	326.9	0.146	5.80	101.7	2.0	0.26	0.1	0.00	0.14	0.04	44	217
50	ISL	15.34	15.33	33.414	24.678	327.0	0.165	5.80	101.7	2.0	0.26	0.1	0.00	0.16	0.04	50	
59		15.34	15.33	33.415	24.679	327.2	0.195	5.79	101.5	2.0	0.26	0.1	0.00	0.19	0.04	59	216
74		15.33	15.32	33.428	24.691	326.4	0.244	5.76	100.9	2.1	0.27	0.1	0.00	0.27	0.11	74	215
75	ISL	15.31	15.30	33.430	24.697	325.9	0.247	5.75	100.7	2.1	0.27	0.2	0.01	0.30	0.14	75	
84		14.89	14.88	33.440	24.797	316.6	0.276	5.64	98.0	2.8	0.34	0.7	0.07	0.56	0.35	84	214
94		13.74	13.73	33.438	25.037	293.9	0.306	5.32	90.3	4.7	0.55	3.7	0.11	0.46	0.37	94	213
100	ISL	13.03	13.02	33.452	25.191	279.3	0.324	5.16	86.3	6.0	0.67	5.6	0.07	0.35	0.31	100	
104		12.59	12.58	33.466	25.288	270.1	0.335	5.06	83.8	6.9	0.75	6.9	0.04	0.28	0.26	104	212
114		11.76	11.75	33.512	25.482	251.8	0.361	4.77	77.7	9.6	0.96	10.2	0.03	0.19	0.19	115	211
124		11.37	11.35	33.533	25.570	243.6	0.385	4.69	75.7	10.7	1.03	11.2	0.02	0.16	0.16	125	210
125	ISL	11.33	11.31	33.535	25.579	242.7	0.388	4.68	75.5	10.8	1.04	11.4	0.02	0.16	0.16	126	
138		10.78	10.76	33.565	25.701	231.3	0.419	4.47	71.3	13.2	1.19	13.7	0.01	0.09	0.11	139	209
150	ISL	10.22	10.20	33.613	25.835	218.7	0.446	4.18	65.9	16.1	1.36	16.4	0.01	0.05	0.08	151	
164		9.61	9.59	33.683	25.992	203.9	0.475	3.83	59.6	19.9	1.56	19.5	0.01	0.03	0.05	165	208
195		8.83	8.81	33.856	26.253	179.5	0.535	3.35	51.3	27.7	1.85	24.2	0.01	0.00	0.03	196	207
200	ISL	8.75	8.73	33.874	26.279	177.1	0.544	3.30	50.4	28.5	1.87	24.6	0.01			201	
229		8.35	8.33	33.950	26.401	165.9	0.593	3.09	46.8	32.4	1.98	26.2	0.01			230	206
250	ISL	8.07	8.04	33.987	26.472	159.4	0.628	2.90	43.6	35.7	2.09	27.4	0.00			251	
268		7.84	7.81	34.008	26.522	154.9	0.656	2.73	40.9	38.7	2.18	28.5	0.00			269	205
300	ISL	7.43	7.40	34.024	26.594	148.4	0.704	2.47	36.6	43.7	2.32	30.4	0.01			302	
318		7.21	7.18	34.030	26.630	145.1	0.731	2.31	34.1	46.6	2.40	31.4	0.01			320	204
378		6.66	6.63	34.080	26.745	134.8	0.815	1.58	23.0	57.3	2.70	35.0	0.01			380	203
400	ISL	6.51	6.47	34.094	26.776	132.0	0.844	1.39	20.2	60.6	2.79	36.0	0.01			402	
438		6.28	6.24	34.121	26.828	127.5	0.893	1.11	16.0	65.9	2.92	37.4	0.01			441	202
500	ISL	5.95	5.91	34.189	26.924	119.0	0.970	0.66	9.5	75.1	3.11	39.4	0.01			503	
513		5.88	5.84	34.204	26.944	117.1	0.985	0.57	8.2	77.0	3.15	39.8	0.01			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 19.1 N	121 43.0 W	11/04/98	0600 UTC	4064 m	150 12 kn			1011.7 mb	15.8 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	15.98	15.98	33.342	24.478	344.5	0.000	5.77	102.4	1.8	0.28	0.0	0.00	0.10	0.02	0	
2		15.98	15.98	33.342	24.478	344.6	0.007	5.77	102.4	1.8	0.28	0.0	0.00	0.10	0.02	2	220
10	ISL	15.60	15.60	33.332	24.556	337.4	0.034	5.80	102.1	1.8	0.28	0.0	0.00	0.11	0.03	10	
15		15.29	15.29	33.325	24.619	331.5	0.051	5.83	102.0	1.8	0.28	0.0	0.00	0.11	0.03	15	219
20	ISL	15.18	15.18	33.311	24.632	330.4	0.067	5.83	101.8	1.8	0.28	0.0	0.00	0.11	0.03	20	
29		15.10	15.10	33.318	24.655	328.5	0.097	5.83	101.6	1.8	0.29	0.0	0.00	0.12	0.03	29	218
30	ISL	15.10	15.10	33.318	24.655	328.5	0.100	5.83	101.6	1.8	0.29	0.0	0.00	0.12	0.03	30	
45		15.07	15.06	33.320	24.664	328.1	0.150	5.83	101.6	1.8	0.29	0.0	0.00	0.16	0.05	45	217
50	ISL	15.07	15.06	33.321	24.665	328.2	0.166	5.83	101.6	1.8	0.29	0.0	0.00	0.18	0.06	50	
59		15.06	15.05	33.321	24.667	328.2	0.196	5.82	101.4	1.8	0.29	0.0	0.00	0.22	0.07	59	216
75		15.03	15.02	33.317	24.671	328.3	0.248	5.81	101.1	1.8	0.29	0.0	0.00	0.26	0.09	75	215
84		14.94	14.93	33.317	24.691	326.7	0.278	5.80	100.8	1.8	0.29	0.0	0.00	0.37	0.17	84	214
94		14.89	14.88	33.316	24.701	326.0	0.310	5.80	100.7	1.8	0.29	0.1	0.00	0.50	0.22	94	213
100	ISL	14.60	14.59	33.335	24.778	318.8	0.330	5.64	97.3	2.3	0.34	1.1	0.09	0.49	0.32	100	
104		14.41	14.39	33.411	24.877	309.5	0.342	5.47	94.1	3.2	0.42	1.7	0.14	0.48	0.37	104	212
114		12.07	12.06	33.441	25.369	262.6	0.371	4.80	78.6	8.3	0.85	9.0	0.03	0.23	0.28	114	211
124		11.49	11.47	33.474	25.502	250.0	0.396	4.57	74.0	10.6	1.08	11.8	0.02	0.05	0.05	125	210
125	ISL	11.44	11.42	33.478	25.514	248.9	0.399	4.55	73.6	10.8	1.10	12.0	0.02	0.05	0.05	126	
139		10.74	10.72	33.550	25.696	231.8	0.432	4.26	67.9	14.2	1.27	15.1	0.01	0.09	0.10	140	209
150	ISL	10.17	10.15	33.630	25.857	216.6	0.457	3.97	62.5	17.8	1.44	17.9	0.01	0.06	0.08	151	
163		9.59	9.57	33.729	26.031	200.2	0.484	3.63	56.5	22.0	1.64	21.0	0.01	0.01	0.03	164	208
194		9.02	9.00	33.891	26.250	179.8	0.543	3.05	46.9	28.3	1.90	24.8	0.01	0.00	0.03	195	207
200	ISL	8.92	8.90	33.913	26.283	176.8	0.554	2.98	45.7	29.3	1.94	25.3	0.01			201	
227		8.51	8.49	33.986	26.405	165.6	0.600	2.74	41.7	33.5	2.06	27.0	0.01			228	206
250	ISL	8.16	8.13	34.012	26.478	158.9	0.637	2.66	40.1	36.5	2.14	28.1	0.01			251	
267		7.90	7.87	34.021	26.524	154.7	0.664	2.60	39.0	38.8	2.20	28.9	0.01			268	205
300	ISL	7.40	7.37	34.050	26.619	146.0	0.714	2.23	33.1	45.4	2.39	31.2	0.01			302	
319		7.14	7.11	34.066	26.668	141.5	0.741	1.97	29.0	49.5	2.51	32.6	0.01			321	204
379		6.49	6.46	34.098	26.781	131.2	0.823	1.33	19.3	60.9	2.73	36.1	0.01			381	203
400	ISL	6.32	6.28	34.118	26.820	127.8	0.850	1.14	16.5	64.8	2.83	37.1	0.01			402	
438		6.07	6.03	34.156	26.882	122.2	0.897	0.84	12.1	71.3	3.01	38.7	0.01			441	202
500	ISL	5.77	5.73	34.210	26.963	115.1	0.971	0.56	8.0	79.1	3.19	40.0	0.01			503	
510		5.72	5.68	34.219	26.976	113.9	0.982	0.52	7.4	80.3	3.22	40.2	0.01			513	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 59.1 N	122 23.6 W	11/04/98	1151 UTC	4083 m	180 21 kn			1004.2 mb	16.0 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	15.66	15.66	33.483	24.658	327.3	0.000	5.75	101.5	1.7	0.28	0.0	0.00	0.08	0.02	0	
1		15.66	15.66	33.483	24.658	327.3	0.003	5.75	101.5	1.7	0.28	0.0	0.00	0.08	0.02	1	220
10	ISL	15.66	15.66	33.484	24.659	327.5	0.033	5.77	101.8	1.7	0.27	0.0	0.00	0.08	0.02	10	
15		15.66	15.66	33.485	24.660	327.6	0.049	5.78	102.0	1.7	0.27	0.0	0.00	0.09	0.02	15	219
20	ISL	15.66	15.66	33.485	24.660	327.7	0.066	5.76	101.7	1.7	0.27	0.0	0.00	0.10	0.02	20	
30		15.64	15.64	33.486	24.666	327.5	0.098	5.73	101.1	1.7	0.27	0.0	0.00	0.12	0.03	30	218
45		15.57	15.56	33.492	24.687	326.0	0.147	5.78	101.8	1.7	0.25	0.0	0.00	0.09	0.02	45	217
50	ISL	15.57	15.56	33.496	24.690	325.9	0.164	5.77	101.6	1.7	0.26	0.0	0.00	0.10	0.02	50	
61		15.57	15.56	33.501	24.694	325.8	0.199	5.76	101.5	1.7	0.27	0.0	0.00	0.11	0.03	61	216
73		15.62	15.61	33.519	24.697	325.9	0.239	5.71	100.7	1.7	0.25	0.0	0.00	0.15	0.05	73	215
75	ISL	15.62	15.61	33.519	24.697	325.9	0.245	5.72	100.9	1.7	0.25	0.0	0.00	0.16	0.05	75	
84		15.61	15.60	33.517	24.698	326.1	0.274	5.74	101.2	1.7	0.24	0.0	0.00	0.18	0.05	84	214
94		15.58	15.57	33.575	24.750	321.5	0.307	5.68	100.1	1.9	0.26	0.0	0.01	0.39	0.21	94	213
100	ISL	14.98	14.96	33.605	24.905	306.9	0.326	5.52	96.1	2.8	0.36	1.1	0.05	0.39	0.30	100	
104		14.48	14.46	33.615	25.020	296.0	0.338	5.40	93.1	3.5	0.44	2.1	0.08	0.39	0.34	104	212
116		13.26	13.24	33.531	25.207	278.3	0.372	5.23	87.9	5.2	0.58	4.7	0.06	0.32	0.30	117	211
125		12.63	12.61	33.534	25.334	266.3	0.397	5.12	84.9	6.5	0.68	6.3	0.04	0.26	0.26	126	210
138		11.57	11.55	33.543	25.541	246.7	0.430	4.70	76.2	10.1	0.96	10.7	0.03	0.16	0.15	139	209
150	ISL	10.75	10.73	33.580	25.718	230.0	0.459	4.44	70.8	13.4	1.16	14.0	0.02	0.09	0.09	151	
164		9.98	9.96	33.643	25.899	212.8	0.490	4.20	65.8	17.2	1.36	17.3	0.01	0.03	0.05	165	208
194		8.96	8.94	33.810	26.196	184.9	0.549	3.58	54.9	25.6	1.73	23.0	0.01	0.00	0.03	195	207
200	ISL	8.86	8.84	33.837	26.233	181.5	0.560	3.47	53.1	26.7	1.78	23.7	0.01			201	
227		8.54	8.52	33.932	26.358	170.1	0.608	3.07	46.7	31.1	1.95	26.0	0.01			228	206
250	ISL	8.14	8.11	33.982	26.458	160.8	0.646	2.86	43.1	35.3	2.06	27.7	0.01			251	
268		7.83	7.80	34.008	26.524	154.7	0.674	2.72	40.7	38.6	2.14	28.8	0.01			269	205
300	ISL	7.43	7.40	34.034	26.602	147.6	0.723	2.41	35.8	43.7	2.28	30.7	0.01			302	
319		7.23	7.20	34.041	26.636	144.6	0.750	2.22	32.8	46.7	2.37	31.7	0.01			321	204
377		6.63	6.60	34.067	26.739	135.3	0.831	1.68	24.5	56.3	2.64	34.9	0.01			379	203
400	ISL	6.39	6.35	34.080	26.781	131.5	0.862	1.43	20.7	60.9	2.75	36.2	0.01			402	
438		6.04	6.00	34.107	26.847	125.4	0.911	1.06	15.2	68.1	2.90	38.2	0.01			441	202
500	ISL	5.78	5.74	34.161	26.923	118.9	0.987	0.72	10.3	75.6	3.05	39.8	0.01			503	
510		5.74	5.70	34.170	26.935	117.8	0.999	0.66	9.4	76.8	3.08	40.1	0.01			513	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 4.2 W	11/04/98	1938 UTC	4121 m	310 32 kn	310 09 06	2	1010.5 mb	15.2 C	13.1 C	29m 01	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	15.51	15.51	33.409	24.635	329.6	0.000	5.77	101.5	1.8	0.28	0.0	0.00	0.08	0.02	0	
2		15.50	15.50	33.411	24.638	329.3	0.007									2	224
3	A	15.51	15.51	33.409	24.635	329.6	0.010	5.77	101.5	1.8	0.28	0.0	0.00	0.08	0.02	3	223
10		15.49	15.49	33.408	24.639	329.5	0.033	5.78	101.6	1.8	0.23	0.0	0.00	0.10	0.01	10	222
20	ISL	15.50	15.50	33.409	24.637	329.9	0.066	5.77	101.5	1.8	0.24	0.0	0.00	0.09	0.01	20	
21	A	15.50	15.50	33.409	24.637	329.9	0.069	5.77	101.5	1.8	0.24	0.0	0.00	0.09	0.01	21	221
30	ISL	15.48	15.48	33.411	24.644	329.6	0.099	5.78	101.6	1.8	0.24	0.0	0.00	0.09	0.02	30	
31		15.48	15.48	33.411	24.644	329.6	0.102	5.78	101.6	1.8	0.24	0.0	0.00	0.09	0.02	31	220
40	A	15.48	15.47	33.409	24.643	330.1	0.132	5.78	101.6	1.8	0.24	0.0	0.00	0.09	0.02	40	219
50	ISL	15.47	15.46	33.410	24.646	330.0	0.165	5.77	101.4	1.9	0.23	0.0	0.00	0.09	0.02	50	
52		15.47	15.46	33.410	24.646	330.1	0.171	5.77	101.4	1.9	0.23	0.0	0.00	0.09	0.02	52	218
61	A	15.45	15.44	33.414	24.654	329.6	0.201	5.79	101.7	1.9	0.24	0.0	0.00	0.11	0.02	61	217
70		15.41	15.40	33.437	24.681	327.4	0.231	5.80	101.8	1.9	0.23	0.0	0.00	0.13	0.04	70	216
75	ISL	15.43	15.42	33.462	24.696	326.1	0.247	5.78	101.5	1.9	0.22	0.0	0.00	0.16	0.05	75	
78	A	15.44	15.43	33.477	24.705	325.3	0.257	5.76	101.2	1.9	0.22	0.0	0.00	0.18	0.06	78	215
89		15.58	15.57	33.561	24.739	322.4	0.292	5.69	100.3	2.0	0.21	0.0	0.00	0.28	0.15	89	214
100		15.14	15.12	33.624	24.885	308.8	0.327	5.51	96.3	2.8	0.28	0.8	0.08	0.41	0.29	100	213
110	A	14.68	14.66	33.641	24.998	298.3	0.358	5.40	93.5	3.5	0.37	1.8	0.10	0.37	0.23	110	212
118		13.69	13.67	33.592	25.167	282.2	0.381	5.30	89.9	4.6	0.49	3.6	0.07	0.34	0.27	119	211
123		13.07	13.05	33.591	25.292	270.4	0.395	5.11	85.6	5.9	0.62	5.5	0.03	0.26	0.22	124	210
125	ISL	12.89	12.87	33.589	25.326	267.2	0.400	5.06	84.4	6.3	0.66	6.0	0.03	0.24	0.21	126	
140		11.86	11.84	33.573	25.511	249.7	0.439	4.85	79.2	9.0	0.86	9.2	0.02	0.14	0.13	141	209
150	ISL	11.25	11.23	33.585	25.633	238.2	0.463	4.69	75.6	11.1	1.00	11.5	0.01	0.09	0.09	151	
165		10.48	10.46	33.622	25.798	222.6	0.498	4.46	70.7	14.4	1.19	14.7	0.01	0.03	0.04	166	208
195		9.45	9.43	33.733	26.058	198.3	0.561	4.01	62.2	20.8	1.50	19.5	0.02	0.00	0.03	196	207
200	ISL	9.28	9.26	33.759	26.106	193.8	0.571	3.91	60.4	22.1	1.56	20.4	0.02			201	
229		8.42	8.40	33.901	26.352	170.6	0.623	3.35	50.8	30.0	1.86	24.9	0.01			230	206
250	ISL	8.03	8.00	33.962	26.458	160.7	0.658	3.06	46.0	34.8	2.01	27.0	0.01			251	
269		7.77	7.74	33.997	26.524	154.7	0.688	2.83	42.3	38.6	2.12	28.5	0.01			270	205
300	ISL	7.39	7.36	34.027	26.602	147.6	0.735	2.46	36.5	43.9	2.29	30.5	0.01			302	
318		7.18	7.15	34.034	26.637	144.4	0.761	2.26	33.3	47.0	2.38	31.6	0.01			320	204
375		6.38	6.35	34.047	26.755	133.5	0.841	1.68	24.3	59.2	2.65	35.4	0.01			377	203
400	ISL	6.14	6.10	34.057	26.794	130.0	0.873	1.46	21.0	63.7	2.76	36.7	0.01			402	
438		5.86	5.82	34.083	26.850	124.9	0.922	1.16	16.6	69.9	2.90	38.4	0.01			441	202
500	ISL	5.62	5.58	34.166	26.946	116.5	0.997	0.68	9.7	79.1	3.09	40.2	0.01			503	
516		5.56	5.52	34.188	26.971	114.3	1.015	0.55	7.8	81.5	3.14	40.7	0.01			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 19.8 N	123 44.1 W	12/04/98	0336 UTC	4032 m	330 28 kn			1017.5 mb	15.1 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	16.78	16.78	33.778	24.629	330.1	0.000	5.60	101.2	2.2	0.22	0.0	0.00	0.09	0.01	0	
2		16.78	16.78	33.778	24.629	330.2	0.007	5.60	101.2	2.2	0.22	0.0	0.00	0.09	0.01	2	220
10	ISL	16.78	16.78	33.779	24.630	330.3	0.033	5.60	101.2	2.2	0.22	0.0	0.00	0.09	0.01	10	
20	ISL	16.78	16.78	33.780	24.631	330.5	0.066	5.59	101.0	2.2	0.21	0.0	0.00	0.08	0.01	20	
21		16.78	16.78	33.780	24.631	330.6	0.069	5.59	101.0	2.2	0.21	0.0	0.00	0.08	0.01	21	219
30	ISL	16.78	16.78	33.780	24.632	330.8	0.099	5.60	101.2	2.2	0.21	0.0	0.00	0.08	0.01	30	
41		16.78	16.77	33.780	24.632	331.2	0.136	5.61	101.4	2.2	0.22	0.0	0.00	0.08	0.02	41	218
50	ISL	16.76	16.75	33.775	24.633	331.4	0.165	5.60	101.2	2.2	0.22	0.0	0.00	0.08	0.02	50	
61		16.70	16.69	33.764	24.639	331.2	0.202	5.58	100.7	2.1	0.21	0.0	0.00	0.09	0.02	61	217
75	ISL	16.60	16.59	33.747	24.650	330.6	0.248	5.60	100.8	2.1	0.20	0.0	0.00	0.11	0.03	75	
80		16.53	16.52	33.735	24.657	330.1	0.265	5.61	100.9	2.1	0.20	0.0	0.00	0.12	0.03	80	216
98		15.95	15.93	33.628	24.708	325.7	0.324	5.66	100.5	2.1	0.22	0.0	0.00	0.21	0.09	98	215
100	ISL	15.94	15.92	33.639	24.719	324.8	0.330	5.64	100.2	2.1	0.22	0.0	0.00	0.25	0.12	100	
109		15.91	15.89	33.716	24.785	318.7	0.359	5.53	98.2	2.5	0.23	0.2	0.02	0.38	0.25	109	214
117		15.40	15.38	33.689	24.878	310.0	0.384	5.41	95.1	3.0	0.33	1.2	0.09	0.35	0.31	117	213
125	ISL	14.73	14.71	33.644	24.990	299.5	0.409	5.30	91.9	3.6	0.42	2.2	0.08	0.31	0.29	126	
129		14.39	14.37	33.622	25.045	294.3	0.421	5.25	90.4	3.9	0.46	2.8	0.08	0.29	0.27	130	212
141		13.56	13.54	33.581	25.186	281.1	0.455	5.12	86.6	5.2	0.59	4.7	0.05	0.24	0.25	142	211
147		13.23	13.21	33.593	25.262	273.9	0.472	5.04	84.7	5.9	0.65	5.6	0.04	0.22	0.23	148	210
150	ISL	12.99	12.97	33.586	25.304	269.9	0.480	5.03	84.1	6.3	0.68	6.1	0.03	0.20	0.21	151	
160		12.10	12.08	33.563	25.459	255.2	0.506	4.95	81.2	8.1	0.81	8.2	0.02	0.14	0.12	161	209
176		10.75	10.73	33.612	25.743	228.2	0.545	4.49	71.6	13.2	1.15	13.6	0.01	0.04	0.06	177	208
195		10.09	10.07	33.732	25.951	208.6	0.586	4.01	63.0	17.9	1.40	17.4	0.00	0.03	0.02	196	207
200	ISL	9.88	9.86	33.757	26.006	203.5	0.597	3.91	61.2	19.4	1.47	18.4	0.00			201	
230		8.73	8.71	33.877	26.285	177.1	0.654	3.43	52.4	28.1	1.82	23.8	0.00			231	206
250	ISL	8.27	8.24	33.934	26.401	166.3	0.688	3.21	48.5	32.3	1.95	25.8	0.00			251	
267		7.99	7.96	33.968	26.469	160.0	0.716	3.05	45.8	35.4	2.03	27.0	0.00			268	205
300	ISL	7.53	7.50	34.003	26.564	151.3	0.767	2.76	41.0	40.7	2.17	29.0	0.00			302	
321		7.28	7.25	34.015	26.609	147.2	0.798	2.54	37.5	44.4	2.27	30.3	0.00			323	204
375		6.54	6.51	34.059	26.744	134.7	0.875	1.65	24.0	57.9	2.67	35.0	0.00			377	203
400	ISL	6.40	6.36	34.097	26.793	130.4	0.908	1.30	18.8	62.3	2.80	36.4	0.00			402	
432		6.29	6.25	34.147	26.847	125.6	0.949	0.93	13.4	67.2	2.93	37.7	0.00			435	202
500	ISL	5.82	5.78	34.201	26.949	116.4	1.031	0.59	8.4	77.4	3.13	39.7	0.00			503	
519		5.69	5.65	34.217	26.978	113.8	1.053	0.49	7.0	80.3	3.18	40.3	0.00			522	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 46.0 W	09/04/98	0647 UTC	58 m	060	04 kn			1021.3 mb	14.8 C	12.8 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	15.63	15.63	33.455	24.643	328.7	0.000	5.99	105.6	2.1	0.37	1.0	0.09	2.16	0.60	0	
1		15.63	15.63	33.455	24.643	328.7	0.003	5.99	105.6	2.1	0.37	1.0	0.09	2.16	0.60	1	207
5		15.27	15.27	33.574	24.815	312.6	0.016	5.83	102.2	2.3	0.42	1.3	0.10	3.38	0.88	5	206
10		14.73	14.73	33.617	24.965	298.4	0.031	5.41	93.8	4.0	0.61	3.3	0.16	4.36	0.96	10	205
20		13.76	13.76	33.643	25.189	277.3	0.060	4.10	69.7	9.8	1.08	9.9	0.30	0.88	0.58	20	204
30		12.75	12.75	33.704	25.440	253.7	0.087	3.45	57.4	13.9	1.39	14.7	0.08	0.24	0.28	30	203
40		12.44	12.43	33.764	25.547	243.8	0.112	3.11	51.5	16.2	1.54	16.7	0.07	0.16	0.36	40	202
49		11.88	11.87	33.809	25.688	230.6	0.133	3.02	49.4	17.9	1.62	18.0	0.09	0.11	0.27	49	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 54.1 W	09/04/98	0902 UTC	614 m	320	09 kn			1021.1 mb	15.8 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	15.84	15.84	33.653	24.749	318.7	0.000	5.88	104.3	2.1	0.31	0.0	0.01	1.68	0.39	0	
2		15.84	15.84	33.653	24.749	318.8	0.006	5.88	104.3	2.1	0.31	0.0	0.01	1.68	0.39	2	220
10		15.82	15.82	33.653	24.753	318.6	0.032	5.88	104.2	2.1	0.33	0.0	0.01	1.68	0.39	10	219
20		15.73	15.73	33.649	24.771	317.2	0.064	5.92	104.7	1.8	0.30	0.0	0.01	1.86	0.46	20	218
29		15.42	15.42	33.642	24.835	311.4	0.092	5.60	98.5	2.3	0.41	0.7	0.04	3.37	0.82	29	217
30	ISL	15.30	15.30	33.641	24.860	309.0	0.095	5.50	96.5	2.8	0.45	1.3	0.05	3.23	0.82	30	
39		14.09	14.08	33.640	25.119	284.6	0.122	4.51	77.2	7.6	0.87	7.3	0.16	1.38	0.60	39	216
49		13.11	13.10	33.646	25.324	265.3	0.149	3.97	66.6	11.3	1.16	11.7	0.10	0.52	0.25	49	215
50	ISL	13.05	13.04	33.648	25.338	264.0	0.152	3.94	66.0	11.5	1.18	11.9	0.09	0.50	0.25	50	
59		12.62	12.61	33.673	25.442	254.3	0.175	3.73	61.9	13.1	1.28	13.5	0.04	0.35	0.23	59	214
69		12.13	12.12	33.711	25.566	242.7	0.200	3.55	58.3	14.9	1.39	15.1	0.02	0.26	0.19	69	213
75	ISL	11.88	11.87	33.762	25.653	234.6	0.214	3.33	54.5	16.7	1.50	16.7	0.01	0.22	0.17	75	
84		11.56	11.55	33.845	25.777	223.0	0.235	2.97	48.3	19.5	1.66	19.0	0.01	0.17	0.14	84	212
99		11.19	11.18	33.933	25.913	210.4	0.267	2.64	42.6	22.5	1.83	21.1	0.01	0.14	0.10	99	211
100	ISL	11.15	11.14	33.938	25.924	209.3	0.270	2.62	42.2	22.7	1.84	21.3	0.01	0.14	0.10	100	
119		10.48	10.47	34.017	26.105	192.5	0.308	2.34	37.2	26.5	2.02	23.8	0.01	0.08	0.09	120	210
125	ISL	10.34	10.33	34.032	26.141	189.2	0.319	2.30	36.4	27.3	2.05	24.3	0.01	0.08	0.09	126	
140		10.10	10.08	34.061	26.205	183.4	0.347	2.22	35.0	29.0	2.11	25.1	0.01	0.07	0.09	141	209
150	ISL	10.00	9.98	34.087	26.242	180.0	0.365	2.12	33.3	30.0	2.16	25.6	0.01	0.06	0.09	151	
169		9.82	9.80	34.134	26.310	174.0	0.399	1.93	30.2	32.1	2.24	26.6	0.01	0.04	0.08	170	208
200	ISL	9.36	9.34	34.191	26.431	163.0	0.451	1.69	26.2	36.4	2.37	28.2	0.01	0.04	0.07	201	
201		9.34	9.32	34.193	26.435	162.6	0.453	1.68	26.1	36.5	2.37	28.3	0.01	0.04	0.07	202	207
229		8.99	8.97	34.229	26.520	155.0	0.497	1.50	23.1	40.2	2.50	29.6	0.01			230	206
250	ISL	8.76	8.73	34.245	26.569	150.7	0.529	1.38	21.1	42.7	2.56	30.4	0.01			251	
269		8.55	8.52	34.254	26.609	147.1	0.558	1.27	19.4	45.0	2.61	31.1	0.01			271	205
300	ISL	8.17	8.14	34.268	26.678	140.9	0.602	1.04	15.7	49.5	2.71	32.4	0.01			302	
317		7.96	7.93	34.275	26.715	137.6	0.626	0.91	13.7	52.2	2.77	33.2	0.01			319	204
375		7.29	7.25	34.299	26.831	127.1	0.703	0.58	8.6	61.8	2.98	35.7	0.01			377	203
400	ISL	7.04	7.00	34.307	26.873	123.4	0.734	0.48	7.1	65.6	3.04	36.5	0.01			403	
435		6.71	6.67	34.318	26.927	118.6	0.776	0.38	5.6	70.7	3.11	37.5	0.01			438	202
500	ISL	6.14	6.10	34.341	27.020	110.2	0.851	0.28	4.0	80.1	3.22	39.1	0.00			503	
510		6.05	6.00	34.345	27.035	108.8	0.862	0.27	3.9	81.5	3.24	39.3	0.00			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 14.8 W	09/04/98	0028 UTC	275 m	290	17 kn	290 02 04	1	1021.3 mb	15.8 C	13.8 C	15m 03	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	16.21	16.21	33.612	24.633	329.7	0.000	5.87	104.8	1.6	0.27	0.0	0.00	0.39	0.07	0	
1		16.21	16.21	33.612	24.633	329.7	0.003	5.87	104.8	1.6	0.27	0.0	0.00	0.39	0.07	1	216
10		16.11	16.11	33.611	24.656	327.9	0.033	5.89	105.0	1.6	0.27	0.0	0.00	0.32	0.08	10	215
20		15.87	15.87	33.607	24.707	323.3	0.065	5.92	105.0	1.5	0.27	0.0	0.00	0.51	0.18	20	214
30		15.66	15.66	33.597	24.747	319.8	0.098	5.85	103.3	1.9	0.30	0.0	0.00	0.97	0.32	30	213
39		15.17	15.16	33.576	24.839	311.3	0.126	5.61	98.1	3.2	0.41	0.8	0.06	1.68	0.53	39	212
49		13.71	13.70	33.505	25.094	287.2	0.156	4.89	83.0	7.0	0.78	6.4	0.08	0.51	0.38	49	211
50	ISL	13.58	13.57	33.506	25.121	284.6	0.159	4.83	81.7	7.4	0.81	6.9	0.08	0.45	0.36	50	
59		12.65	12.64	33.542	25.334	264.5	0.184	4.37	72.5	10.6	1.05	10.6	0.03	0.19	0.19	59	210
69		12.46	12.45	33.575	25.397	258.8	0.210	4.21	69.6	11.4	1.12	11.7	0.02	0.14	0.20	69	209
75	ISL	11.97	11.96	33.618	25.524	246.9	0.225	3.98	65.1	13.5	1.26	13.7	0.02	0.10	0.16	75	
84		11.17	11.16	33.704	25.738	226.6	0.246	3.56	57.3	17.4	1.49	17.1	0.01	0.04	0.10	84	208
100		10.71	10.70	33.855	25.938	207.9	0.281	2.94	46.9	22.1	1.76	20.7	0.01	0.02	0.08	100	207
120		10.22	10.21	34.036	26.165	186.8	0.320	2.24	35.4	28.4	2.08	24.6	0.02	0.01	0.06	121	206
125	ISL	10.12	10.11	34.062	26.202	183.3	0.330	2.14	33.7	29.3	2.13	25.2	0.03	0.01	0.06	126	
140		9.85	9.83	34.113	26.288	175.5	0.357	1.94	30.4	31.5	2.23	26.3	0.04	0.01	0.07	141	205
150	ISL	9.72	9.70	34.139	26.330	171.6	0.374	1.85	28.9	32.8	2.28	26.9	0.04	0.01	0.07	151	
171		9.47	9.45	34.177	26.401	165.2	0.409	1.70	26.4	35.4	2.35	27.9	0.03	0.02	0.06	172	204
196		9.12	9.10	34.211	26.485	157.7	0.450	1.52	23.5	38.8	2.45	29.0	0.02	0.01	0.05	197	203
200	ISL	9.07	9.05	34.215	26.496	156.7	0.456	1.50	23.1	39.3	2.47	29.2	0.02			201	
228		8.79	8.77	34.236	26.557	151.4	0.499	1.37	21.0	42.4	2.56	30.1	0.02			229	202
250	ISL	8.66	8.63	34.243	26.583	149.3	0.532	1.31	20.0	43.7	2.59	30.5	0.01			251	
259		8.60	8.57	34.246	26.595	148.3	0.546	1.28	19.5	44.2	2.60	30.7	0.01			261	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9804 | STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 10.9 N	118 22.7 W	08/04/98	2043 UTC	1174 m	280 03 kn	270 02 04	1	1024.0 mb	17.1 C	15.1 C	18m 03	2/8	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	15.63	15.63	33.526	24.698	323.5	0.000	5.88	103.7	2.6	0.31	0.1	0.01	0.53	0.17	0	
2		15.63	15.63	33.526	24.698	323.6	0.006	5.88	103.7	2.6	0.31	0.1	0.01	0.53	0.17	2	221
2		15.67	15.67	33.525	24.688	324.5	0.006									2	222
10		15.15	15.15	33.520	24.800	314.2	0.032	5.92	103.4	2.4	0.30	0.1	0.01	0.63	0.24	10	220
20		15.01	15.01	33.512	24.824	312.1	0.063	5.94	103.5	2.4	0.30	0.1	0.01	0.74	0.30	20	219
30		14.87	14.87	33.489	24.837	311.2	0.094	5.94	103.2	2.4	0.30	0.1	0.01	1.19	0.55	30	218
39		14.25	14.24	33.475	24.958	299.9	0.122	5.45	93.5	4.2	0.52	2.4	0.42	0.59	0.36	39	217
49		13.72	13.71	33.486	25.077	288.8	0.151	5.15	87.4	6.0	0.68	5.0	0.29	0.49	0.43	49	215
49		13.72	13.71	33.477	25.070	289.5	0.151									49	216
50	ISL	13.67	13.66	33.487	25.088	287.8	0.154	5.12	86.8	6.2	0.70	5.3	0.27	0.47	0.42	50	
60		13.13	13.12	33.505	25.211	276.3	0.183	4.78	80.1	8.1	0.86	8.0	0.08	0.31	0.31	60	214
69		12.58	12.57	33.558	25.361	262.3	0.207	4.37	72.4	10.5	1.04	10.8	0.02	0.17	0.19	69	213
75	ISL	12.20	12.19	33.577	25.448	254.0	0.222	4.20	69.1	12.2	1.14	12.3	0.02	0.13	0.18	75	
84		11.68	11.67	33.622	25.581	241.6	0.245	3.93	63.9	14.9	1.31	14.6	0.03	0.09	0.17	84	212
98		11.08	11.07	33.810	25.837	217.5	0.277	3.12	50.2	20.1	1.65	19.4	0.02	0.03	0.11	98	211
100	ISL	10.99	10.98	33.822	25.863	215.1	0.281	3.07	49.3	20.6	1.68	19.8	0.02	0.03	0.11	100	
119		10.32	10.31	33.895	26.037	198.8	0.320	2.81	44.5	24.4	1.85	22.3	0.01	0.01	0.10	120	210
125	ISL	10.31	10.30	33.932	26.068	196.1	0.332	2.68	42.4	25.2	1.90	22.9	0.01	0.01	0.09	126	
139		10.29	10.27	34.003	26.127	190.8	0.359	2.37	37.5	27.1	2.00	24.0	0.01	0.01	0.06	140	209
150	ISL	10.08	10.06	34.048	26.198	184.2	0.380	2.22	35.0	29.0	2.08	25.0	0.01	0.01	0.06	151	
169		9.65	9.63	34.114	26.322	172.7	0.414	2.02	31.5	32.3	2.21	26.7	0.01	0.00	0.05	170	208
198		9.31	9.29	34.200	26.446	161.5	0.462	1.66	25.7	36.8	2.38	28.5	0.01	0.00	0.04	199	207
200	ISL	9.29	9.27	34.203	26.451	161.0	0.465	1.64	25.4	37.1	2.39	28.6	0.01			201	
229		8.93	8.91	34.234	26.534	153.7	0.511	1.41	21.7	41.2	2.51	29.9	0.00			230	206
250	ISL	8.66	8.63	34.240	26.581	149.5	0.543	1.34	20.5	43.6	2.56	30.6	0.00			251	
269		8.43	8.40	34.242	26.618	146.2	0.571	1.29	19.6	45.7	2.60	31.2	0.00			271	205
300	ISL	8.11	8.08	34.260	26.681	140.6	0.616	1.07	16.1	49.9	2.71	32.5	0.00			302	
318		7.94	7.91	34.271	26.715	137.6	0.641	0.93	14.0	52.4	2.78	33.2	0.00			320	204
376		7.33	7.29	34.276	26.808	129.4	0.718	0.70	10.4	60.1	2.92	35.2	0.00			378	203
400	ISL	7.08	7.04	34.285	26.850	125.6	0.749	0.59	8.7	63.9	2.99	36.2	0.00			403	
437		6.71	6.67	34.301	26.913	119.9	0.794	0.45	6.6	69.7	3.10	37.6	0.00			440	202
500	ISL	6.19	6.15	34.319	26.996	112.5	0.867	0.34	4.9	78.2	3.21	39.1	0.00			503	
514		6.07	6.02	34.323	27.015	110.8	0.883	0.32	4.6	80.1	3.23	39.4	0.00			518	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 9804 | 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 56.0 W	08/04/98	1331 UTC	1701 m	310 12 kn	300 04 05	1	1022.2 mb	14.8 C	12.7 C		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	15.01	15.01	33.484	24.802	313.6	0.000	5.93	103.3	2.3	0.32	0.1	0.01	0.41	0.14	0	
1		15.01	15.01	33.484	24.802	313.7	0.003	5.93	103.3	2.3	0.32	0.1	0.01	0.41	0.14	1	220
10		15.01	15.01	33.489	24.806	313.5	0.031	5.87	102.3	2.3	0.32	0.1	0.01	0.41	0.14	10	219
20		15.02	15.02	33.484	24.800	314.4	0.063	5.88	102.5	2.4	0.33	0.1	0.01	0.43 A	0.14 A	20	218
30		15.01	15.01	33.485	24.804	314.4	0.094	5.84	101.7	2.4	0.32	0.1	0.01	0.44	0.14	30	217
41		14.55	14.54	33.448	24.874	307.9	0.128	5.81	100.2	3.1	0.39	0.8	0.09	0.54	0.24	41	216
50		13.26	13.25	33.481	25.166	280.3	0.155	4.85	81.5	7.6	0.82	7.1	0.21	0.28	0.25	50	215
60		12.77	12.76	33.507	25.284	269.4	0.182	4.52	75.2	9.6	0.97	9.5	0.08	0.34	0.50	60	214
69		12.01	12.00	33.612	25.511	247.9	0.206	4.00	65.5	13.5	1.25	13.6	0.04	0.24	0.35	69	213
75	ISL	11.72	11.71	33.629	25.579	241.6	0.220	3.96	64.5	14.4	1.29	14.2	0.03	0.18	0.29	75	
84		11.41	11.40	33.627	25.635	236.4	0.242	3.91	63.2	15.0	1.34	15.0	0.02	0.11	0.23	84	212
100		10.78	10.77	33.665	25.778	223.1	0.279	3.75	59.8	17.7	1.48	17.4	0.02	0.09	0.17	100	211
120		10.16	10.15	33.804	25.994	203.0	0.321	3.27	51.5	22.7	1.71	20.7	0.01	0.05	0.18	121	210
125	ISL	10.02	10.01	33.827	26.036	199.1	0.331	3.17	49.8	23.8	1.76	21.4	0.01	0.05	0.18	126	
141		9.59	9.57	33.883	26.151	188.3	0.362	2.93	45.6	26.9	1.89	23.4	0.01	0.04	0.17	142	209
150	ISL	9.31	9.29	33.911	26.219	182.0	0.379	2.86	44.3	28.7	1.95	24.4	0.01	0.04	0.15	151	
169		8.85	8.83	33.969	26.338	171.0	0.412	2.71	41.5	32.3	2.06	26.1	0.01	0.03	0.10	170	208
194		8.75	8.73	34.057	26.423	163.4	0.454	2.28	34.9	36.1	2.21	27.7	0.01	0.04	0.12	195	207
200	ISL	8.69	8.67	34.068	26.441	161.8	0.464	2.25	34.4	36.7	2.23	27.9	0.01			201	
227		8.36	8.34	34.103	26.519	154.7	0.507	2.15	32.6	39.5	2.30	29.0	0.01			228	206
250	ISL	8.17	8.14	34.148	26.583	149.0	0.542	1.84	27.8	43.5	2.44	30.4	0.00			251	
268		8.03	8.00	34.179	26.629	144.9	0.568	1.58	23.8	47.0	2.55	31.5	0.00			270	205
300	ISL	7.68	7.65	34.198	26.695	139.0	0.614	1.32	19.7	52.1	2.67	33.0	0.00			302	
316		7.49	7.46	34.202	26.726	136.2	0.636	1.22	18.1	54.5	2.72	33.6	0.00			318	204
380		6.87	6.83	34.226	26.832	126.8	0.720	0.86	12.6	63.2	2.91	36.0	0.00			382	203
400	ISL	6.72	6.68	34.244	26.866	123.7	0.745	0.72	10.5	66.4	2.97	36.8	0.00			403	
438		6.46	6.42	34.278	26.928	118.2	0.791	0.50	7.3	72.2	3.08	38.1	0.00			441	202
500	ISL	6.07	6.03	34.304	27.000	112.0	0.862	0.40	5.8	79.4	3.18	39.4	0.00			503	
509		6.01	5.97	34.308	27.010	111.0	0.872	0.38	5.5	80.4	3.19	39.6	0.00			513	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 39.2 N	119 28.7 W	08/04/98	0803 UTC	1319 m	300	23 kn			1021.9 mb	13.7 C	11.2 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	14.74	14.74	33.288	24.709	322.5	0.000	5.89	101.9	2.1	0.33	0.0	0.01	0.29	0.08	0	
1		14.74	14.74	33.288	24.709	322.5	0.003	5.89	101.9	2.1	0.33	0.0	0.01	0.29	0.08	1	220
10	ISL	14.74	14.74	33.288	24.709	322.7	0.032	5.90	102.1	2.1	0.33	0.0	0.01	0.27	0.09	10	
16		14.74	14.74	33.289	24.710	322.8	0.052	5.90	102.1	2.1	0.33	0.0	0.01	0.26	0.10	16	219
20	ISL	14.74	14.74	33.289	24.710	322.9	0.065	5.89	101.9	2.1	0.33	0.0	0.01	0.27	0.10	20	
30		14.74	14.74	33.289	24.711	323.2	0.097	5.86	101.4	2.1	0.32	0.0	0.01	0.29	0.09	30	218
44		14.75	14.74	33.290	24.710	323.7	0.142	5.88	101.8	2.1	0.32	0.0	0.01	0.27	0.08	44	217
50	ISL	14.75	14.74	33.290	24.710	323.9	0.162	5.88	101.8	2.1	0.32	0.0	0.01	0.26	0.08	50	
61		14.75	14.74	33.289	24.710	324.2	0.197	5.89	101.9	2.1	0.31	0.0	0.01	0.26	0.09	61	216
74		14.76	14.75	33.289	24.708	324.8	0.239	5.87	101.6	2.1	0.31	0.0	0.00	0.26	0.08	74	215
75	ISL	14.76	14.75	33.290	24.709	324.7	0.243	5.87	101.6	2.1	0.31	0.0	0.00	0.26	0.08	75	
82		14.77	14.76	33.295	24.711	324.8	0.265	5.87	101.6	2.1	0.32	0.0	0.00	0.28	0.09	82	214
96		14.37	14.36	33.399	24.876	309.4	0.310	5.56	95.5	3.3	0.43	1.5	0.15	0.35	0.29	96	213
100	ISL	14.02	14.01	33.415	24.962	301.3	0.322	5.42	92.5	4.1	0.52	2.9	0.13	0.29	0.27	100	
104		13.56	13.55	33.428	25.066	291.4	0.334	5.26	88.9	5.1	0.62	4.5	0.09	0.23	0.24	104	212
115		11.82	11.81	33.469	25.437	256.1	0.364	4.86	79.2	9.2	0.96	9.7	0.03	0.18	0.18	116	211
125		11.46	11.44	33.492	25.522	248.2	0.389	4.62	74.7	11.2	1.08	11.7	0.02	0.13	0.15	126	210
137		10.79	10.77	33.561	25.696	231.8	0.418	4.25	67.8	14.6	1.30	15.0	0.01	0.07	0.08	138	209
150	ISL	10.23	10.21	33.620	25.839	218.3	0.447	4.02	63.4	17.5	1.45	17.4	0.01	0.04	0.06	151	
166		9.74	9.72	33.690	25.976	205.5	0.481	3.80	59.3	20.6	1.59	19.7	0.01	0.02	0.03	167	208
195		9.28	9.26	33.851	26.177	186.8	0.538	3.23	49.9	26.7	1.86	23.6	0.00	0.00	0.03	196	207
200	ISL	9.14	9.12	33.874	26.218	183.0	0.547	3.15	48.5	27.9	1.90	24.2	0.00			201	
230		8.35	8.33	33.988	26.431	163.1	0.599	2.75	41.7	35.0	2.13	27.4	0.00			231	206
250	ISL	8.13	8.10	34.036	26.501	156.7	0.631	2.49	37.5	38.7	2.24	28.8	0.00			251	
266		8.00	7.97	34.061	26.541	153.2	0.656	2.30	34.6	41.4	2.31	29.7	0.00			267	205
300	ISL	7.51	7.48	34.086	26.632	144.9	0.707	1.99	29.6	47.7	2.47	31.7	0.00			302	
314		7.31	7.28	34.093	26.666	141.8	0.727	1.87	27.7	50.3	2.54	32.5	0.00			316	204
378		6.88	6.84	34.170	26.786	131.1	0.814	1.11	16.3	60.8	2.84	35.8	0.00			380	203
400	ISL	6.74	6.70	34.200	26.829	127.3	0.842	0.91	13.3	64.5	2.92	36.6	0.00			402	
439		6.49	6.45	34.247	26.900	120.9	0.891	0.64	9.3	70.8	3.05	37.9	0.00			442	202
500	ISL	6.02	5.98	34.280	26.987	113.1	0.962	0.44	6.3	79.6	3.18	39.8	0.00			503	
511		5.93	5.89	34.287	27.004	111.6	0.975	0.40	5.7	81.2	3.20	40.1	0.00			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 25.4 N	119 57.7 W	08/04/98	0245 UTC	855 m	300	24 kn	300 08 05	1	1021.9 mb	14.2 C	11.5 C		4/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.70	15.70	33.509	24.669	326.3	0.000	5.73	101.2	2.1	0.27	0.0	0.00	0.15	0.04	0	
2		15.70	15.70	33.509	24.669	326.3	0.007	5.73	101.2	2.1	0.27	0.0	0.00	0.15	0.04	2	220
10	ISL	15.71	15.71	33.505	24.664	327.1	0.033	5.74	101.4	2.1	0.27	0.0	0.00	0.14	0.05	10	
15		15.72	15.72	33.501	24.659	327.7	0.049	5.74	101.4	2.1	0.27	0.0	0.00	0.13	0.05	15	219
20	ISL	15.72	15.72	33.501	24.659	327.8	0.065	5.74	101.4	2.1	0.27	0.0	0.00	0.13	0.05	20	
30		15.72	15.72	33.501	24.660	328.1	0.098	5.73	101.3	2.1	0.27	0.0	0.00	0.14	0.04	30	218
45		15.72	15.71	33.500	24.659	328.6	0.147	5.72	101.1	2.1	0.26	0.0	0.00	0.13	0.05	45	217
50	ISL	15.71	15.70	33.499	24.661	328.6	0.164	5.73	101.2	2.1	0.26	0.0	0.00	0.14	0.05	50	
59		15.68	15.67	33.492	24.663	328.7	0.193	5.76	101.7	2.0	0.27	0.0	0.00	0.18	0.06	59	216
74		15.53	15.52	33.473	24.682	327.4	0.243	5.74	101.0	2.0	0.28	0.0	0.00	0.31	0.12	74	215
75	ISL	15.53	15.52	33.473	24.682	327.4	0.246	5.74	101.0	2.0	0.28	0.0	0.00	0.31	0.12	75	
84		15.51	15.50	33.471	24.685	327.4	0.275	5.74	101.0	2.0	0.28	0.0	0.00	0.29	0.11	84	214
94		15.44	15.43	33.469	24.699	326.3	0.308	5.71	100.3	1.9	0.29	0.0	0.02	0.39	0.20	94	213
100	ISL	15.24	15.22	33.456	24.734	323.2	0.328	5.67	99.2	2.1	0.32	0.2	0.08	0.39	0.23	100	
105		15.07	15.05	33.445	24.762	320.6	0.344	5.64	98.3	2.7	0.34	0.4	0.12	0.39	0.25	105	212
114		13.68	13.66	33.452	25.061	292.2	0.371	5.28	89.5	5.0	0.59	3.9	0.06	0.27	0.29	114	211
124		12.75	12.73	33.450	25.245	274.7	0.400	4.86	80.8	7.6	0.83	7.5	0.02	0.15	0.16	125	210
125	ISL	12.70	12.68	33.451	25.256	273.7	0.402	4.84	80.4	7.7	0.84	7.7	0.02	0.15	0.16	126	
141		12.05	12.03	33.489	25.410	259.3	0.445	4.59	75.2	9.8	1.01	10.1	0.01	0.10	0.12	142	209
150	ISL	11.57	11.55	33.518	25.522	248.8	0.468	4.44	72.0	11.5	1.12	11.9	0.01	0.08	0.09	151	
165		10.72	10.70	33.591	25.732	229.0	0.504	4.14	65.9	15.3	1.32	15.4	0.01	0.04	0.05	166	208
190		9.48	9.46	33.798	26.104	193.8	0.557	3.42	53.1	23.8	1.73	21.8	0.00	0.00	0.02	191	207
200	ISL	9.24	9.22	33.851	26.184	186.3	0.576	3.26	50.3	25.9	1.82	23.2	0.00			201	
230		8.80	8.78	33.951	26.332	172.7	0.629	2.96	45.3	30.7	1.97	25.5	0.00			231	206
250	ISL	8.45	8.42	33.993	26.420	164.6	0.663	2.84	43.1	34.0	2.06	26.8	0.00			251	
268		8.14	8.11	34.020	26.488	158.3	0.692	2.72	41.0	37.2	2.14	27.9	0.00			269	205
300	ISL	7.63	7.60	34.064	26.597	148.2	0.741	2.25	33.5	44.2	2.34	30.6	0.00			302	
318		7.39	7.36	34.086	26.649	143.5	0.767	1.95	28.9	48.1	2.46	32.1	0.00			320	204
379		7.09	7.05	34.152	26.744	135.3	0.853	1.29	19.0	56.3	2.72	34.6	0.00			381	203
400	ISL	6.95	6.91	34.174	26.780	132.1	0.881	1.09	16.0	59.6	2.80	35.5	0.00			402	
437		6.64	6.60	34.202	26.844	126.3	0.928	0.80	11.7	65.6	2.93	37.1	0.00			440	202
500	ISL	5.94	5.90	34.196	26.931	118.3	1.005	0.63	9.0	76.0	3.11	39.5	0.00			503	
509		5.84	5.80	34.196	26.943	117.1	1.016	0.61	8.7	77.5	3.13	39.8	0.00			512	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 37.8 W	07/04/98	1858 UTC	3709 m	280 21 kn	280 04 05	1	1023.1 mb	17.8 C	13.7 C	33m 01	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	15.58	15.58	33.466	24.663	326.9	0.000	5.75	101.3	2.4	0.27	0.1	0.00	0.09	0.02	0	
1		15.59	15.59	33.459	24.655	327.6	0.003									1	224
2	A	15.58	15.58	33.466	24.663	326.9	0.007	5.75	101.3	2.4	0.27	0.1	0.00	0.09	0.02	2	223
10	ISL	15.58	15.58	33.459	24.658	327.7	0.033	5.75	101.3	2.4	0.27	0.1	0.00	0.09	0.02	10	
12		15.58	15.58	33.457	24.656	327.9	0.039	5.75	101.3	2.4	0.27	0.1	0.00	0.09	0.02	12	222
20	ISL	15.57	15.57	33.456	24.658	327.9	0.066	5.75	101.3	2.3	0.28	0.1	0.00	0.10	0.01	20	
25	A	15.57	15.57	33.456	24.658	328.1	0.082	5.75	101.3	2.3	0.28	0.1	0.00	0.10	0.01	25	221
30	ISL	15.59	15.59	33.464	24.660	328.1	0.098	5.75	101.3	2.3	0.28	0.1	0.00	0.10	0.01	30	
37		15.62	15.61	33.478	24.665	327.9	0.121	5.74	101.2	2.3	0.27	0.1	0.00	0.10	0.02	37	220
47	A	15.69	15.68	33.497	24.664	328.3	0.154	5.74	101.4	2.3	0.26	0.1	0.00	0.10	0.02	47	219
50	ISL	15.75	15.74	33.518	24.667	328.1	0.164	5.72	101.1	2.3	0.25	0.1	0.00	0.10	0.02	50	
58		15.89	15.88	33.575	24.679	327.1	0.190	5.68	100.7	2.2	0.24	0.1	0.00	0.12	0.03	58	218
70	A	15.93	15.92	33.592	24.684	327.1	0.229	5.68	100.8	2.2	0.23	0.1	0.00	0.15	0.05	70	217
75	ISL	15.93	15.92	33.589	24.682	327.5	0.246	5.69	101.0	2.2	0.24	0.0	0.00	0.15	0.04	75	
78		15.92	15.91	33.586	24.682	327.6	0.256	5.69	101.0	2.2	0.24	0.0	0.00	0.15	0.04	78	216
89	A	15.91	15.90	33.584	24.683	327.8	0.292									89	215
89		15.90	15.89	33.589	24.689	327.2	0.292	5.68	100.8	2.1	0.23	0.0	0.00	0.20	0.06	89	214
98		15.88	15.86	33.593	24.697	326.7	0.321	5.67	100.6	2.1	0.23	0.0	0.00	0.27	0.13	98	213
100	ISL	15.81	15.79	33.600	24.718	324.8	0.328	5.65	100.1	2.2	0.24	0.0	0.01	0.32	0.19	100	
108		15.25	15.23	33.606	24.847	312.7	0.353	5.53	96.8	3.0	0.31	0.7	0.06	0.47	0.38	108	212
116		14.18	14.16	33.537	25.023	295.9	0.377	5.38	92.2	4.2	0.46	2.7	0.11	0.35	0.33	117	211
125	A	13.30	13.28	33.498	25.174	281.7	0.403	5.23	88.0	5.5	0.64	4.7	0.06	0.26	0.37	126	210
140		12.06	12.04	33.547	25.453	255.2	0.444	4.96	81.3	8.1	0.85	8.0	0.03	0.16	0.18	141	209
150	ISL	11.23	11.21	33.551	25.610	240.4	0.468	4.70	75.7	11.1	1.05	11.3	0.02	0.11	0.11	151	
164		10.24	10.22	33.565	25.795	222.8	0.501	4.31	67.9	15.8	1.34	15.9	0.01	0.05	0.06	165	208
195		9.32	9.30	33.754	26.095	194.7	0.566	3.64	56.3	23.5	1.71	21.6	0.00	0.00	0.03	196	207
200	ISL	9.20	9.18	33.783	26.137	190.7	0.575	3.54	54.6	24.7	1.76	22.3	0.00			201	
231		8.55	8.53	33.934	26.358	170.1	0.631	3.02	45.9	31.5	1.99	25.9	0.00			232	206
250	ISL	8.23	8.20	33.988	26.449	161.7	0.663	2.81	42.4	35.1	2.09	27.4	0.00			251	
266		7.99	7.96	34.018	26.508	156.2	0.688	2.66	40.0	37.9	2.17	28.5	0.00			267	205
300	ISL	7.54	7.51	34.050	26.599	148.0	0.740	2.29	34.1	44.0	2.34	30.7	0.00			302	
320		7.31	7.28	34.058	26.638	144.5	0.769	2.07	30.6	47.6	2.44	31.9	0.00			322	204
374		6.74	6.71	34.095	26.746	134.7	0.844	1.51	22.0	57.3	2.67	35.0	0.00			376	203
400	ISL	6.48	6.44	34.109	26.792	130.5	0.879	1.28	18.6	62.2	2.78	36.4	0.00			402	
436		6.14	6.10	34.130	26.852	125.0	0.925	1.01	14.5	68.7	2.91	38.0	0.00			439	202
500	ISL	5.68	5.64	34.178	26.948	116.3	1.002	0.67	9.5	78.7	3.07	39.9	0.00			503	
515		5.57	5.53	34.189	26.970	114.3	1.019	0.59	8.4	81.1	3.11	40.4	0.00			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 45.3 N	121 18.7 W	07/04/98	1303 UTC	3651 m	330 23 kn			1021.2 mb	14.8 C	12.5 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	16.11	16.11	33.639	24.677	325.5	0.000	5.70	101.6	2.4	0.24	0.0	0.00	0.08	0.02	0	
1		16.11	16.11	33.639	24.677	325.6	0.003	5.70	101.6	2.4	0.24	0.0	0.00	0.08	0.02	1	220
10	ISL	16.11	16.11	33.640	24.678	325.7	0.033	5.67	101.1	2.4	0.23	0.0	0.00	0.09	0.02	10	
15		16.11	16.11	33.640	24.678	325.9	0.049	5.65	100.7	2.4	0.23	0.0	0.00	0.09	0.02	15	219
20	ISL	16.12	16.12	33.641	24.677	326.2	0.065	5.66	100.9	2.4	0.23	0.0	0.00	0.09	0.02	20	
30		16.13	16.13	33.643	24.676	326.6	0.098	5.68	101.3	2.4	0.23	0.0	0.00	0.08	0.02	30	218
46		16.13	16.12	33.642	24.676	327.1	0.150	5.65	100.7	2.3	0.23	0.0	0.00	0.09	0.02	46	217
50	ISL	16.13	16.12	33.641	24.676	327.3	0.163	5.66	100.9	2.3	0.23	0.0	0.00	0.09	0.02	50	
59		16.14	16.13	33.640	24.673	327.8	0.193	5.69	101.5	2.3	0.23	0.0	0.00	0.09	0.02	59	216
73		16.14	16.13	33.643	24.676	328.0	0.239	5.68	101.3	2.3	0.23	0.0	0.00	0.08	0.02	73	215
75	ISL	16.14	16.13	33.643	24.676	328.1	0.245	5.68	101.3	2.3	0.23	0.0	0.00	0.08	0.02	75	
84		16.14	16.13	33.642	24.675	328.4	0.275	5.67	101.1	2.3	0.23	0.0	0.00	0.08	0.01	84	214
94		16.12	16.11	33.636	24.676	328.7	0.308	5.68	101.2	2.2	0.23	0.0	0.00	0.11	0.03	94	213
100	ISL	16.05	16.03	33.636	24.692	327.4	0.327	5.66	100.7	2.3	0.24	0.1	0.01	0.19	0.07	100	
105		15.99	15.97	33.636	24.705	326.2	0.344	5.64	100.3	2.3	0.25	0.1	0.01	0.28	0.13	105	212
114		15.48	15.46	33.669	24.845	313.1	0.372	5.52	97.2	2.7	0.32	0.7	0.06	0.48	0.35	114	211
124		14.71	14.69	33.640	24.991	299.4	0.403	5.41	93.7	3.6	0.39	1.9	0.10	0.42	0.32	125	210
125	ISL	14.58	14.56	33.633	25.013	297.2	0.406	5.39	93.1	3.8	0.41	2.2	0.10	0.41	0.31	126	
142		12.20	12.18	33.556	25.434	257.1	0.453	4.92	80.9	8.3	0.84	8.2	0.02	0.18	0.21	143	209
150	ISL	11.34	11.32	33.562	25.598	241.5	0.473	4.69	75.7	11.1	1.03	11.2	0.02	0.12	0.15	151	
166		10.07	10.05	33.615	25.862	216.4	0.510	4.24	66.6	16.8	1.37	16.6	0.01	0.04	0.05	167	208
198		9.18	9.16	33.771	26.131	191.3	0.575	3.54	54.6	24.5	1.74	22.3	0.00	0.00	0.03	199	207
200	ISL	9.12	9.10	33.782	26.149	189.6	0.579	3.51	54.0	25.0	1.76	22.6	0.00			201	
228		8.40	8.38	33.920	26.370	168.9	0.629	3.25	49.3	31.4	1.92	25.5	0.00			229	206
250	ISL	8.18	8.15	33.965	26.438	162.7	0.665	3.10	46.8	33.8	2.01	26.6	0.00			251	
267		8.07	8.04	33.980	26.467	160.3	0.693	2.99	45.0	35.4	2.07	27.2	0.00			268	205
300	ISL	7.60	7.57	34.014	26.562	151.5	0.744	2.65	39.5	41.3	2.22	29.4	0.00			302	
321		7.30	7.27	34.033	26.620	146.2	0.775	2.38	35.2	45.7	2.33	31.0	0.00			323	204
376		6.80	6.77	34.092	26.736	135.7	0.853	1.57	23.0	56.5	2.66	34.8	0.00			378	203
400	ISL	6.55	6.51	34.113	26.786	131.2	0.885	1.31	19.0	61.4	2.77	36.1	0.00			402	
432		6.22	6.18	34.139	26.849	125.3	0.926	1.04	15.0	67.8	2.90	37.7	0.00			435	202
500	ISL	5.65	5.61	34.185	26.957	115.4	1.008	0.66	9.4	79.6	3.09	40.1	0.00			503	
507		5.59	5.55	34.190	26.969	114.4	1.016	0.62	8.8	80.8	3.11	40.4	0.00			510	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 59.2 W	07/04/98	0718 UTC	3837 m	300 15 kn			1022.4 mb	15.8 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	15.90	15.90	33.544	24.651	328.0	0.000	5.72	101.5	2.4	0.25	0.1	0.00	0.07	0.02	0	
1	15.90	15.90	33.544	24.651	328.0	0.003	5.72	101.5	2.4	0.25	0.1	0.00	0.07	0.02	1	220
10 ISL	15.90	15.90	33.543	24.651	328.3	0.033	5.73	101.7	2.4	0.25	0.0	0.00	0.08	0.01	10	
16	15.90	15.90	33.541	24.650	328.7	0.053	5.73	101.6	2.4	0.25	0.0	0.00	0.08	0.01	16	219
20 ISL	15.90	15.90	33.541	24.650	328.8	0.066	5.72	101.5	2.4	0.25	0.0	0.00	0.08	0.01	20	
30 ISL	15.90	15.90	33.540	24.649	329.1	0.099	5.70	101.1	2.3	0.25	0.0	0.00	0.08	0.01	30	
31	15.90	15.90	33.540	24.649	329.1	0.102	5.70	101.1	2.3	0.25	0.0	0.00	0.08	0.01	31	218
45	15.77	15.76	33.520	24.664	328.2	0.148	5.77	102.1	2.3	0.25	0.0	0.00	0.08	0.02	45	217
50 ISL	15.73	15.72	33.513	24.667	328.0	0.164	5.76	101.8	2.3	0.25	0.0	0.00	0.09	0.02	50	
60	15.67	15.66	33.503	24.673	327.8	0.197	5.75	101.5	2.3	0.26	0.0	0.00	0.12	0.03	60	216
73	15.64	15.63	33.498	24.677	327.8	0.240	5.72	100.9	2.2	0.26	0.0	0.00	0.13	0.03	73	215
75 ISL	15.63	15.62	33.497	24.678	327.8	0.246	5.73	101.1	2.2	0.26	0.0	0.00	0.13	0.03	75	
83	15.60	15.59	33.495	24.684	327.5	0.272	5.76	101.5	2.2	0.26	0.0	0.00	0.14	0.04	83	214
94	15.58	15.57	33.491	24.685	327.7	0.308	5.75	101.3	2.2	0.26	0.0	0.00	0.17	0.06	94	213
100 ISL	15.59	15.57	33.498	24.689	327.5	0.328	5.74	101.1	2.1	0.25	0.0	0.00	0.18	0.07	100	
104	15.61	15.59	33.505	24.690	327.6	0.341	5.74	101.2	2.1	0.25	0.0	0.00	0.19	0.07	104	212
114	15.65	15.63	33.556	24.720	325.0	0.374	5.72	100.9	2.2	0.25	0.0	0.01	0.32	0.15	114	211
124	13.99	13.97	33.459	25.003	298.1	0.405	5.32	90.7	4.5	0.55	3.6	0.09	0.36	0.27	125	210
125 ISL	13.83	13.81	33.456	25.034	295.1	0.408	5.28	89.8	4.8	0.58	4.1	0.09	0.35	0.27	126	
139	11.90	11.88	33.477	25.429	257.4	0.447	4.76	77.7	9.4	0.97	10.0	0.02	0.16	0.17	140	209
150 ISL	11.09	11.07	33.540	25.626	238.7	0.474	4.60	73.8	11.8	1.10	12.4	0.02	0.08	0.11	151	
164	10.49	10.47	33.624	25.798	222.6	0.506	4.49	71.2	14.5	1.20	14.4	0.01	0.03	0.05	165	208
194	9.39	9.37	33.725	26.061	197.9	0.569	3.98	61.6	21.6	1.57	20.1	0.01	0.00	0.02	195	207
200 ISL	9.22	9.20	33.756	26.113	193.0	0.581	3.86	59.5	23.1	1.63	21.1	0.01			201	
230	8.55	8.53	33.901	26.332	172.6	0.636	3.36	51.1	29.9	1.88	25.0	0.00			231	206
250 ISL	8.24	8.21	33.950	26.418	164.7	0.670	3.24	48.9	32.8	1.96	26.2	0.00			251	
270	7.98	7.95	33.978	26.478	159.1	0.702	3.15	47.3	35.5	2.02	27.1	0.00			271	205
300 ISL	7.50	7.47	34.004	26.569	150.8	0.749	2.78	41.3	41.4	2.20	29.5	0.00			302	
320	7.20	7.17	34.016	26.620	146.0	0.778	2.48	36.6	45.8	2.33	31.2	0.00			322	204
373	6.62	6.59	34.061	26.735	135.6	0.853	1.76	25.6	57.3	2.62	34.9	0.00			375	203
400 ISL	6.42	6.38	34.095	26.788	130.8	0.889	1.38	20.0	62.4	2.77	36.5	0.00			402	
431	6.24	6.20	34.133	26.842	126.0	0.929	1.01	14.6	67.7	2.92	38.1	0.00			434	202
500 ISL	5.88	5.84	34.182	26.927	118.6	1.013	0.69	9.9	76.2	3.07	39.9	0.00			503	
518	5.78	5.74	34.195	26.950	116.6	1.034	0.61	8.7	78.4	3.11	40.4	0.00			521	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 38.9 W	07/04/98	0121 UTC	4087 m	280 17 kn	270 04 04	1	1021.7 mb	17.0 C	14.2 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	17.02	17.02	33.822	24.606	332.2	0.000	5.58	101.4	2.2	0.22	0.0	0.00	0.09	0.01	0	
2	17.02	17.02	33.822	24.607	332.3	0.007	5.58	101.4	2.2	0.22	0.0	0.00	0.09	0.01	2	220
10 ISL	17.00	17.00	33.816	24.607	332.5	0.033	5.58	101.3	2.2	0.22	0.0	0.00	0.09	0.01	10	
20 ISL	16.97	16.97	33.810	24.610	332.6	0.066	5.58	101.3	2.2	0.22	0.0	0.00	0.09	0.02	20	
21	16.97	16.97	33.809	24.609	332.7	0.070	5.58	101.3	2.2	0.22	0.0	0.00	0.09	0.02	21	219
30 ISL	16.84	16.84	33.776	24.615	332.5	0.100	5.59	101.2	2.2	0.22	0.0	0.00	0.09	0.02	30	
40	16.71	16.70	33.744	24.621	332.2	0.133	5.60	101.1	2.2	0.22	0.0	0.00	0.08	0.02	40	218
50 ISL	16.74	16.73	33.758	24.625	332.2	0.166	5.60	101.1	2.2	0.22	0.0	0.00	0.08	0.02	50	
60	16.78	16.77	33.771	24.626	332.4	0.199	5.60	101.2	2.1	0.22	0.0	0.00	0.08	0.02	60	217
75 ISL	16.78	16.77	33.777	24.631	332.4	0.249	5.60	101.2	2.1	0.22	0.0	0.00	0.09	0.02	75	
79	16.78	16.77	33.780	24.634	332.3	0.263	5.60	101.2	2.1	0.22	0.0	0.00	0.09	0.02	79	216
100	16.52	16.50	33.734	24.659	330.5	0.332	5.62	101.0	2.0	0.22	0.0	0.00	0.21	0.07	100	215
110	16.26	16.24	33.683	24.680	328.8	0.365	5.63	100.6	2.2	0.22	0.0	0.00	0.28	0.12	110	214
121	15.72	15.70	33.638	24.768	320.7	0.401	5.52	97.6	2.7	0.28	0.5	0.07	0.33	0.28	122	213
125 ISL	15.59	15.57	33.649	24.806	317.2	0.414	5.47	96.5	2.8	0.30	0.7	0.08	0.33	0.27	126	
132	15.08	15.06	33.639	24.911	307.4	0.435	5.37	93.7	3.4	0.38	1.7	0.10	0.32	0.25	133	212
138	14.06	14.04	33.553	25.061	292.9	0.453	5.25	89.7	4.5	0.54	3.6	0.05	0.23	0.24	139	211
150 ISL	12.58	12.56	33.459	25.286	271.5	0.487	5.04	83.5	6.8	0.77	6.9	0.03	0.16	0.22	151	
151	12.49	12.47	33.457	25.302	270.0	0.490	5.02	83.0	7.0	0.78	7.1	0.03	0.16	0.22	152	210
161	11.93	11.91	33.498	25.440	256.9	0.516	4.84	79.1	8.9	0.91	9.2	0.02	0.10	0.15	162	209
172	10.85	10.83	33.580	25.701	232.1	0.543	4.50	71.9	13.1	1.16	13.4	0.01	0.05	0.06	173	208
197	9.69	9.67	33.677	25.975	206.2	0.598	3.95	61.5	20.0	1.53	19.1	0.01	0.01	0.04	198	207
200 ISL	9.59	9.57	33.697	26.007	203.2	0.604	3.89	60.5	20.8	1.56	19.6	0.01			201	
228	8.84	8.82	33.877	26.268	178.7	0.658	3.44	52.6	27.6	1.82	23.6	0.00			229	206
250 ISL	8.34	8.31	33.951	26.403	166.1	0.696	3.16	47.8	32.5	1.97	25.9	0.00			251	
267	8.01	7.98	33.984	26.479	159.1	0.723	2.97	44.6	36.0	2.06	27.3	0.00			268	205
300 ISL	7.57	7.54	34.026	26.576	150.2	0.774	2.60	38.7	41.9	2.24	29.5	0.00			302	
316	7.40	7.37	34.037	26.609	147.2	0.798	2.42	35.9	44.6	2.32	30.5	0.00			318	204
378	6.72	6.69	34.088	26.743	135.0	0.886	1.62	23.6	56.8	2.65	34.6	0.00			380	203
400 ISL	6.54	6.50	34.112	26.786	131.1	0.915	1.37	19.9	60.7	2.75	35.7	0.00			402	
436	6.31	6.27	34.156	26.851	125.3	0.961	1.00	14.5	66.5	2.90	37.3	0.00			439	202
500 ISL	6.11	6.07	34.240	26.944	117.3	1.039	0.56	8.1	74.6	3.09	39.0	0.00			503	
514	6.07	6.02	34.258	26.963	115.6	1.055	0.46	6.6	76.4	3.13	39.4	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 46.1 N	123 20.9 W	06/04/98	1852 UTC	4026 m	310 07 kn	300 04 07	1	1021.8 mb	17.9 C	13.8 C	45m 01	3/8	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	16.48	16.48	33.679	24.623	330.7	0.000	5.63	101.1	1.9	0.23	0.0	0.00	0.07	0.01	0	
2	A	16.48	16.48	33.679	24.623	330.8	0.007	5.63	101.1	1.9	0.23	0.0	0.00	0.07	0.01	2	223
2		16.49	16.49	33.680	24.621	330.9	0.007									2	224
10	ISL	16.48	16.48	33.680	24.624	330.9	0.033	5.63	101.1	1.9	0.23	0.0	0.00	0.07	0.01	10	
19		16.47	16.47	33.684	24.630	330.7	0.063	5.64	101.3	1.9	0.23	0.0	0.00	0.07	0.01	19	222
20	ISL	16.47	16.47	33.684	24.630	330.7	0.066	5.64	101.3	1.9	0.23	0.0	0.00	0.07	0.01	20	
30	ISL	16.44	16.44	33.681	24.635	330.5	0.099	5.65	101.4	1.9	0.23	0.0	0.00	0.07	0.01	30	
34	A	16.42	16.41	33.679	24.638	330.4	0.112	5.65	101.3	1.9	0.23	0.0	0.00	0.07	0.01	34	221
48		16.36	16.35	33.663	24.640	330.6	0.159	5.64	101.0	2.0	0.22	0.0	0.00	0.07	0.01	48	220
50	ISL	16.35	16.34	33.662	24.641	330.6	0.165	5.64	101.0	2.0	0.22	0.0	0.00	0.07	0.01	50	
64	A	16.28	16.27	33.653	24.651	330.1	0.212	5.66	101.2	2.0	0.22	0.0	0.00	0.09	0.02	64	219
75	ISL	16.15	16.14	33.623	24.658	329.8	0.248	5.66	100.9	1.9	0.23	0.0	0.00	0.09	0.03	75	
80		16.09	16.08	33.610	24.662	329.5	0.264	5.66	100.8	1.9	0.23	0.0	0.00	0.09	0.04	80	218
96	A	16.07	16.05	33.606	24.664	329.9	0.317	5.68	101.1	2.1	0.23	0.0	0.00	0.14	0.04	96	217
100	ISL	16.09	16.07	33.615	24.666	329.8	0.330	5.68	101.2	2.1	0.23	0.0	0.00	0.15	0.04	100	
105		16.10	16.08	33.621	24.669	329.7	0.347	5.67	101.0	2.0	0.22	0.0	0.00	0.16	0.04	105	216
114		15.99	15.97	33.621	24.694	327.6	0.376	5.67	100.8	2.0	0.22	0.0	0.00	0.27	0.17	114	215
123		16.20	16.18	33.727	24.728	324.7	0.406									124	214
123	A	16.24	16.22	33.724	24.717	325.7	0.406	5.60	100.1	2.0	0.21	0.0	0.01	0.26	0.11	124	213
125	ISL	16.20	16.18	33.737	24.736	324.0	0.412	5.58	99.7	2.1	0.21	0.0	0.02	0.26	0.13	126	
135		15.68	15.66	33.747	24.862	312.2	0.444	5.48	96.9	2.6	0.27	0.7	0.07	0.28	0.24	136	212
148		14.35	14.33	33.622	25.054	294.0	0.483	5.27	90.6	4.1	0.48	2.9	0.06	0.21	0.22	149	211
150	ISL	14.07	14.05	33.615	25.108	288.9	0.489	5.26	89.9	4.2	0.50	3.1	0.06	0.20	0.21	151	
160		12.73	12.71	33.584	25.354	265.4	0.517	5.16	85.8	5.5	0.61	4.8	0.04	0.16	0.18	161	210
172	A	11.75	11.73	33.473	25.455	255.8	0.548	4.82	78.4	9.3	0.95	9.7	0.02	0.12	0.13	173	209
181		11.02	11.00	33.524	25.627	239.4	0.571	4.55	72.9	12.3	1.14	12.7	0.01	0.07	0.09	182	208
195		10.10	10.08	33.640	25.877	215.6	0.602	4.14	65.1	17.4	1.39	17.0	0.01	0.02	0.04	196	207
200	ISL	9.88	9.86	33.676	25.943	209.5	0.613	4.01	62.7	18.9	1.47	18.2	0.01			201	
229		9.06	9.04	33.841	26.205	184.8	0.670	3.44	52.9	26.0	1.79	22.9	0.00			230	206
250	ISL	8.64	8.61	33.914	26.328	173.3	0.708	3.28	50.0	29.5	1.89	24.6	0.00			251	
269		8.36	8.33	33.961	26.408	166.0	0.740	3.16	47.9	32.3	1.95	25.7	0.00			270	205
300	ISL	8.00	7.97	34.035	26.521	155.7	0.790	2.62	39.4	38.3	2.17	28.4	0.00			302	
319		7.83	7.80	34.072	26.575	150.8	0.819	2.25	33.7	42.2	2.32	30.0	0.00			321	204
373		7.34	7.30	34.146	26.704	139.2	0.897	1.43	21.2	52.7	2.65	33.6	0.00			375	203
400	ISL	7.12	7.08	34.181	26.763	133.9	0.934	1.10	16.2	57.6	2.79	35.0	0.00			402	
439		6.84	6.80	34.225	26.836	127.3	0.985	0.73	10.7	63.8	2.95	36.7	0.00			442	202
500	ISL	6.53	6.48	34.268	26.912	120.8	1.061	0.47	6.8	70.6	3.08	38.1	0.00			503	
512		6.47	6.42	34.277	26.927	119.5	1.075	0.42	6.1	71.9	3.11	38.4	0.00			515	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 24.9 N	123 59.6 W	06/04/98	0807 UTC	4217 m	230 05 kn			1020.4 mb	16.1 C	13.2 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	16.50	16.50	33.659	24.603	332.6	0.000	5.65	101.5	1.9	0.24	0.0	0.00	0.10	0.02	0	
2		16.50	16.50	33.659	24.603	332.7	0.007	5.65	101.5	1.9	0.24	0.0	0.00	0.10	0.02	2	220
10	ISL	16.50	16.50	33.660	24.604	332.8	0.033	5.65	101.5	1.9	0.24	0.0	0.00	0.10	0.02	10	
19		16.51	16.51	33.660	24.602	333.3	0.063	5.64	101.3	1.9	0.24	0.0	0.00	0.10	0.02	19	219
20	ISL	16.51	16.51	33.660	24.602	333.3	0.067	5.64	101.3	1.9	0.24	0.0	0.00	0.10	0.02	20	
30	ISL	16.51	16.51	33.660	24.602	333.6	0.100	5.64	101.3	1.9	0.24	0.0	0.00	0.10	0.02	30	
40		16.51	16.50	33.659	24.602	334.0	0.133	5.63	101.2	1.9	0.24	0.0	0.00	0.10	0.02	40	218
50	ISL	16.50	16.49	33.661	24.606	333.9	0.167	5.62	100.9	1.9	0.24	0.0	0.00	0.11	0.02	50	
59		16.50	16.49	33.663	24.608	334.0	0.197	5.61	100.8	1.9	0.24	0.0	0.00	0.12	0.03	59	217
75	ISL	16.50	16.49	33.664	24.609	334.4	0.250	5.62	100.9	1.9	0.24	0.0	0.00	0.15	0.04	75	
79		16.50	16.49	33.664	24.609	334.6	0.264	5.62	100.9	1.9	0.24	0.0	0.00	0.16	0.04	79	216
99		16.50	16.48	33.664	24.610	335.1	0.331	5.62	100.9	1.9	0.24	0.0	0.00	0.16	0.05	99	215
100	ISL	16.50	16.48	33.664	24.610	335.2	0.334	5.62	100.9	1.9	0.24	0.0	0.00	0.16	0.05	100	
109		16.50	16.48	33.664	24.611	335.4	0.364	5.63	101.1	1.9	0.24	0.0	0.00	0.18	0.05	109	214
118		16.50	16.48	33.664	24.611	335.7	0.394	5.61	100.7	2.0	0.25	0.0	0.00	0.21	0.05	118	213
125	ISL	16.24	16.22	33.642	24.654	331.8	0.418	5.59	99.9	2.2	0.26	0.0	0.02	0.22	0.11	126	
128		16.02	16.00	33.624	24.690	328.4	0.428	5.58	99.2	2.3	0.27	0.0	0.03	0.23	0.15	129	212
138		14.62	14.60	33.519	24.917	306.8	0.459	5.46	94.4	3.4	0.42	1.7	0.11	0.30	0.28	139	211
150		13.21	13.19	33.444	25.151	284.5	0.495	5.22	87.6	5.7	0.65	4.9	0.05	0.23	0.24	151	210
159		12.41	12.39	33.449	25.311	269.3	0.520	4.95	81.7	7.4	0.83	7.6	0.02	0.18	0.19	160	209
174		11.34	11.32	33.504	25.554	246.3	0.558	4.61	74.4	11.3	1.07	11.7	0.01	0.09	0.12	175	208
194		10.01	9.99	33.632	25.886	214.7	0.605	4.16	65.3	17.8	1.41	17.2	0.00	0.02	0.03	195	207
200	ISL	9.76	9.74	33.669	25.957	208.0	0.617	4.03	62.9	19.4	1.49	18.5	0.00			201	
230		8.95	8.93	33.824	26.209	184.4	0.676	3.50	53.7	26.3	1.78	23.1	0.00			231	206
250	ISL	8.52	8.49	33.897	26.334	172.8	0.712	3.34	50.8	30.1	1.89	24.8	0.00			251	
264		8.26	8.23	33.935	26.403	166.3	0.736	3.26	49.3	32.6	1.95	25.7	0.00			265	205
300	ISL	7.66	7.63	33.992	26.536	154.0	0.793	2.97	44.3	38.6	2.12	28.0	0.00			302	
318		7.41	7.38	34.008	26.585	149.5	0.820	2.78	41.2	41.7	2.21	29.1	0.00			320	204
378		6.83	6.79	34.070	26.714	137.8	0.907	1.79	26.2	54.2	2.59	33.8	0.00			380	203
400	ISL	6.60	6.56	34.083	26.755	134.1	0.937	1.56	22.7	58.5	2.69	35.1	0.00			402	
436		6.27	6.23	34.106	26.817	128.5	0.984	1.25	18.1	65.0	2.84	36.9	0.00			439	202
500	ISL	5.93	5.89	34.181	26.920	119.3	1.063	0.70	10.0	74.9	3.08	39.2	0.00			503	
510		5.88	5.84	34.193	26.936	117.9	1.075	0.61	8.7	76.5	3.12	39.6	0.00			513	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 57.5 N	117 18.2 W	02/04/98	2023 UTC	61 m	210 06 kn	200 01 04	1	1023.0 mb	18.6 C	15.2 C	04m 05	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	16.34	16.34	33.125	24.229	368.2	0.000	6.19	110.5	3.0	0.29	0.0	0.01	2.79	0.47	0	
1		16.34	16.34	33.125	24.229	368.2	0.004	6.19	110.5	3.0	0.29	0.0	0.01	2.79	0.47	1	207
7		16.04	16.04	33.321	24.448	347.5	0.025	6.14	109.1	2.1	0.25	0.0	0.01	2.91	0.54	7	206
10	ISL	15.92	15.92	33.485	24.602	333.0	0.035	6.07	107.7	1.1	0.24	0.0	0.01	2.20	0.52	10	
11		15.89	15.89	33.537	24.649	328.6	0.039	6.05	107.3	0.8	0.24	0.0	0.01	1.95	0.52	11	205
20	ISL	15.93	15.93	33.576	24.670	326.8	0.068	6.01	106.7	0.6	0.24	0.0	0.01	1.87	0.35	20	
21		15.93	15.93	33.580	24.673	326.6	0.071	6.01	106.7	0.6	0.24	0.0	0.01	1.86	0.34	21	204
30		15.81	15.81	33.593	24.710	323.3	0.101	5.80	102.7	1.0	0.31	0.2	0.05	3.24	0.52	30	203
39		14.20	14.19	33.646	25.101	286.3	0.128	3.99	68.4	9.5	1.10	10.0	0.60	0.94	0.31	39	202
50	ISL	13.26	13.25	33.686	25.325	265.2	0.158	3.58	60.2	12.8	1.28	13.1	0.50	0.35	0.30	50	
51		13.17	13.16	33.690	25.346	263.2	0.161	3.54	59.5	13.1	1.30	13.4	0.49	0.30	0.30	51	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.3 N	117 22.0 W	03/04/98	0220 UTC	494 m	300 07 kn	250 02 05	1	1021.5 mb	16.2 C	13.8 C		1/8	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	16.09	16.09	33.614	24.662	326.9	0.000	6.03	107.4	1.1	0.27	0.0	0.01	1.93	0.27	0	
1		16.09	16.09	33.614	24.662	327.0	0.003	6.03	107.4	1.1	0.27	0.0	0.01	1.93	0.27	1	220
10		16.00	16.00	33.603	24.674	326.1	0.033	6.00	106.7	1.2	0.27	0.0	0.01	2.42	0.29	10	219
20		15.83	15.83	33.601	24.712	322.9	0.065	5.85	103.7	1.1	0.28	0.0	0.01	2.76	0.52	20	218
30		15.69	15.69	33.609	24.749	319.6	0.097	5.59	98.8	1.8	0.38	0.8	0.07	2.88	0.45	30	217
40		14.22	14.21	33.663	25.110	285.5	0.127	4.21	72.2	8.6	1.01	9.1	0.04	0.57	0.32	40	216
49		12.37	12.36	33.598	25.432	255.0	0.152	4.12	68.0	11.6	1.17	12.0	0.02	0.27	0.16	49	215
50	ISL	12.34	12.33	33.599	25.438	254.4	0.154	4.11	67.8	11.7	1.18	12.1	0.02	0.26	0.15	50	
59		12.07	12.06	33.611	25.499	248.8	0.177	4.02	65.9	12.6	1.25	13.0	0.02	0.19	0.12	59	214
70		11.88	11.87	33.675	25.585	240.9	0.204	3.74	61.1	14.4	1.38	14.8	0.02	0.14	0.09	70	213
75	ISL	11.94	11.93	33.739	25.623	237.4	0.216	3.46	56.6	15.7	1.48	16.0	0.02	0.12	0.08	75	
83		11.98	11.97	33.830	25.687	231.6	0.235	3.07	50.3	17.6	1.61	17.6	0.02	0.09	0.06	83	212
100		11.12	11.11	33.785	25.811	220.1	0.273	3.27	52.6	18.6	1.61	18.2	0.01	0.07	0.07	100	211
120		10.95	10.94	33.926	25.951	207.2	0.316	2.66	42.7	22.7	1.87	21.4	0.01	0.03	0.05	121	210
125	ISL	10.75	10.73	33.930	25.990	203.6	0.326	2.67	42.7	23.4	1.89	21.9	0.01	0.03	0.05	126	
140		10.11	10.09	33.939	26.108	192.6	0.356	2.71	42.7	25.5	1.93	23.0	0.01	0.02	0.05	141	209
150	ISL	9.99	9.97	33.997	26.174	186.5	0.375	2.48	39.0	27.4	2.03	24.1	0.01	0.02	0.05	151	
170		9.87	9.85	34.126	26.295	175.4	0.411	1.94	30.4	31.6	2.24	26.4	0.01	0.01	0.05	171	208
198		9.27	9.25	34.198	26.451	161.1	0.458	1.64	25.4	36.9	2.41	28.5	0.00	0.01	0.04	199	207
200	ISL	9.25	9.23	34.201	26.456	160.6	0.461	1.63	25.2	37.1	2.42	28.6	0.00			201	
229		9.03	9.01	34.227	26.512	155.8	0.507	1.49	23.0	39.6	2.50	29.4	0.00			230	206
250	ISL	8.81	8.78	34.242	26.559	151.6	0.539	1.37	21.0	41.9	2.55	30.1	0.01			251	
269		8.58	8.55	34.254	26.605	147.6	0.568	1.24	18.9	44.5	2.61	30.9	0.01			271	205
300	ISL	8.15	8.12	34.273	26.685	140.3	0.612	0.97	14.7	50.2	2.75	32.6	0.01			302	
319		7.88	7.85	34.284	26.734	135.8	0.639	0.81	12.2	54.0	2.84	33.6	0.01			321	204
378		7.10	7.06	34.312	26.868	123.6	0.715	0.52	7.7	64.8	3.09	36.1	0.00			380	203
400	ISL	6.87	6.83	34.313	26.901	120.6	0.742	0.44	6.5	68.1	3.12	36.8	0.00			403	
437		6.59	6.55	34.316	26.941	117.2	0.786	0.36	5.2	72.4	3.14	37.8	0.01			440	202
460		6.49	6.45	34.329	26.965	115.2	0.813	0.34	4.9	74.1	3.18	38.2	0.01			463	201
500	ISL	6.37	6.32	34.345	26.994	112.9	0.858									503	

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 50.9 N	117 31.7 W	03/04/98	0537 UTC	836 m	300 06 kn			1022.4 mb	15.2 C	12.8 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	33.655	24.712	322.2	0.000	5.84	103.9	1.8	0.26	0.0	0.01	1.06	0.29	0	
1		16.01	16.01	33.655	24.712	322.2	0.003	5.84	103.9	1.8	0.26	0.0	0.01	1.06	0.29	1	220
10		16.01	16.01	33.656	24.713	322.4	0.032	5.83	103.7	1.8	0.27	0.0	0.01	1.09	0.28	10	219
20		15.91	15.91	33.650	24.731	321.0	0.064	5.80	103.0	1.9	0.26	0.0	0.01	1.18	0.40	20	218
30		15.90	15.90	33.651	24.735	321.0	0.097	5.75	102.1	1.9	0.29	0.0	0.01	1.35	0.41	30	217
39		15.68	15.67	33.659	24.790	316.0	0.125	5.52	97.6	2.6	0.38	0.8	0.05	1.29	0.46	39	216
49		13.67	13.66	33.592	25.169	280.1	0.155	4.52	76.7	7.5	0.88	8.0	0.04	0.62	0.57	49	215
50	ISL	13.56	13.55	33.585	25.186	278.4	0.158	4.49	76.0	7.7	0.90	8.3	0.04	0.58	0.55	50	
60		12.86	12.85	33.578	25.321	265.8	0.185	4.25	70.9	9.7	1.03	10.4	0.03	0.33	0.31	60	214
70		12.26	12.25	33.770	25.587	240.8	0.210	3.31	54.6	15.5	1.44	16.0	0.02	0.08	0.09	70	213
75	ISL	12.08	12.07	33.807	25.650	234.9	0.222	3.14	51.6	17.0	1.52	17.1	0.02	0.06	0.08	75	
85		11.86	11.85	33.852	25.726	227.9	0.245	2.97	48.6	18.9	1.61	18.3	0.02	0.03	0.05	85	212
98		11.77	11.76	33.987	25.848	216.6	0.274	2.44	39.9	22.3	1.83	20.9	0.01	0.02	0.05	98	211
100	ISL	11.76	11.75	33.995	25.857	215.9	0.279	2.43	39.7	22.6	1.84	21.0	0.01	0.02	0.05	100	
119		11.52	11.50	34.008	25.912	211.1	0.319	2.35	38.2	23.8	1.90	21.9	0.01	0.03	0.04	120	210
125	ISL	11.37	11.35	34.002	25.935	209.0	0.332	2.36	38.2	24.1	1.90	22.1	0.01	0.03	0.04	126	
139		10.99	10.97	33.996	25.999	203.1	0.361	2.38	38.2	25.1	1.92	22.6	0.01	0.02	0.04	140	209
150	ISL	10.70	10.68	34.033	26.079	195.7	0.382	2.25	35.9	26.9	2.00	23.7	0.01	0.02	0.04	151	
169		10.26	10.24	34.112	26.218	182.9	0.418	1.97	31.2	30.6	2.15	25.6	0.01	0.01	0.03	170	208
199		9.77	9.75	34.165	26.343	171.5	0.472	1.82	28.5	35.1	2.25	27.1	0.01	0.01	0.03	200	207
200	ISL	9.76	9.74	34.166	26.345	171.3	0.473	1.81	28.3	35.2	2.25	27.1	0.01			201	
228		9.35	9.32	34.203	26.442	162.5	0.520	1.66	25.8	37.2	2.35	28.3	0.01			229	206
250	ISL	9.02	8.99	34.224	26.512	156.2	0.555	1.51	23.3	40.1	2.43	29.4	0.01			251	
267		8.78	8.75	34.238	26.561	151.8	0.581	1.39	21.3	42.7	2.50	30.2	0.01			269	205
300	ISL	8.46	8.43	34.264	26.631	145.6	0.630	1.16	17.6	46.8	2.61	31.5	0.00			302	
318		8.26	8.23	34.270	26.667	142.4	0.656	1.06	16.0	49.3	2.67	32.2	0.00			320	204
377		7.02	6.98	34.226	26.811	128.8	0.736	0.91	13.4	61.4	2.85	35.7	0.00			379	203
400	ISL	6.77	6.73	34.238	26.855	124.8	0.765	0.76	11.1	65.3	2.93	36.7	0.00			403	
438		6.50	6.46	34.269	26.916	119.4	0.812	0.51	7.4	71.1	3.04	38.1	0.00			441	202
500	ISL	6.08	6.04	34.306	27.000	112.0	0.884	0.34	4.9	78.8	3.15	39.6	0.00			503	
511		6.01	5.97	34.313	27.014	110.7	0.896	0.31	4.5	80.2	3.17	39.9	0.00			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 52.2 W	03/04/98	0953 UTC	628 m	330 04 kn			1022.1 mb	14.8 C	12.9 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	15.87	15.87	33.609	24.708	322.6	0.000	5.84	103.6	2.2	0.30	0.0	0.00	0.35	0.10	0	
2		15.87	15.87	33.609	24.708	322.6	0.006	5.84	103.6	2.2	0.30	0.0	0.00	0.35	0.10	2	220
10		15.72	15.72	33.599	24.734	320.4	0.032	5.85	103.4	2.0	0.30	0.0	0.00	0.38	0.10	10	219
20		15.68	15.68	33.594	24.740	320.2	0.064	5.83	103.0	2.0	0.30	0.0	0.00	0.51	0.17	20	218
30	ISL	15.13	15.13	33.585	24.855	309.5	0.096	5.61	98.0	3.0	0.41	0.8	0.10	1.01	0.53	30	
31		15.05	15.05	33.583	24.871	308.0	0.099	5.58	97.3	3.1	0.43	1.0	0.11	1.04	0.56	31	217
40		14.26	14.25	33.531	25.000	296.0	0.126	5.25	90.1	4.4	0.60	3.8	0.08	0.53	0.36	40	216
49		13.85	13.84	33.526	25.081	288.5	0.152	4.96	84.4	5.6	0.72	5.9	0.04	0.31	0.26	49	215
50	ISL	13.77	13.76	33.533	25.103	286.4	0.155	4.88	82.9	6.0	0.75	6.4	0.04	0.29	0.25	50	
59		13.06	13.05	33.601	25.299	267.9	0.180	4.22	70.7	9.7	1.05	10.6	0.02	0.18	0.17	59	214
69		12.84	12.83	33.613	25.353	263.1	0.207	4.11	68.5	10.4	1.11	11.4	0.02	0.15	0.15	69	213
75	ISL	12.47	12.46	33.613	25.425	256.3	0.222	4.09	67.7	11.3	1.16	12.2	0.02	0.11	0.12	75	
84		11.86	11.85	33.624	25.549	244.6	0.245	4.05	66.1	12.9	1.24	13.7	0.01	0.06	0.08	84	212
99		11.36	11.35	33.706	25.706	230.1	0.280	3.61	58.4	15.9	1.42	16.3	0.01	0.03	0.06	99	211
100	ISL	11.33	11.32	33.715	25.718	228.9	0.283	3.57	57.7	16.2	1.44	16.5	0.01	0.03	0.06	100	
119		10.86	10.85	33.884	25.934	208.7	0.324	2.86	45.8	21.7	1.76	20.9	0.01	0.01	0.04	120	210
125	ISL	10.74	10.72	33.928	25.990	203.6	0.337	2.69	43.0	23.1	1.84	21.9	0.01	0.01	0.04	126	
139		10.45	10.43	34.002	26.099	193.5	0.364	2.42	38.4	25.8	1.97	23.5	0.01	0.01	0.03	140	209
150	ISL	10.12	10.10	34.002	26.156	188.3	0.385	2.48	39.1	26.8	1.97	24.1	0.01	0.01	0.03	151	
169		9.56	9.54	33.986	26.237	180.8	0.420	2.66	41.4	28.3	1.98	24.7	0.01	0.00	0.04	170	208
199		9.08	9.06	34.096	26.401	165.7	0.472	2.25	34.7	34.0	2.19	27.2	0.01	0.00	0.03	200	207
200	ISL	9.07	9.05	34.099	26.405	165.3	0.474	2.24	34.5	34.1	2.19	27.3	0.01			201	
229		8.92	8.90	34.165	26.481	158.6	0.521	1.89	29.0	37.4	2.32	28.5	0.01			230	206
250	ISL	8.86	8.83	34.210	26.526	154.8	0.554	1.63	25.0	39.6	2.42	29.3	0.01			251	
269		8.78	8.75	34.243	26.565	151.4	0.583	1.41	21.6	41.8	2.50	30.1	0.01			271	205
300	ISL	8.41	8.38	34.264	26.639	144.8	0.629	1.19	18.1	46.5	2.63	31.5	0.01			302	
319		8.13	8.10	34.268	26.685	140.7	0.656	1.09	16.5	49.6	2.70	32.4	0.01			321	204
377		7.43	7.39	34.282	26.798	130.4	0.735	0.72	10.7	59.4	2.90	35.0	0.01			379	203
400	ISL	7.16	7.12	34.292	26.844	126.2	0.764	0.61	9.0	63.5	2.97	36.0	0.01			403	
436		6.77	6.73	34.309	26.911	120.1	0.809	0.47	6.9	69.7	3.06	37.3	0.01			439	202
500	ISL	6.16	6.12	34.334	27.012	111.0	0.882	0.32	4.6	79.6	3.17	39.1	0.01			503	
515		6.02	5.97	34.340	27.035	108.9	0.899	0.29	4.2	81.9	3.20	39.5	0.01			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 12.8 W	03/04/98	1404 UTC	1643 m	310 04 kn	310 01 04	1	1019.9 mb	14.6 C	11.9 C	15m 03	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	14.94	14.94	33.412	24.762	317.5	0.000	5.98	104.0	2.3	0.29	0.0	0.00	0.52	0.27	0	
1		14.94	14.94	33.412	24.762	317.5	0.003	5.98	104.0	2.3	0.29	0.0	0.00	0.52	0.27	1	220
10		14.95	14.95	33.414	24.761	317.8	0.032	5.98	104.0	2.2	0.28	0.0	0.00	0.47	0.30	10	219
20		15.01	15.01	33.543	24.848	309.8	0.063	6.09	106.1	2.7	0.30	0.0	0.00	0.77	0.55	20	218
30		14.94	14.94	33.550	24.869	308.2	0.094	6.06	105.5	2.9	0.29	0.0	0.01	1.05	0.79	30	217
40		14.93	14.92	33.550	24.871	308.2	0.125	5.97	103.9	2.9	0.30	0.0	0.01	1.40	1.15	40	216
49		14.90	14.89	33.550	24.878	307.9	0.153	5.84	101.5	3.2	0.34	0.2	0.05	1.16	0.82	49	215
50	ISL	14.88	14.87	33.549	24.882	307.5	0.156	5.82	101.2	3.2	0.35	0.3	0.06	1.11	0.78	50	
59		14.75	14.74	33.540	24.903	305.8	0.183	5.63	97.6	3.6	0.43	1.0	0.16	0.69	0.53	59	214
69		13.49	13.48	33.426	25.078	289.3	0.213	5.24	88.4	6.6	0.64	4.8	0.19	0.49	0.44	69	213
75	ISL	13.09	13.08	33.419	25.153	282.2	0.230	5.09	85.2	7.4	0.72	6.1	0.15	0.42	0.42	75	
84		12.76	12.75	33.456	25.247	273.5	0.255	4.86	80.8	8.5	0.83	7.8	0.08	0.34	0.40	84	212
99		12.45	12.44	33.582	25.405	258.8	0.295	4.16	68.8	12.5	1.14	12.0	0.03	0.20	0.29	99	211
100	ISL	12.35	12.34	33.590	25.431	256.4	0.298	4.12	68.0	12.9	1.17	12.4	0.03	0.19	0.29	100	
119		10.45	10.44	33.730	25.886	213.2	0.342	3.52	55.8	20.6	1.59	19.3	0.02	0.10	0.25	120	210
125	ISL	10.23	10.22	33.747	25.937	208.4	0.355	3.46	54.6	21.5	1.63	20.0	0.02	0.09	0.23	126	
139		9.96	9.94	33.773	26.004	202.4	0.384	3.37	52.9	22.8	1.68	20.9	0.01	0.08	0.19	140	209
150	ISL	9.62	9.60	33.824	26.100	193.3	0.405	3.22	50.1	25.1	1.78	22.3	0.01	0.07	0.17	151	
169		9.14	9.12	33.927	26.259	178.5	0.441	2.88	44.4	29.4	1.98	24.8	0.01	0.06	0.14	170	208
199		9.08	9.06	34.065	26.377	168.0	0.493	2.28	35.1	34.0	2.17	27.0	0.01	0.03	0.10	200	207
200	ISL	9.07	9.05	34.068	26.381	167.6	0.494	2.27	35.0	34.1	2.18	27.1	0.01			201	
229		8.74	8.72	34.128	26.480	158.6	0.542	1.99	30.4	38.1	2.31	28.5	0.01			230	206
250	ISL	8.55	8.52	34.158	26.534	153.9	0.575	1.82	27.7	40.7	2.38	29.4	0.01			251	
268		8.40	8.37	34.176	26.571	150.6	0.602	1.69	25.7	42.9	2.44	30.2	0.01			270	205
300	ISL	8.05	8.02	34.199	26.642	144.3	0.649	1.45	21.8	47.3	2.56	31.6	0.00			302	
318		7.86	7.83	34.209	26.678	141.1	0.675	1.32	19.8	49.8	2.63	32.3	0.00			320	204
377		7.48	7.44	34.254	26.769	133.2	0.756	0.88	13.1	56.9	2.81	34.4	0.00			379	203
400	ISL	7.25	7.21	34.252	26.800	130.5	0.786	0.81	12.0	59.7	2.85	35.2	0.00			403	
437		6.87	6.83	34.247	26.849	126.1	0.834	0.74	10.8	64.3	2.92	36.3	0.00			440	202
500	ISL	6.42	6.37	34.286	26.940	118.0	0.910	0.48	7.0	72.8	3.08	38.1	0.00			503	
514		6.32	6.27	34.295	26.961	116.1	0.927	0.42	6.1	74.7	3.12	38.5	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 33.1 W	03/04/98	1846 UTC	1340 m	280 02 kn	280 01 08	1	1020.9 mb	17.9 C	14.2 C	21m 02	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	15.22	15.22	33.403	24.694	323.9	0.000	5.96	104.2	2.2	0.30	0.0	0.00	0.30	0.17	0	
1		15.23	15.23	33.404	24.692	324.1	0.003									1	224
1	A	15.22	15.22	33.403	24.694	324.0	0.003	5.96	104.2	2.2	0.30	0.0	0.00	0.30	0.17	1	223
8		15.13	15.13	33.412	24.721	321.6	0.026	5.95	103.9	2.2	0.30	0.0	0.00	0.30	0.18	8	222
10	ISL	15.02	15.02	33.407	24.741	319.7	0.032	5.95	103.6	2.2	0.30	0.0	0.00	0.37	0.24	10	
16	A	14.72	14.72	33.391	24.793	314.9	0.051	5.95	103.0	2.3	0.31	0.0	0.01	0.61	0.44	16	221
20	ISL	14.71	14.71	33.395	24.799	314.5	0.064	5.90	102.1	2.3	0.31	0.0	0.02	0.71	0.47	20	
22		14.71	14.71	33.397	24.800	314.5	0.070	5.88	101.8	2.3	0.31	0.0	0.03	0.75	0.49	22	220
30	A	14.76	14.76	33.429	24.814	313.3	0.095	5.91	102.4	2.3	0.31	0.0	0.02	0.96	0.76	30	218
30		14.75	14.75	33.428	24.816	313.2	0.095									30	219
38		14.77	14.76	33.438	24.819	313.1	0.120	5.90	102.2	2.3	0.31	0.0	0.02	0.88	0.64	38	217
45	A	14.79	14.78	33.457	24.830	312.3	0.142	5.90	102.3	2.3	0.31	0.0	0.02	0.88	0.58	45	216
50	ISL	14.80	14.79	33.461	24.831	312.3	0.158	5.89	102.1	2.3	0.31	0.0	0.02	0.88	0.58	50	
58	A	14.81	14.80	33.466	24.833	312.4	0.183	5.86	101.6	2.3	0.32	0.0	0.03	0.89	0.59	58	215
68		14.82	14.81	33.489	24.849	311.2	0.214	5.85	101.5	2.3	0.33	0.0	0.04	0.85	0.70	68	214
75	ISL	14.76	14.75	33.494	24.866	309.8	0.236	5.79	100.3	2.4	0.35	0.2	0.07	0.72	0.55	75	
80	A	14.71	14.70	33.505	24.885	308.1	0.251	5.72	99.0	2.7	0.37	0.4	0.10	0.61	0.44	80	213
90		14.17	14.16	33.436	24.947	302.5	0.282	5.45	93.3	3.9	0.51	2.4	0.22	0.48	0.47	90	212
100	ISL	13.08	13.07	33.458	25.186	279.8	0.311	4.95	82.9	7.3	0.77	6.8	0.09	0.21	0.29	100	
101		12.96	12.95	33.464	25.214	277.1	0.314	4.89	81.6	7.7	0.80	7.3	0.07	0.18	0.27	101	211
119		11.12	11.11	33.595	25.663	234.5	0.360	4.08	65.6	15.0	1.29	14.9	0.01	0.05	0.12	120	210
125	ISL	10.87	10.85	33.617	25.725	228.8	0.374	3.97	63.5	16.1	1.35	15.9	0.01	0.04	0.10	126	
139		10.56	10.54	33.657	25.811	220.8	0.405	3.81	60.5	17.9	1.43	17.3	0.01	0.02	0.07	140	209
150	ISL	10.25	10.23	33.722	25.915	211.1	0.429	3.55	56.0	20.5	1.57	19.3	0.01	0.02	0.05	151	
170		9.74	9.72	33.861	26.110	192.9	0.469	3.01	47.0	25.7	1.83	22.9	0.01	0.01	0.04	171	208
200		9.27	9.25	34.050	26.335	172.0	0.524	2.34	36.2	32.2	2.11	26.3	0.01	0.01	0.04	201	207
229		9.22	9.19	34.079	26.366	169.7	0.573	2.18	33.7	33.6	2.18	26.9	0.01			230	206
250	ISL	8.70	8.67	34.076	26.446	162.2	0.608	2.25	34.4	36.5	2.21	27.9	0.01			251	
269		8.17	8.14	34.079	26.530	154.4	0.638	2.28	34.4	39.8	2.26	29.0	0.01			271	205
300	ISL	7.87	7.84	34.139	26.621	146.1	0.685	1.83	27.4	45.3	2.44	30.9	0.00			302	
318		7.78	7.75	34.176	26.664	142.3	0.711	1.52	22.7	48.5	2.55	32.0	0.00			320	204
377		7.14	7.10	34.189	26.766	133.2	0.792	1.18	17.4	57.3	2.74	34.7	0.00			379	203
400	ISL	6.97	6.93	34.205	26.802	130.0	0.823	1.01	14.8	60.6	2.81	35.6	0.00			402	
437		6.72	6.68	34.236	26.861	124.9	0.870	0.74	10.8	66.2	2.93	36.9	0.00			440	202
500	ISL	6.12	6.08	34.285	26.978	114.1	0.945	0.45	6.5	77.0	3.10	39.2	0.00			503	
514		5.99	5.94	34.297	27.004	111.7	0.961	0.38	5.5	79.4	3.14	39.7	0.00			517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 53.2 W	04/04/98	0128 UTC	1453 m	310 20 kn	360 03 05	1	1018.8 mb	15.0 C	13.8 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	15.52	15.52	33.445	24.660	327.1	0.000	5.78	101.7	2.4	0.29	0.0	0.00	0.17	0.04	0	
2		15.52	15.52	33.445	24.660	327.2	0.007	5.78	101.7	2.4	0.29	0.0	0.00	0.17	0.04	2	220
10	ISL	15.50	15.50	33.445	24.665	327.0	0.033	5.79	101.8	2.3	0.28	0.0	0.00	0.17	0.04	10	
15		15.49	15.49	33.445	24.667	326.9	0.049	5.79	101.8	2.3	0.28	0.0	0.00	0.17	0.05	15	219
20	ISL	15.43	15.43	33.444	24.680	325.9	0.065	5.80	101.9	2.3	0.28	0.0	0.00	0.18	0.06	20	
30		15.31	15.31	33.442	24.705	323.8	0.098	5.80	101.6	2.4	0.28	0.0	0.00	0.20	0.07	30	218
45		15.29	15.28	33.435	24.705	324.3	0.146	5.78	101.2	2.4	0.27	0.0	0.00	0.26	0.08	45	217
50	ISL	15.28	15.27	33.435	24.707	324.2	0.163	5.80	101.5	2.4	0.28	0.0	0.00	0.28	0.09	50	
59		15.27	15.26	33.436	24.710	324.2	0.192	5.82	101.9	2.4	0.29	0.0	0.00	0.34	0.11	59	216
74		15.07	15.06	33.422	24.744	321.4	0.240	5.76	100.4	2.6	0.31	0.1	0.10	0.62	0.31	74	215
75	ISL	15.03	15.02	33.418	24.749	320.9	0.243	5.76	100.3	2.6	0.32	0.1	0.14	0.61	0.32	75	
84		14.71	14.70	33.405	24.808	315.5	0.272	5.67	98.1	3.2	0.38	0.6	0.40	0.48	0.35	84	214
95		14.53	14.52	33.484	24.908	306.4	0.306	5.36	92.4	4.2	0.50	2.6	0.12	0.34	0.33	95	213
100	ISL	14.30	14.29	33.488	24.960	301.5	0.322	5.25	90.1	4.7	0.55	3.5	0.07	0.29	0.32	100	
105		13.98	13.96	33.481	25.021	295.8	0.336	5.14	87.7	5.5	0.62	4.6	0.04	0.23	0.28	105	212
115		13.11	13.09	33.471	25.190	279.8	0.365	4.85	81.2	8.7	0.81	7.5	0.02	0.08	0.10	116	211
125		12.50	12.48	33.478	25.316	268.0	0.393	4.71	77.9	9.3	0.92	9.3	0.02	0.07	0.10	126	210
139		11.24	11.22	33.557	25.612	239.9	0.428	4.26	68.6	13.9	1.20	13.9	0.02	0.04	0.07	140	209
150	ISL	10.71	10.69	33.627	25.761	225.8	0.454	3.95	62.9	17.1	1.38	16.6	0.02	0.02	0.07	151	
164		10.30	10.28	33.713	25.900	212.9	0.485	3.59	56.7	20.7	1.56	19.2	0.01	0.01	0.06	165	208
194		9.50	9.48	33.872	26.158	188.7	0.545	2.99	46.4	27.3	1.87	23.6	0.01	0.00	0.05	195	207
200	ISL	9.35	9.33	33.897	26.202	184.6	0.556	2.92	45.2	28.5	1.91	24.2	0.01			201	
230		8.68	8.66	33.997	26.387	167.4	0.609	2.66	40.6	34.0	2.08	26.8	0.01			231	206
250	ISL	8.39	8.36	34.036	26.462	160.5	0.642	2.51	38.1	37.0	2.16	28.0	0.01			251	
270		8.15	8.12	34.066	26.522	155.1	0.673	2.32	35.0	40.1	2.24	29.2	0.01			271	205
300	ISL	7.75	7.72	34.121	26.625	145.7	0.718	1.83	27.4	46.9	2.45	31.5	0.00			302	
320		7.49	7.46	34.154	26.688	139.9	0.747	1.49	22.1	51.8	2.59	33.0	0.00			322	204
380		6.82	6.78	34.206	26.823	127.6	0.827	0.90	13.2	64.0	2.86	36.2	0.00			382	203
400	ISL	6.67	6.63	34.217	26.852	125.0	0.852	0.80	11.7	66.5	2.91	36.8	0.00			402	
439		6.42	6.38	34.241	26.904	120.5	0.900	0.65	9.4	71.2	3.00	37.9	0.00			442	202
500	ISL	5.91	5.87	34.306	27.021	109.8	0.970	0.41	5.9	82.5	3.16	39.9	0.00			503	
509		5.84	5.80	34.316	27.038	108.2	0.980	0.38	5.4	84.2	3.18	40.2	0.00			512	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 0.9 N	119 14.0 W	04/04/98	0545 UTC	1586 m	300 09 kn			1018.9 mb	14.4 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	15.08	15.08	33.345	24.680	325.3	0.000	5.84	101.8	2.1	0.31	0.0	0.00	0.16	0.05	0	
2		15.08	15.08	33.345	24.680	325.3	0.007	5.84	101.8	2.1	0.31	0.0	0.00	0.16	0.05	2	220
10	ISL	15.07	15.07	33.341	24.679	325.6	0.033	5.85	101.9	2.1	0.31	0.1	0.00	0.16	0.05	10	
15		15.06	15.06	33.338	24.679	325.8	0.049	5.85	101.9	2.1	0.31	0.1	0.00	0.17	0.05	15	219
20	ISL	15.01	15.01	33.333	24.686	325.3	0.065	5.85	101.8	2.1	0.31	0.1	0.00	0.17	0.06	20	
30		14.89	14.89	33.323	24.705	323.8	0.098	5.84	101.4	2.1	0.31	0.1	0.00	0.19	0.07	30	218
45		14.84	14.83	33.316	24.711	323.7	0.146	5.87	101.8	2.2	0.30	0.1	0.00	0.24	0.09	45	217
50	ISL	14.81	14.80	33.309	24.712	323.7	0.162	5.86	101.6	2.2	0.31	0.1	0.00	0.30	0.10	50	
60		14.77	14.76	33.301	24.715	323.7	0.195	5.85	101.3	2.2	0.33	0.0	0.00	0.41	0.14	60	216
74		14.81	14.80	33.331	24.730	322.7	0.240	5.79	100.3	2.2	0.33	0.1	0.05	0.43	0.26	74	215
75	ISL	14.81	14.80	33.337	24.734	322.3	0.243	5.79	100.3	2.2	0.33	0.1	0.06	0.43	0.26	75	
83		14.84	14.83	33.390	24.769	319.3	0.269	5.76	99.9	2.4	0.35	0.2	0.15	0.42	0.27	83	214
94		14.68	14.67	33.389	24.803	316.3	0.304	5.73	99.1	2.5	0.37	0.4	0.23	0.40	0.28	94	213
100	ISL	14.45	14.44	33.392	24.854	311.6	0.323	5.63	96.9	3.0	0.43	1.2	0.28	0.29	0.23	100	
104		14.23	14.21	33.396	24.904	307.0	0.335	5.53	94.7	3.6	0.49	2.0	0.30	0.21	0.20	104	212
114		13.36	13.34	33.426	25.106	287.9	0.365	5.18	87.2	5.9	0.69	5.2	0.16	0.14	0.19	114	211
124		12.56	12.54	33.449	25.281	271.3	0.393	4.86	80.5	8.3	0.87	8.3	0.03	0.10	0.15	125	210
125	ISL	12.46	12.44	33.453	25.304	269.1	0.395	4.82	79.6	8.6	0.89	8.7	0.03	0.10	0.15	126	
139		11.17	11.15	33.543	25.614	239.7	0.431	4.32	69.5	13.6	1.22	13.9	0.02	0.05	0.09	140	209
150	ISL	10.50	10.48	33.630	25.800	222.1	0.456	3.95	62.6	17.4	1.43	17.2	0.01	0.03	0.07	151	
164		9.93	9.91	33.739	25.983	204.9	0.486	3.53	55.3	21.9	1.66	20.6	0.01	0.01	0.05	165	208
193		9.26	9.24	33.914	26.230	181.8	0.542	2.89	44.7	28.9	1.96	24.8	0.01	0.04	0.01	194	207
200	ISL	9.13	9.11	33.952	26.281	177.1	0.555	2.76	42.5	30.6	2.02	25.6	0.01			201	
228		8.70	8.68	34.076	26.446	161.8	0.602	2.29	35.0	36.7	2.23	28.1	0.00			229	206
250	ISL	8.45	8.42	34.130	26.527	154.5	0.637	1.99	30.2	40.8	2.37	29.6	0.00			251	
268		8.27	8.24	34.153	26.573	150.4	0.665	1.80	27.2	43.6	2.46	30.5	0.00			269	205
300	ISL	7.95	7.92	34.157	26.624	145.9	0.712	1.69	25.4	47.0	2.53	31.7	0.00			302	
318		7.75	7.72	34.150	26.648	143.8	0.738	1.66	24.8	48.9	2.56	32.3	0.00			320	204
376		6.94	6.90	34.160	26.770	132.6	0.818	1.23	18.1	59.5	2.78	35.4	0.00			378	203
400	ISL	6.73	6.69	34.174	26.810	129.1	0.850	1.04	15.2	63.3	2.86	36.4	0.00			402	
437		6.49	6.45	34.201	26.864	124.3	0.897	0.78	11.3	68.7	2.98	37.8	0.00			440	202
500	ISL	6.12	6.08	34.247	26.948	116.9	0.973	0.51	7.3	76.6	3.14	39.5	0.00			503	
512		6.05	6.00	34.256	26.964	115.4	0.986	0.46	6.6	78.1	3.17	39.8	0.00			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 34.3 W	04/04/98	0953 UTC	1818 m	290 05 kn			1017.1 mb	14.8 C	11.2 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	15.53	15.53	33.465	24.673	325.9	0.000	5.76	101.4	2.2	0.27	0.0	0.01	0.14	0.04	0	
2		15.53	15.53	33.465	24.673	325.9	0.007	5.76	101.4	2.2	0.27	0.0	0.01	0.14	0.04	2	220
10	ISL	15.53	15.53	33.465	24.674	326.2	0.033	5.77	101.6	2.2	0.27	0.0	0.00	0.14	0.04	10	
14		15.53	15.53	33.465	24.674	326.3	0.046	5.77	101.6	2.2	0.27	0.0	0.00	0.14	0.04	14	219
20	ISL	15.50	15.50	33.452	24.671	326.8	0.065	5.78	101.7	2.2	0.27	0.0	0.00	0.14	0.04	20	
29		15.46	15.46	33.436	24.667	327.3	0.095	5.79	101.7	2.1	0.27	0.0	0.00	0.14	0.05	29	218
30	ISL	15.44	15.44	33.431	24.668	327.3	0.098	5.79	101.7	2.1	0.27	0.0	0.00	0.14	0.05	30	
44		15.12	15.11	33.371	24.692	325.4	0.144	5.77	100.7	2.1	0.29	0.0	0.00	0.18	0.05	44	217
50	ISL	15.07	15.06	33.365	24.699	325.0	0.163	5.80	101.1	2.1	0.30	0.0	0.00	0.21	0.06	50	
59		15.04	15.03	33.363	24.704	324.7	0.192	5.84	101.7	2.1	0.30	0.0	0.00	0.25	0.08	59	216
74		14.98	14.97	33.350	24.708	324.8	0.241	5.84	101.6	2.1	0.30	0.0	0.00	0.27	0.10	74	215
75	ISL	14.97	14.96	33.348	24.708	324.8	0.244	5.84	101.6	2.1	0.30	0.0	0.00	0.28	0.10	75	
84		14.85	14.84	33.327	24.718	324.1	0.274	5.85	101.5	2.2	0.31	0.0	0.00	0.34	0.14	84	214
94		14.61	14.60	33.297	24.747	321.7	0.306	5.85	100.9	2.3	0.33	0.1	0.07	0.36	0.24	94	213
100	ISL	14.48	14.47	33.378	24.837	313.2	0.325	5.61	96.6	2.8	0.41	1.4	0.08	0.32	0.26	100	
104		14.30	14.28	33.435	24.919	305.5	0.337	5.41	92.8	3.5	0.49	2.6	0.08	0.28	0.27	104	212
114		13.10	13.08	33.443	25.171	281.6	0.367	5.01	83.9	6.6	0.76	6.8	0.02	0.13	0.13	114	211
124		12.17	12.15	33.474	25.375	262.2	0.394	4.71	77.3	9.4	0.96	9.8	0.02	0.07	0.09	125	210
125	ISL	12.13	12.11	33.476	25.385	261.4	0.396	4.70	77.1	9.5	0.97	9.9	0.02	0.07	0.09	126	
139		11.73	11.71	33.502	25.480	252.6	0.432	4.57	74.4	11.0	1.06	11.3	0.02	0.07	0.08	140	209
150	ISL	11.06	11.04	33.571	25.656	235.9	0.459	4.21	67.5	14.5	1.27	14.5	0.02	0.04	0.07	151	
161		10.37	10.35	33.657	25.844	218.1	0.484	3.81	60.2	18.4	1.49	18.1	0.01	0.01	0.05	162	208
194		9.55	9.53	33.827	26.115	192.9	0.552	3.22	50.1	25.1	1.79	22.6	0.01	0.00	0.03	195	207
200	ISL	9.46	9.44	33.856	26.152	189.4	0.564	3.12	48.4	26.1	1.84	23.2	0.01			201	
228		9.14	9.12	33.977	26.299	175.9	0.615	2.67	41.2	30.8	2.04	25.8	0.00			229	206
250	ISL	8.88	8.85	34.054	26.401	166.6	0.652	2.37	36.3	34.6	2.17	27.3	0.00			251	
269		8.64	8.61	34.104	26.478	159.6	0.683	2.14	32.6	38.1	2.28	28.5	0.00			270	205
300	ISL	8.15	8.12	34.145	26.585	149.8	0.731	1.81	27.3	44.2	2.44	30.6	0.00			302	
317		7.86	7.83	34.156	26.637	145.0	0.756	1.64	24.6	47.7	2.52	31.7	0.00			319	204
377		6.88	6.84	34.175	26.790	130.7	0.839	1.12	16.4	61.1	2.80	35.7	0.00			379	203
400	ISL	6.56	6.52	34.184	26.840	126.0	0.869	0.95	13.8	66.1	2.89	37.0	0.00			402	
437		6.15	6.11	34.201	26.907	119.9	0.914	0.72	10.4	73.0	3.02	38.7	0.00			440	202
500	ISL	5.85	5.81	34.237	26.974	114.1	0.988	0.54	7.7	79.1	3.12	40.0	0.00			503	
516		5.78	5.74	34.246	26.990	112.7	1.006	0.50	7.1	80.7	3.14	40.3	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 15.1 W	04/04/98	1836 UTC	3926 m	250 05 kn	250 05 06	1	1018.5 mb	17.4 C	13.5 C	34m 01	5/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.99	15.99	33.535	24.624	330.6	0.000	5.68	100.9	2.1	0.26	0.0	0.00	0.10	0.03	0	
2	A	15.99	15.99	33.535	24.624	330.6	0.007	5.68	100.9	2.1	0.26	0.0	0.00	0.10	0.03	2	223
2		15.99	15.99	33.535	24.624	330.6	0.007									2	224
10	ISL	15.97	15.97	33.535	24.629	330.4	0.033	5.69	101.1	2.1	0.26	0.0	0.00	0.11	0.03	10	
14		15.95	15.95	33.535	24.634	330.1	0.046	5.69	101.0	2.1	0.26	0.0	0.00	0.11	0.03	14	222
20	ISL	15.94	15.94	33.535	24.636	330.1	0.066	5.68	100.8	2.1	0.26	0.0	0.00	0.11	0.03	20	
25	A	15.93	15.93	33.535	24.638	330.0	0.083	5.68	100.8	2.1	0.26	0.0	0.00	0.11	0.03	25	221
30	ISL	15.93	15.93	33.534	24.638	330.2	0.099	5.68	100.8	2.1	0.26	0.0	0.00	0.11	0.03	30	
36		15.92	15.91	33.533	24.640	330.2	0.119	5.69	101.0	2.1	0.25	0.0	0.00	0.12	0.03	36	220
47	A	15.90	15.89	33.528	24.641	330.5	0.155	5.69	100.9	2.1	0.25	0.0	0.00	0.12	0.03	47	219
50	ISL	15.90	15.89	33.527	24.640	330.6	0.165	5.69	100.9	2.1	0.25	0.0	0.00	0.12	0.03	50	
59		15.89	15.88	33.525	24.641	330.8	0.195	5.69	100.9	2.1	0.25	0.0	0.00	0.13	0.03	59	218
72	A	15.85	15.84	33.516	24.644	331.0	0.238	5.70	101.0	2.1	0.26	0.0	0.00	0.14	0.04	72	216
73		15.84	15.83	33.514	24.644	331.0	0.241									73	217
75	ISL	15.82	15.81	33.510	24.646	330.9	0.248	5.70	100.9	2.1	0.26	0.0	0.00	0.16	0.05	75	
83		15.73	15.72	33.492	24.652	330.5	0.274	5.71	100.9	2.1	0.26	0.0	0.00	0.23	0.07	83	215
93	A	15.66	15.65	33.477	24.657	330.4	0.307	5.71	100.7	2.1	0.27	0.0	0.00	0.27	0.09	93	214
100		15.64	15.62	33.473	24.658	330.4	0.330	5.70	100.5	2.0	0.27	0.0	0.00	0.26	0.10	100	213
112		14.88	14.86	33.470	24.823	315.0	0.369	5.52	95.9	2.9	0.38	1.2	0.12	0.35	0.34	112	212
119		13.97	13.95	33.443	24.995	298.7	0.391	5.32	90.7	4.4	0.54	3.4	0.07	0.22	0.25	120	211
125	ISL	13.33	13.31	33.443	25.125	286.3	0.408	5.08	85.5	6.1	0.70	5.8	0.04	0.13	0.16	126	
131	A	12.80	12.78	33.454	25.239	275.5	0.425	4.84	80.5	7.7	0.85	8.0	0.01	0.06	0.08	132	210
150		11.76	11.74	33.500	25.473	253.5	0.475	4.53	73.7	10.5	1.05	11.2	0.01	0.05	0.06	151	209
163		10.85	10.83	33.574	25.696	232.4	0.507	4.20	67.1	14.6	1.28	15.0	0.01	0.02	0.04	164	208
196		9.49	9.47	33.794	26.099	194.4	0.577	3.38	52.5	24.1	1.74	22.2	0.01	0.00	0.02	197	207
200	ISL	9.39	9.37	33.822	26.137	190.8	0.585	3.29	51.0	25.1	1.78	22.8	0.01			201	
226		8.88	8.86	33.968	26.333	172.5	0.632	2.83	43.4	31.0	2.00	25.8	0.01			227	206
250	ISL	8.44	8.41	34.000	26.427	163.9	0.673	2.80	42.5	34.0	2.05	27.0	0.01			251	
269		8.16	8.13	34.006	26.474	159.7	0.703	2.79	42.1	36.1	2.09	27.7	0.01			270	205
300	ISL	7.94	7.91	34.090	26.573	150.7	0.752	2.18	32.7	42.3	2.43	30.0	0.01			302	
316		7.85	7.82	34.134	26.621	146.4	0.775	1.82	27.3	45.7	2.61	31.2	0.01			318	204
372		7.28	7.24	34.182	26.741	135.6	0.854	1.22	18.0	55.2	2.71	34.3	0.00			374	203
400	ISL	7.04	7.00	34.196	26.785	131.7	0.892	1.01	14.9	59.4	2.85	35.5	0.00			402	
436		6.75	6.71	34.209	26.835	127.2	0.938	0.81	11.8	64.6	3.02	36.9	0.00			439	202
500	ISL	6.16	6.12	34.226	26.927	119.0	1.017	0.60	8.6	73.9	3.07	39.0	0.00			503	
514		6.03	5.98	34.230	26.946	117.1	1.034	0.55	7.9	75.9	3.08	39.4	0.00			517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 11.1 N	120 55.0 W	05/04/98	0134 UTC	3818 m	270 06 kn	270 05 04	1	1016.1 mb	15.3 C	13.1 C		4/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.24	16.24	33.546	24.576	335.2	0.000	5.66	101.1	2.1	0.28	0.0	0.00	0.08	0.02	0	
2		16.24	16.24	33.546	24.576	335.2	0.007	5.66	101.1	2.1	0.28	0.0	0.00	0.08	0.02	2	220
10	ISL	16.23	16.23	33.545	24.578	335.3	0.034	5.67	101.2	2.1	0.27	0.0	0.00	0.09	0.02	10	
14		16.22	16.22	33.544	24.579	335.3	0.047	5.68	101.4	2.1	0.26	0.0	0.00	0.09	0.02	14	219
20	ISL	16.17	16.17	33.546	24.592	334.2	0.067	5.68	101.3	2.1	0.26	0.0	0.00	0.09	0.02	20	
28		16.11	16.11	33.548	24.608	333.0	0.094	5.68	101.2	2.1	0.26	0.0	0.00	0.09	0.03	28	218
30	ISL	16.11	16.11	33.547	24.607	333.2	0.100	5.68	101.2	2.1	0.26	0.0	0.00	0.09	0.03	30	
44		16.10	16.09	33.540	24.604	333.9	0.147	5.69	101.3	2.1	0.26	0.0	0.00	0.10	0.02	44	217
50	ISL	16.10	16.09	33.539	24.604	334.1	0.167	5.69	101.3	2.1	0.26	0.0	0.00	0.10	0.02	50	
59		16.09	16.08	33.540	24.607	334.1	0.197	5.68	101.1	2.1	0.26	0.0	0.00	0.11	0.03	59	216
74		16.09	16.08	33.544	24.611	334.2	0.247	5.68	101.1	2.1	0.25	0.0	0.00	0.15	0.04	74	215
75	ISL	16.09	16.08	33.543	24.610	334.3	0.251	5.68	101.1	2.1	0.25	0.0	0.00	0.16	0.04	75	
84		16.07	16.06	33.537	24.610	334.6	0.281	5.68	101.1	2.0	0.26	0.0	0.00	0.20	0.06	84	214
94		16.07	16.06	33.539	24.612	334.7	0.314	5.65	100.5	2.1	0.25	0.0	0.00	0.21	0.07	94	213
100	ISL	16.04	16.02	33.536	24.617	334.4	0.334	5.65	100.5	2.1	0.25	0.0	0.00	0.24	0.09	100	
104		16.02	16.00	33.534	24.620	334.3	0.348	5.65	100.4	2.1	0.25	0.0	0.00	0.26	0.11	104	212
114		15.40	15.38	33.504	24.736	323.5	0.381	5.55	97.4	2.6	0.34	0.6	0.08	0.53	0.41	114	211
124		14.20	14.18	33.448	24.951	303.1	0.412	5.23	89.6	4.5	0.56	3.6	0.04	0.29	0.31	125	210
125	ISL	14.09	14.07	33.445	24.971	301.1	0.415	5.20	88.9	4.7	0.58	3.9	0.04	0.28	0.30	126	
139		12.80	12.78	33.442	25.230	276.6	0.455	4.86	80.9	7.4	0.82	7.5	0.02	0.16	0.18	140	209
150	ISL	12.05	12.03	33.481	25.404	260.1	0.485	4.57	74.9	9.9	1.00	10.4	0.02	0.09	0.11	151	
166		11.17	11.15	33.568	25.634	238.4	0.525	4.18	67.2	13.8	1.24	14.3	0.01	0.03	0.05	167	208
193		9.89	9.87	33.731	25.984	205.4	0.585	3.71	58.1	20.5	1.55	19.6	0.01	0.01	0.03	194	207
200	ISL	9.64	9.62	33.771	26.057	198.6	0.599	3.61	56.2	22.2	1.62	20.7	0.01			201	
228		8.86	8.84	33.908	26.289	176.7	0.651	3.26	49.9	28.3	1.84	24.2	0.01			229	206
250	ISL	8.49	8.46	33.979	26.402	166.3	0.689	3.00	45.6	32.4	1.97	26.1	0.01			251	
269		8.23	8.20	34.018	26.473	159.8	0.720	2.79	42.2	35.8	2.07	27.4	0.01			270	205
300	ISL	7.71	7.68	34.047	26.573	150.6	0.768	2.48	37.0	41.7	2.25	29.6	0.00			302	
318		7.43	7.40	34.055	26.619	146.3	0.795	2.29	34.0	45.2	2.35	30.8	0.00			320	204
376		6.82	6.79	34.103	26.742	135.2	0.877	1.55	22.7	56.5	2.66	34.6	0.00			378	203
400	ISL	6.62	6.58	34.126	26.787	131.1	0.908	1.29	18.8	60.7	2.77	35.9	0.00			402	
440		6.34	6.30	34.165	26.855	125.1	0.960	0.94	13.6	67.2	2.92	37.6	0.00			443	202
500	ISL	6.00	5.96	34.213	26.937	117.8	1.033	0.68	9.8	75.1	3.07	39.3	0.00			503	
510		5.94	5.90	34.221	26.950	116.6	1.044	0.64	9.2	76.4	3.10	39.6	0.00			513	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 35.6 W	05/04/98	0724 UTC	4117 m	290 03 kn			1016.0 mb	15.0 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	16.14	16.14	33.561	24.610	331.9	0.000	5.69	101.4	1.8	0.26	0.0	0.00	0.13	0.04	0	
2		16.14	16.14	33.561	24.610	332.0	0.007	5.69	101.4	1.8	0.26	0.0	0.00	0.13	0.04	2	220
10	ISL	16.14	16.14	33.560	24.610	332.3	0.033	5.70	101.6	1.8	0.26	0.0	0.00	0.13	0.03	10	
15		16.14	16.14	33.560	24.610	332.4	0.050	5.71	101.8	1.8	0.26	0.0	0.00	0.13	0.03	15	219
20	ISL	16.14	16.14	33.562	24.611	332.4	0.066	5.69	101.4	1.8	0.26	0.0	0.00	0.13	0.03	20	
30		16.14	16.14	33.565	24.614	332.5	0.100	5.66	100.9	1.8	0.27	0.0	0.00	0.13	0.03	30	218
44		16.13	16.12	33.560	24.613	333.0	0.146	5.69	101.4	1.7	0.27	0.0	0.00	0.13	0.04	44	217
50	ISL	16.11	16.10	33.557	24.616	333.0	0.166	5.69	101.4	1.7	0.28	0.0	0.00	0.13	0.04	50	
59		16.09	16.08	33.553	24.617	333.1	0.196	5.70	101.5	1.7	0.30	0.0	0.00	0.13	0.04	59	216
74		16.08	16.07	33.559	24.625	332.9	0.246	5.69	101.3	1.7	0.30	0.0	0.00	0.15	0.04	74	215
75	ISL	16.08	16.07	33.559	24.625	332.9	0.250	5.69	101.3	1.7	0.30	0.0	0.00	0.15	0.04	75	
84		16.08	16.07	33.559	24.625	333.2	0.279	5.71	101.6	1.7	0.27	0.0	0.00	0.14	0.04	84	214
94		16.08	16.07	33.557	24.624	333.6	0.313	5.72	101.8	1.7	0.26	0.0	0.00	0.15	0.04	94	213
100	ISL	16.01	15.99	33.578	24.656	330.7	0.333	5.67	100.8	1.9	0.26	0.1	0.01	0.28	0.16	100	
105		15.84	15.82	33.594	24.707	326.0	0.349	5.61	99.4	2.1	0.26	0.2	0.02	0.37	0.27	105	212
115		15.04	15.02	33.589	24.880	309.7	0.381	5.47	95.4	2.9	0.36	1.3	0.10	0.31	0.33	115	211
124		13.79	13.77	33.453	25.039	294.5	0.408	5.28	89.7	4.4	0.56	3.7	0.06	0.25	0.28	125	210
125	ISL	13.65	13.63	33.448	25.064	292.2	0.411	5.25	88.9	4.7	0.59	4.1	0.06	0.24	0.27	126	
138		12.14	12.12	33.466	25.375	262.6	0.447	4.78	78.4	8.5	0.92	9.1	0.02	0.14	0.15	139	209
150	ISL	11.40	11.38	33.523	25.557	245.4	0.478	4.47	72.2	11.6	1.12	12.3	0.02	0.08	0.09	151	
163		10.91	10.89	33.592	25.699	232.1	0.509	4.22	67.5	14.6	1.27	15.0	0.01	0.04	0.05	164	208
192		9.67	9.65	33.708	26.002	203.5	0.572	3.87	60.3	20.7	1.55	19.7	0.00	0.01	0.02	193	207
200	ISL	9.53	9.51	33.760	26.066	197.6	0.588	3.68	57.2	22.4	1.64	20.9	0.00			201	
228		9.21	9.18	33.931	26.252	180.4	0.641	3.01	46.5	28.3	1.91	24.4	0.00			229	206
250	ISL	8.74	8.71	33.997	26.378	168.7	0.679	2.81	42.9	32.4	2.03	26.2	0.00			251	
268		8.34	8.31	34.031	26.466	160.5	0.709	2.71	41.0	35.6	2.10	27.4	0.00			269	205
300	ISL	7.87	7.84	34.080	26.575	150.5	0.759	2.35	35.2	41.3	2.28	29.6	0.00			302	
318		7.66	7.63	34.099	26.621	146.3	0.785	2.12	31.6	44.7	2.38	30.8	0.00			320	204
379		6.97	6.93	34.156	26.763	133.4	0.871	1.24	18.2	58.0	2.73	35.1	0.00			381	203
400	ISL	6.75	6.71	34.165	26.800	130.0	0.898	1.09	15.9	61.4	2.81	36.1	0.00			402	
437		6.42	6.38	34.176	26.853	125.3	0.945	0.92	13.3	66.5	2.92	37.5	0.00			440	202
500	ISL	6.10	6.06	34.208	26.920	119.5	1.023	0.66	9.5	73.1	3.02	38.9	0.00			503	
511		6.04	5.99	34.214	26.932	118.4	1.036	0.62	8.9	74.3	3.04	39.2	0.00			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
30 31.0 N	122 15.6 W	05/04/98	1303 UTC	4189 m	080 01 kn			1014.1 mb	15.6 C	12.9 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	16.20	16.20	33.612	24.635	329.5	0.000	5.69	101.6	2.1	0.24	0.1	0.00	0.10	0.04	0	
2		16.20	16.20	33.612	24.636	329.5	0.007	5.69	101.6	2.1	0.24	0.1	0.00	0.10	0.04	2	220
10	ISL	16.20	16.20	33.610	24.634	329.9	0.033	5.69	101.6	2.1	0.24	0.1	0.00	0.09	0.03	10	
15		16.20	16.20	33.609	24.634	330.1	0.049	5.68	101.4	2.1	0.24	0.1	0.00	0.09	0.03	15	219
20	ISL	16.22	16.22	33.614	24.633	330.3	0.066	5.67	101.3	2.1	0.24	0.1	0.00	0.09	0.03	20	
30		16.25	16.25	33.626	24.636	330.4	0.099	5.65	101.0	2.1	0.24	0.0	0.00	0.10	0.03	30	218
44		16.25	16.24	33.628	24.638	330.7	0.145	5.65	101.0	2.1	0.23	0.0	0.00	0.09	0.03	44	217
50	ISL	16.33	16.32	33.657	24.642	330.5	0.165	5.64	101.0	2.1	0.23	0.0	0.00	0.08	0.03	50	
60		16.46	16.45	33.709	24.653	329.8	0.198	5.63	101.1	2.0	0.23	0.0	0.00	0.08	0.02	60	216
75		16.49	16.48	33.722	24.656	330.0	0.248	5.63	101.1	2.0	0.23	0.0	0.00	0.10	0.03	75	215
85		16.47	16.46	33.722	24.661	329.8	0.281	5.64	101.3	2.0	0.25	0.0	0.00	0.11	0.03	85	214
94		16.07	16.06	33.658	24.704	326.0	0.310	5.62	100.1	2.1	0.23	0.0	0.00	0.27	0.16	94	213
100	ISL	16.04	16.02	33.692	24.737	323.0	0.330	5.58	99.3	2.3	0.23	0.1	0.02	0.32	0.23	100	
104		16.01	15.99	33.719	24.765	320.5	0.342	5.55	98.8	2.4	0.23	0.2	0.04	0.34	0.27	104	212
114		15.40	15.38	33.687	24.877	310.1	0.374	5.44	95.6	2.9	0.32	1.1	0.10	0.33	0.27	114	211
123		14.08	14.06	33.596	25.090	289.8	0.401	5.29	90.5	4.4	0.51	3.4	0.05	0.22	0.24	124	210
125	ISL	13.78	13.76	33.575	25.136	285.4	0.407	5.24	89.0	4.9	0.56	4.1	0.04	0.20	0.23	126	
138		12.12	12.10	33.483	25.392	261.0	0.442	4.93	80.9	8.2	0.86	8.5	0.02	0.13	0.15	139	209
150	ISL	11.36	11.34	33.496	25.543	246.7	0.473	4.69	75.7	10.6	1.04	11.3	0.02	0.08	0.10	151	
163		10.90	10.88	33.549	25.667	235.1	0.504	4.46	71.3	13.1	1.18	13.6	0.01	0.05	0.06	164	208
194		9.79	9.77	33.677	25.958	207.8	0.573	3.97	62.0	19.5	1.49	18.8	0.01	0.01	0.03	195	207
200	ISL	9.60	9.58	33.706	26.012	202.7	0.585	3.89	60.5	20.8	1.54	19.7	0.01			201	
229		8.81	8.79	33.843	26.246	180.8	0.641	3.54	54.1	27.0	1.78	23.4	0.00			230	206
250	ISL	8.40	8.37	33.927	26.375	168.8	0.677	3.22	48.8	31.6	1.93	25.7	0.00			251	
267		8.14	8.11	33.981	26.457	161.2	0.705	2.97	44.8	35.1	2.04	27.2	0.00			268	205
300	ISL	7.70	7.67	34.021	26.553	152.4	0.757	2.68	40.0	40.2	2.18	29.2	0.00			302	
318		7.49	7.46	34.028	26.589	149.2	0.784	2.54	37.7	43.0	2.25	30.1	0.00			320	204
377		6.73	6.70	34.071	26.729	136.4	0.868	1.74	25.4	55.9	2.60	34.5	0.00			379	203
400	ISL	6.56	6.52	34.091	26.767	132.9	0.899	1.49	21.7	59.7	2.70	35.7	0.00			402	
438		6.36	6.32	34.126	26.821	128.2	0.949	1.12	16.2	65.3	2.85	37.3	0.00			441	202
500	ISL	6.01	5.97	34.196	26.922	119.2	1.026	0.65	9.3	74.5	3.04	39.4	0.00			503	
510		5.95	5.91	34.208	26.939	117.7	1.038	0.57	8.2	76.0	3.07	39.7	0.00			513	201

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 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 55.5 W	05/04/98	1848 UTC	3569 m	020 02 kn	030 01 04	8	1016.1 mb	16.8 C	14.0 C	46m 01	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	16.84	16.84	33.656	24.521	340.3	0.000	5.60	101.3	2.1	0.25	0.0	0.00	0.07	0.02	0	
1	A	16.84	16.84	33.656	24.521	340.4	0.003	5.60	101.3	2.1	0.25	0.0	0.00	0.07	0.02	1	222
2		16.84	16.84	33.660	24.525	340.1	0.007									2	223
10	ISL	16.84	16.84	33.661	24.526	340.3	0.034	5.59	101.1	2.1	0.25	0.0	0.00	0.07	0.02	10	
19		16.84	16.84	33.663	24.527	340.4	0.065	5.59	101.1	2.1	0.24	0.0	0.00	0.08	0.02	19	221
20	ISL	16.84	16.84	33.663	24.528	340.4	0.068	5.59	101.1	2.1	0.24	0.0	0.00	0.08	0.02	20	
30	ISL	16.84	16.84	33.664	24.529	340.7	0.102	5.60	101.3	2.1	0.24	0.0	0.00	0.08	0.02	30	
34	A	16.84	16.83	33.664	24.529	340.8	0.116	5.60	101.3	2.1	0.24	0.0	0.00	0.08	0.02	34	220
49		16.83	16.82	33.666	24.533	340.8	0.167	5.60	101.2	2.0	0.24	0.0	0.00	0.09	0.02	49	219
50	ISL	16.83	16.82	33.666	24.533	340.9	0.170	5.60	101.2	2.0	0.24	0.0	0.00	0.09	0.02	50	
65	A	16.82	16.81	33.664	24.535	341.2	0.221	5.60	101.2	2.1	0.24	0.0	0.00	0.11	0.03	65	218
75	ISL	16.80	16.79	33.658	24.535	341.5	0.256	5.60	101.2	2.1	0.24	0.0	0.00	0.12	0.04	75	
81		16.79	16.78	33.655	24.535	341.7	0.276	5.60	101.1	2.1	0.24	0.0	0.00	0.13	0.04	81	217
98	A	16.34	16.32	33.606	24.603	335.8	0.334	5.63	100.8	2.2	0.25	0.0	0.00	0.25	0.12	98	216
100	ISL	16.35	16.33	33.611	24.604	335.7	0.340	5.63	100.8	2.2	0.25	0.0	0.00	0.23	0.10	100	
107		16.38	16.36	33.627	24.610	335.4	0.364	5.63	100.9	2.2	0.24	0.0	0.00	0.17	0.05	107	215
115		16.28	16.26	33.623	24.630	333.8	0.391	5.62	100.5	2.1	0.24	0.0	0.00	0.23	0.10	115	214
125	A	14.44	14.42	33.442	24.896	308.4	0.423	5.45	93.8	3.5	0.45	1.6	0.08	0.35	0.36	126	212
126		14.50	14.48	33.448	24.888	309.2	0.426									127	213
138		13.12	13.10	33.445	25.169	282.5	0.461	5.09	85.2	5.8	0.70	5.3	0.06	0.28	0.32	139	211
150	ISL	12.22	12.20	33.501	25.388	261.7	0.494	4.80	78.9	7.8	0.86	8.1	0.03	0.18	0.22	151	
151		12.16	12.14	33.506	25.403	260.3	0.497	4.78	78.5	8.0	0.87	8.3	0.03	0.17	0.21	152	210
164		11.45	11.43	33.543	25.564	245.1	0.529	4.59	74.2	10.9	1.05	11.4	0.01	0.10	0.14	165	209
179	A	10.65	10.63	33.641	25.783	224.4	0.565	4.08	64.9	15.7	1.33	16.0	0.01	0.04	0.05	180	208
195		10.06	10.04	33.722	25.948	208.9	0.599	3.68	57.8	19.8	1.55	19.3	0.00	0.02	0.04	196	207
200	ISL	9.94	9.92	33.759	25.997	204.3	0.610	3.56	55.8	21.0	1.61	20.1	0.00			201	
228		9.40	9.37	33.952	26.238	181.9	0.664	3.01	46.7	27.0	1.87	23.7	0.00			229	206
250	ISL	8.89	8.86	34.015	26.369	169.7	0.702	2.80	42.9	31.4	2.01	25.8	0.00			251	
268		8.50	8.47	34.038	26.448	162.3	0.732	2.69	40.9	34.7	2.10	27.1	0.00			269	205
300	ISL	8.02	7.99	34.071	26.546	153.3	0.783	2.40	36.1	40.0	2.25	29.2	0.00			302	
318		7.80	7.77	34.082	26.587	149.6	0.810	2.22	33.2	42.9	2.33	30.2	0.00			320	204
378		7.18	7.14	34.131	26.715	138.1	0.896	1.50	22.1	53.6	2.63	33.9	0.00			380	203
400	ISL	6.92	6.88	34.143	26.760	133.9	0.926	1.29	18.9	57.9	2.73	35.2	0.00			402	
437		6.51	6.47	34.162	26.830	127.5	0.975	0.99	14.4	65.0	2.87	37.2	0.00			440	202
500	ISL	6.06	6.02	34.212	26.928	118.7	1.052	0.64	9.2	74.3	3.05	39.2	0.00			503	
516		5.95	5.90	34.225	26.952	116.5	1.071	0.55	7.9	76.6	3.09	39.7	0.00			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 9804 STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
29 49.8 N	123 34.5 W	06/04/98	0213 UTC	4060 m	010 06 kn	360 02 04	1	1017.1 mb	17.4 C	14.9 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	16.82	16.82	33.660	24.529	339.6	0.000	5.61	101.4	1.7	0.25	0.0	0.00	0.07	0.01	0	
1		16.82	16.82	33.660	24.529	339.6	0.003	5.61	101.4	1.7	0.25	0.0	0.00	0.07	0.01	1	220
10	ISL	16.76	16.76	33.657	24.541	338.8	0.034	5.61	101.3	1.7	0.25	0.0	0.00	0.07	0.01	10	
14		16.73	16.73	33.656	24.548	338.3	0.047	5.61	101.2	1.7	0.25	0.0	0.00	0.07	0.01	14	219
20	ISL	16.71	16.71	33.655	24.552	338.1	0.068	5.62	101.4	1.7	0.25	0.0	0.00	0.08	0.01	20	
30		16.69	16.69	33.654	24.556	338.0	0.102	5.62	101.3	1.6	0.25	0.0	0.00	0.09	0.02	30	218
44		16.68	16.67	33.654	24.559	338.2	0.149	5.59	100.8	1.7	0.25	0.0	0.00	0.10	0.02	44	217
50	ISL	16.68	16.67	33.654	24.559	338.4	0.169	5.60	100.9	1.7	0.25	0.0	0.00	0.11	0.02	50	
60		16.68	16.67	33.653	24.559	338.8	0.203	5.62	101.3	1.7	0.25	0.0	0.00	0.12	0.02	60	216
74		16.66	16.65	33.653	24.564	338.8	0.250	5.62	101.3	1.8	0.25	0.0	0.00	0.13	0.03	74	215
75	ISL	16.66	16.65	33.653	24.564	338.8	0.254	5.62	101.3	1.8	0.25	0.0	0.00	0.13	0.03	75	
84		16.63	16.62	33.646	24.566	338.9	0.284	5.61	101.0	1.8	0.25	0.0	0.00	0.16	0.04	84	214
93		16.51	16.50	33.635	24.585	337.3	0.315	5.62	100.9	1.8	0.24	0.0	0.00	0.21	0.08	93	213
100	ISL	15.89	15.87	33.549	24.661	330.3	0.338	5.59	99.1	2.2	0.29	0.2	0.02	0.34	0.23	100	
103		15.51	15.49	33.506	24.713	325.3	0.348	5.58	98.2	2.5	0.33	0.3	0.03	0.39	0.30	103	212
113		13.91	13.89	33.422	24.990	298.9	0.379	5.36	91.2	4.1	0.53	2.8	0.09	0.35	0.38	113	211
124		12.48	12.46	33.447	25.295	269.9	0.411	4.96	82.0	7.3	0.82	7.4	0.04	0.22	0.31	125	210
125	ISL	12.42	12.40	33.450	25.309	268.6	0.413	4.94	81.5	7.5	0.83	7.6	0.04	0.21	0.31	126	
139		11.84	11.82	33.491	25.451	255.3	0.450	4.69	76.5	9.5	0.98	10.0	0.02	0.16	0.24	140	209
150	ISL	11.17	11.15	33.557	25.625	238.9	0.477	4.35	70.0	12.9	1.18	13.4	0.01	0.11	0.16	151	
163		10.38	10.36	33.651	25.838	218.8	0.507	3.91	61.8	17.4	1.44	17.5	0.00	0.05	0.07	164	208
193		9.37	9.35	33.830	26.146	189.8	0.568	3.25	50.3	25.2	1.80	23.0	0.00	0.00	0.03	194	207
200	ISL	9.21	9.19	33.862	26.197	185.0	0.581	3.17	48.9	26.5	1.85	23.7	0.00			201	
230		8.70	8.68	33.965	26.359	170.1	0.634	2.93	44.7	31.5	2.00	25.8	0.00			231	206
250	ISL	8.39	8.36	34.013	26.444	162.2	0.668	2.73	41.4	35.2	2.09	27.2	0.00			251	
269		8.12	8.09	34.045	26.510	156.2	0.698	2.53	38.1	38.6	2.18	28.5	0.00			270	205
300	ISL	7.74	7.71	34.075	26.590	149.0	0.745	2.23	33.3	43.7	2.34	30.4	0.00			302	
318		7.54	7.51	34.086	26.628	145.6	0.772	2.05	30.5	46.6	2.43	31.4	0.00			320	204
378		6.97	6.93	34.126	26.740	135.6	0.856	1.43	21.0	56.7	2.70	34.6	0.00			380	203
400	ISL	6.77	6.73	34.146	26.783	131.7	0.886	1.21	17.7	60.6	2.80	35.7	0.00			402	
439		6.43	6.39	34.180	26.855	125.1	0.936	0.88	12.8	67.3	2.96	37.5	0.00			442	202
500	ISL	5.97	5.93	34.215	26.942	117.3	1.010	0.60	8.6	76.3	3.10	39.5	0.00			503	
512		5.88	5.84	34.222	26.959	115.8	1.024	0.54	7.7	78.1	3.13	39.9	0.00			515	201

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 67 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
36 27.1 N	122 46.2 W	21/ 4/98	1843 UTC	9 m	04	1211 - 1918 PST	1211 PST	1918 PST	273.5 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	13.33	31.965	23.979	6.48	108.1	1.0	0.19	0.1	0.00	1.54	0.38	71. A	17.4	16.7	17.1	0.21
7	13.28	31.976	23.997	6.48	107.9	1.0	0.17	0.0	0.00	1.49	0.46	30.	20.7	21.4	21.1	0.18
14	13.26	32.506	24.411	6.28	104.9	0.9	0.24	0.0	0.00	0.75	0.21	9.2	8.3	7.7	8.0	0.13
19	13.23	32.652	24.530	6.20	103.6	0.9	0.27	0.0	0.00	0.58	0.15	3.9	2.8	3.1	3.0	0.15
25	13.21	32.764	24.621	6.15	102.8	0.9	0.31	0.1	0.00	0.38	0.11	1.4	0.73	0.69	0.71	0.11
34	13.18	32.843	24.688	6.10	101.9	1.3	0.33	0.1	0.00	0.26	0.09	0.30	0.03	0.03	0.03	0.08

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 70 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
35 53.3 N	122 23.0 W	20/ 4/98	1824 UTC	11 m	04	1208 - 1912 PST	1208 PST	1912 PST	231.5 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	12.98	32.384	24.372	6.41	106.4	0.5	0.21	0.0	0.00	1.07	0.39	76. A	6.6	9.2	7.9	0.20
9	12.97	32.384	24.374	6.42	106.5	0.5	0.21	0.0	0.00	1.04	0.35	28.	10.8	10.3	10.6	0.21
17	12.97	32.383	24.373	6.43	106.7	0.5	0.21	0.0	0.00	0.95	0.32	9.3	8.3	10.7	9.5	0.25
24	12.96	32.397	24.386	6.41	106.3	0.5	0.21	0.0	0.00	1.07	0.49	3.5	4.2	4.3	4.2	0.19
30	12.97	32.753	24.660	6.18	102.8	1.1	0.30	0.0	0.00	0.50	0.19	1.5	1.2	1.0	1.1	0.12
41	13.00	32.847	24.727	6.01	100.1	1.5	0.34	0.0	0.01	0.49	0.23	0.33	0.12	0.12	0.12	0.06

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 73 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
35 28.6 N	121 36.4 W	18/ 4/98	1843 UTC	12 m	05	1205 - 1908 PST	1205 PST	1908 PST	701.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	12.63	32.883	24.826	6.16	101.8	1.7	0.36	0.5	0.10	3.28	1.01	77. A	33.9	30.9	32.4	0.28
9	12.62	32.883	24.828	6.16	101.8	1.7	0.36	0.6	0.10	3.06	1.15	32.	43.6	43.3	43.4	0.31
17	12.57	32.927	24.872	5.85	96.6	2.6	0.44	1.6	0.15	1.68	0.74	11.	20.4	18.1	19.3	0.16
26	12.41	33.016	24.972	5.51	90.7	4.2	0.58	3.6	0.15	0.49	0.36	3.6	3.0	3.4	3.2	0.07
32	12.02	33.267	25.241	4.96	81.1	7.8	0.83	7.9	0.06	0.43	0.31	1.7	0.95	0.94	0.94	0.06
39	11.84	33.316	25.313	4.78	77.9	9.1	0.95	9.5	0.06	0.43	0.31					
46	11.77	33.420	25.407	4.53	73.7	10.4	1.04	11.3	0.05	0.40	0.37	0.28	0.09	0.11	0.10	0.04

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 73 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 39.7 N	123 23.3 W	19/ 4/98	1802 UTC	18 m	01	1210 - 1918 PST	1212 PST	1918 PST	110.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.33	33.199	24.727	5.94	101.9	2.0	0.32	0.0	0.00	0.20	0.05	84. A	2.2	2.1	2.1	0.07
14	14.32	33.202	24.732	5.95	102.0	2.0	0.32	0.0	0.00	0.20	0.05	30.	3.6	3.7	3.7	0.07
27	14.31	33.198	24.732	5.94	101.8	2.0	0.32	0.0	0.00	0.21	0.05	10.	2.5	2.5	2.5	0.07
39	14.32	33.199	24.731	5.94	101.9	1.9	0.32	0.0	0.00	0.20	0.05	3.6	1.1	1.2	1.1	0.07
50	14.32	33.197	24.729	5.95	102.0	1.9	0.32	0.0	0.00	0.19	0.05	1.4	0.16	0.16	0.16	0.07
59	14.21	33.214	24.766	5.91	101.1	2.0	0.33	0.0	0.01	0.41	0.20					
70	13.94	33.250	24.850	5.74	97.7	2.9	0.39	0.6	0.10	0.75	0.42	0.26	0.15	0.15	0.15	0.04

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 43.2 N	121 32.8 W	17/ 4/98	1930 UTC	17 m	03	1216 - 1904 PST	1206 PST	1904 PST	201.2 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	13.85	32.870	24.573	6.10	103.4	1.1	0.28	0.0	0.00	0.33	0.12	83. A	5.0	3.5	4.2	0.10
12	13.84	32.870	24.575	6.09	103.2	1.1	0.28	0.0	0.00	0.34	0.12	34.	6.2	5.7	6.0	0.09
24	13.75	32.883	24.604	6.10	103.2	1.1	0.28	0.0	0.00	0.37	0.14	11.	5.0	4.6	4.8	0.09
36	13.73	32.898	24.620	6.10	103.1	1.1	0.27	0.0	0.00	0.44	0.17	3.9	2.7	3.2	2.9	0.12
47	13.75	32.914	24.629	6.09	103.0	1.1	0.28	0.0	0.00	0.46	0.18	1.4	1.0	0.93	0.97	0.10
56	14.20	33.114	24.691	5.92	101.2	1.6	0.30	0.0	0.00	0.53	0.19					
64	14.10	33.173	24.757	5.86	100.0	2.2	0.34	0.1	0.02	0.69	0.32	0.31	0.15	0.14	0.15	0.07

A) INCUBATION LIGHT INTENSITIES WERE 94, 32, 11, 3.8, 1.5, 0.28 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 23.2 N	124 19.9 W	16/ 4/98	1858 UTC	28 m	01	1217 - 1911 PST	1217 PST	1911 PST	81.9 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	15.22	33.424	24.710	5.81	101.6	2.4	0.25	0.0	0.00	0.09	0.02	95. A	1.1	1.1	1.1	0.06
21	15.20	33.430	24.720	5.81	101.6	2.4	0.24	0.0	0.00	0.09	0.02	32.	1.7	1.7	1.7	0.07
30	15.21	33.435	24.722	5.80	101.4	2.4	0.23	0.0	0.00	0.09	0.02					
40	15.22	33.438	24.722	5.81	101.6	2.4	0.23	0.0	0.00	0.10	0.02	11.	1.1	1.0	1.1	0.08
49	15.24	33.451	24.728	5.79	101.3	2.4	0.23	0.0	0.00	0.10	0.02					
60	15.37	33.503	24.740	5.77	101.2	2.4	0.23	0.0	0.00	0.12	0.03	3.7	0.51	0.56	0.53	0.09
68	15.35	33.500	24.742	5.78	101.4	2.4	0.23	0.0	0.00	0.12	0.04					
76	15.36	33.501	24.741	5.78	101.4	2.4	0.23	0.0	0.00	0.14	0.04	1.6	0.22	0.22	0.22	0.07
87	15.37	33.503	24.741	5.77	101.2	2.4	0.23	0.0	0.00	0.15	0.05					
97	15.40	33.514	24.743	5.76	101.1	2.4	0.22	0.0	0.00	0.18	0.06					
106	15.49	33.557	24.756	5.73	100.8	2.4	0.22	0.0	0.00	0.28	0.11	0.30	0.04	0.04	0.04	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 48.8 N	121 51.0 W	15/ 4/98	1834 UTC	19 m	03	1207 - 1904 PST	1207 PST	1904 PST	275.7 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	14.23	33.094	24.667	5.99	102.5	1.9	0.30	0.0	0.00	0.32	0.09	85. A	3.1	3.0	3.0	0.11
15	14.18	33.096	24.680	5.99	102.4	1.9	0.30	0.0	0.00	0.32	0.10	30.	6.2	6.2	6.2	0.12
27	14.19	33.109	24.688	5.98	102.2	1.9	0.30	0.0	0.00	0.34	0.09	11.	4.9	4.9	4.9	0.12
41	14.18	33.106	24.688	5.98	102.2	1.9	0.30	0.0	0.00	0.41	0.13	3.6	3.0	3.2	3.1	0.10
46	14.36	33.221	24.740	5.87	100.7	1.8	0.31	0.0	0.03	0.85	0.38					
53	14.23	33.279	24.812	5.82	99.7	2.2	0.35	0.2	0.15	1.13	0.60	1.4	4.3	4.3	4.3	0.06
61	14.01	33.315	24.885	5.65	96.3	2.7	0.41	1.1	0.30	0.80	0.58					
72	13.70	33.437	25.044	5.24	88.8	4.7	0.58	4.0	0.11	0.44	0.44	0.30	0.22	0.22	0.22	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 13.8 N	119 24.7 W	14/ 4/98	1830 UTC	12 m	05	1158 - 1857 PST	1158 PST	1857 PST	1510.1 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	12.73	33.625	25.382	5.34	88.8	8.4	0.89	8.2	0.18	3.57	0.82	88. A	51.3	52.4	51.9	0.31
5	12.66	33.634	25.402	5.32	88.4	8.3	0.88	8.3	0.17	3.64	0.82					
9	12.48	33.625	25.430	5.19	85.9	9.0	0.93	8.8	0.17	4.13	0.94	32.	78.2	72.0	75.1	0.29
17	12.39	33.632	25.453	5.01	82.8	9.7	0.99	9.7	0.17	3.35	0.86	11.	65.7	65.8	65.7	0.17
26	12.30	33.667	25.498	4.68	77.2	12.2	1.20	12.4	0.14	2.92	0.82	3.6	20.0	20.7	20.3	0.14

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 14.5 N	121 26.4 W	13/ 4/98	1823 UTC	32 m	02	1207 - 1857 PST	1207 PST	1857 PST	215.6 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	14.59	33.219	24.688	5.87	101.2	2.1	0.30	0.0	0.00	0.22	0.06	91. A	2.4	2.4	2.4	0.06
13	14.58	33.217	24.689	5.89	101.6	2.0	0.30	0.0	0.00	0.22	0.06					
23	14.57	33.218	24.692	5.88	101.4	2.0	0.30	0.0	0.00	0.21	0.06	33.	3.3	3.2	3.2	0.07
34	14.57	33.218	24.692	5.89	101.5	2.0	0.30	0.0	0.00	0.22	0.06					
46	14.57	33.219	24.694	5.88	101.4	1.9	0.30	0.0	0.00	0.22	0.06	11.	2.5	2.4	2.4	0.07
57	14.57	33.221	24.695	5.88	101.3	1.9	0.30	0.0	0.00	0.23	0.06					
68	14.57	33.217	24.693	5.87	101.2	1.9	0.30	0.0	0.00	0.23	0.06	3.8	1.1	1.2	1.1	0.06
77	14.56	33.220	24.697	5.87	101.1	1.8	0.30	0.0	0.01	0.27	0.10					
88	14.38	33.284	24.785	5.75	98.8	2.5	0.33	0.3	0.15	0.56	0.35	1.5	1.4	1.4	1.4	0.03
96	14.03	33.365	24.921	5.46	93.1	3.8	0.46	2.4	0.06	0.34	0.31					
103	13.71	33.384	25.002	5.33	90.3	4.5	0.55	3.8	0.03	0.26	0.24					
112	12.76	33.437	25.233	4.96	82.5	7.0	0.77	7.2	0.03	0.18	0.18					
122	11.79	33.496	25.464	4.57	74.5	10.4	1.02	11.0	0.02	0.09	0.11	0.29	0.02	0.01	0.02	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 14.7 N	123 29.2 W	12/ 4/98	1850 UTC	29 m	01	1215 - 1902 PST	1215 PST	1902 PST	154.0 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	15.25	33.383	24.672	5.81	101.6	2.3	0.28	0.1	0.00	0.16	0.03	90. A	1.3	1.3	1.3	0.07
11	15.22	33.382	24.678	5.81	101.6	2.3	0.28	0.1	0.00	0.16	0.04					
21	15.23	33.381	24.675	5.82	101.8	2.3	0.28	0.1	0.00	0.16	0.04	33.	2.5	2.5	2.5	0.07
31	15.22	33.385	24.681	5.81	101.6	2.3	0.28	0.1	0.00	0.16	0.04					
40	15.21	33.380	24.680	5.82	101.7	2.3	0.28	0.1	0.00	0.17	0.04	12.	2.0	1.8	1.9	0.08
52	15.21	33.385	24.684	5.81	101.5	2.3	0.28	0.1	0.00	0.17	0.04					
61	15.20	33.380	24.682	5.81	101.5	2.3	0.27	0.1	0.00	0.19	0.06	4.0	0.96	1.1	1.0	0.07
68	15.17	33.380	24.689	5.81	101.5	2.3	0.29	0.1	0.00	0.23	0.09					
79	15.06	33.388	24.720	5.77	100.5	2.3	0.28	0.1	0.01	0.40	0.22	1.5	1.3	1.4	1.3	0.03
89	14.90	33.412	24.773	5.68	98.7	2.8	0.33	0.6	0.04	0.43	0.25					
101	13.77	33.426	25.022	5.37	91.2	4.4	0.50	3.0	0.14	0.36	0.31					
111	12.32	33.440	25.320	4.81	79.2	8.4	0.89	8.9	0.05	0.24	0.30	0.28	0.10	0.11	0.10	0.01

A) INCUBATION LIGHT INTENSITIES WERE 94, 32, 11, 3.8, 1.5, 0.28 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 49.4 N	118 37.7 W	9/ 4/98	1848 UTC	10 m	03	1157 - 1847 PST	1157 PST	1847 PST	2108.3 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	14.98	33.645	24.933	5.79	100.9	3.9	0.55	2.7	0.21	4.65	1.08	86. A	110.8	96.6	103.7	0.34
7	14.65	33.636	24.997	5.80	100.4	4.0	0.57	2.7	0.22	5.21	1.14	34.	123.1	121.1	122.1	0.60
14	14.49	33.634	25.030	5.66	97.7	4.4	0.60	3.1	0.22	6.41	1.42	12.	97.9	89.7	93.8	0.29
20	14.38	33.635	25.054	5.31	91.4	5.2	0.67	4.7	0.26	5.20	1.43	4.6	30.8	36.9	33.9	0.14
27	14.27	33.637	25.079	5.07	87.1	6.0	0.76	5.8	0.29	3.84	1.50	1.6	8.0	6.6	7.3	0.13
39	13.29	33.667	25.304	3.94	66.3	11.0	1.16	11.5	0.19	0.62	0.74	0.25	0.05	0.08	0.07	0.13

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 0.0 N	120 21.8 W	10/ 4/98	1836 UTC	36 m	01	1202 - 1856 PST	1202 PST	1856 PST	268.7 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	15.26	33.402D	24.684	5.80	101.5	1.8	0.28	0.0	0.00	0.17	0.05	96. A	2.2	2.2	2.2	0.08
15	15.18	33.401	24.701	5.83	101.9	1.8	0.28	0.0	0.00	0.19	0.05					
26	15.10	33.380	24.703	5.83	101.7	1.9	0.28	0.0	0.00	0.29	0.08	33.	3.6	3.6	3.6	0.12
38	14.97	33.356	24.713	5.84	101.6	1.9	0.29	0.0	0.00	0.28	0.09					
51	14.89	33.338	24.717	5.85	101.6	1.9	0.29	0.0	0.00	0.25	0.07	11.	2.8	2.7	2.8	0.13
60	14.89	33.335	24.715	5.86	101.7	2.0	0.29	0.0	0.00	0.28	0.08					
69	14.88	33.338	24.720	5.83	101.2	2.0	0.29	0.0	0.00	0.34	0.12					
76	14.88	33.336	24.719	5.83	101.2	2.0	0.29	0.0	0.01	0.40	0.12	3.9	2.2	2.3	2.2	0.04
87	14.83	33.343	24.735	5.61	97.3	2.2	0.26	0.0	0.02	0.33	0.15					
97	14.29	33.371	24.872	5.56	95.4	3.3	0.39	1.5	0.14	0.33	0.23	1.6	0.87	0.91	0.89	0.05
108	13.25	33.457	25.151	5.19	87.2	5.7	0.61	5.2	0.03	0.19	0.23					
117	12.45	33.476	25.323	5.07	83.8	7.1	0.71	6.9	0.03	0.15	0.19					
127	11.52	33.514	25.528	4.80	77.8	9.9	0.91	10.1	0.02	0.11	0.14					
138	10.90	33.547	25.665	4.39	70.2	13.5	1.19	14.0	0.01	0.09	0.10	0.28	0.03	0.05	0.04	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 39.5 N	123 4.2 W	11/ 4/98	1938 UTC	29 m	01	1232 - 1905 PST	1213 PST	1905 PST	60.0 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	15.51	33.409	24.635	5.77	101.5	1.8	0.28	0.0	0.00	0.08	0.02	85. A	0.02	0.02	0.02	0.03
10	15.49	33.408	24.639	5.78	101.6	1.8	0.23	0.0	0.00	0.10	0.01					
21	15.50	33.409	24.637	5.77	101.5	1.8	0.24	0.0	0.00	0.09	0.01	33.	1.1	1.4	1.2	0.05
31	15.48	33.411	24.644	5.78	101.6	1.8	0.24	0.0	0.00	0.09	0.02					
40	15.48	33.409	24.643	5.78	101.6	1.8	0.24	0.0	0.00	0.09	0.02	12.	1.3	1.3	1.3	0.04
52	15.47	33.410	24.646	5.77	101.4	1.9	0.23	0.0	0.00	0.09	0.02					
61	15.45	33.414	24.654	5.79	101.7	1.9	0.24	0.0	0.00	0.11	0.02	4.0	0.39	0.43	0.41	0.05
70	15.41	33.437	24.681	5.80	101.8	1.9	0.23	0.0	0.00	0.13	0.04					
78	15.44	33.477	24.705	5.76	101.2	1.9	0.22	0.0	0.00	0.18	0.06	1.6	0.12	0.12	0.12	0.05
89	15.58	33.561	24.739	5.69	100.3	2.0	0.21	0.0	0.00	0.28	0.15					
100	15.14	33.624	24.885	5.51	96.3	2.8	0.28	0.8	0.08	0.41	0.29					
110	14.68	33.641	24.998	5.40	93.5	3.5	0.37	1.8	0.10	0.37	0.23	0.30	0.10	0.00	0.05	0.05

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 5.0 N	120 37.8 W	7/ 4/98	1858 UTC	33 m	01	1205 - 1850 PST	1205 PST	1850 PST	112.3 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
2	15.58	33.466	24.663	5.75	101.3	2.4	0.27	0.1	0.00	0.09	0.02	91. A	1.2	1.2	1.2	0.05
12	15.58	33.457	24.656	5.75	101.3	2.4	0.27	0.1	0.00	0.09	0.02					
25	15.57	33.456	24.658	5.75	101.3	2.3	0.28	0.1	0.00	0.10	0.01	31.	1.8	1.8	1.8	0.07
37	15.62	33.478	24.665	5.74	101.2	2.3	0.27	0.1	0.00	0.10	0.02					
47	15.69	33.497	24.664	5.74	101.4	2.3	0.26	0.1	0.00	0.10	0.02	11.	1.3	1.2	1.2	0.08
58	15.89	33.575	24.679	5.68	100.7	2.2	0.24	0.1	0.00	0.12	0.03					
70	15.93	33.592	24.684	5.68	100.8	2.2	0.23	0.1	0.00	0.15	0.05	3.9	0.67	0.70	0.69	0.08
78	15.92	33.586	24.682	5.69	101.0	2.2	0.24	0.0	0.00	0.15	0.04					
89	15.90	33.589	24.689	5.68	100.8	2.1	0.23	0.0	0.00	0.20	0.06	1.6	0.44	0.43	0.44	0.07
98	15.88	33.593	24.697	5.67	100.6	2.1	0.23	0.0	0.00	0.27	0.13					
108	15.25	33.606	24.847	5.53	96.8	3.0	0.31	0.7	0.06	0.47	0.38					
116	14.18	33.537	25.023	5.38	92.2	4.2	0.46	2.7	0.11	0.35	0.33					
125	13.30	33.498	25.174	5.23	88.0	5.5	0.64	4.7	0.06	0.26	0.37	0.30	0.11	0.11	0.11	0.02

A) INCUBATION LIGHT INTENSITIES WERE 94, 32, 11, 3.8, 1.5, 0.28 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 46.1 N	123 20.9 W	6/ 4/98	1852 UTC	45 m	01	1215 - 1857 PST	1215 PST	1857 PST	137.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	16.48	33.679	24.623	5.63	101.1	1.9	0.23	0.0	0.00	0.07	0.01	93. A	0.85	0.86	0.85	0.05
19	16.47	33.684	24.630	5.64	101.3	1.9	0.23	0.0	0.00	0.07	0.01					
34	16.42	33.679	24.638	5.65	101.3	1.9	0.23	0.0	0.00	0.07	0.01	31.	1.1	1.2	1.2	0.08
48	16.36	33.663	24.640	5.64	101.0	2.0	0.22	0.0	0.00	0.07	0.01					
64	16.28	33.653	24.651	5.66	101.2	2.0	0.22	0.0	0.00	0.09	0.02	11.	0.99	0.96	0.98	0.08
80	16.09	33.610	24.662	5.66	100.8	1.9	0.23	0.0	0.00	0.09	0.04					
96	16.07	33.606	24.664	5.68	101.1	2.1	0.23	0.0	0.00	0.14	0.04	3.8	0.64	0.72	0.68	0.05
105	16.10	33.621	24.669	5.67	101.0	2.0	0.22	0.0	0.00	0.16	0.04					
114	15.99	33.621	24.694	5.67	100.8	2.0	0.22	0.0	0.00	0.27	0.17					
123	16.24	33.724	24.717	5.60	100.1	2.0	0.21	0.0	0.01	0.26	0.11	1.5	0.88	0.88	0.88	0.03
135	15.68	33.747	24.862	5.48	96.9	2.6	0.27	0.7	0.07	0.28	0.24					
148	14.35	33.622	25.054	5.27	90.6	4.1	0.48	2.9	0.06	0.21	0.22					
160	12.73	33.584	25.354	5.16	85.8	5.5	0.61	4.8	0.04	0.16	0.18					
172	11.75	33.473	25.455	4.82	78.4	9.3	0.95	9.7	0.02	0.12	0.13	0.28	0.06	0.06	0.06	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 20.8 N	118 33.1 W	3/ 4/98	1846 UTC	21 m	02	1159 - 1842 PST	1157 PST	1841 PST	605.7 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	15.22	33.403	24.694	5.96	104.2	2.2	0.30	0.0	0.00	0.30	0.17	93. A	9.1	9.2	9.1	0.19
8	15.13	33.412	24.721	5.95	103.9	2.2	0.30	0.0	0.00	0.30	0.18					
16	14.72	33.391	24.793	5.95	103.0	2.3	0.31	0.0	0.01	0.61	0.44	31.	16.8	13.5	15.2	0.22
22	14.71	33.397	24.800	5.88	101.8	2.3	0.31	0.0	0.03	0.75	0.49					
30	14.76	33.429	24.814	5.91	102.4	2.3	0.31	0.0	0.02	0.96	0.76	11.	12.6	13.2	12.9	0.17
38	14.77	33.438	24.819	5.90	102.2	2.3	0.31	0.0	0.02	0.88	0.64					
45	14.79	33.457	24.830	5.90	102.3	2.3	0.31	0.0	0.02	0.88	0.58	3.7	5.9	5.7	5.8	0.13
58	14.81	33.466	24.833	5.86	101.6	2.3	0.32	0.0	0.03	0.89	0.59	1.4	2.4	2.1	2.2	0.11
68	14.82	33.489	24.849	5.85	101.5	2.3	0.33	0.0	0.04	0.85	0.70					
80	14.71	33.505	24.885	5.72	99.0	2.7	0.37	0.4	0.10	0.61	0.44	0.29	0.11	0.10	0.11	0.08

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 30.8 N	120 15.1 W	4/ 4/98	1836 UTC	34 m	01	1204 - 1850 PST	1204 PST	1850 PST	135.1 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	15.99	33.535	24.624	5.68	100.9	2.1	0.26	0.0	0.00	0.10	0.03	91. A	0.97	1.1	1.0	0.01
14	15.95	33.535	24.634	5.69	101.0	2.1	0.26	0.0	0.00	0.11	0.03					
25	15.93	33.535	24.638	5.68	100.8	2.1	0.26	0.0	0.00	0.11	0.03	32.	1.8	1.8	1.8	0.08
36	15.92	33.533	24.640	5.69	101.0	2.1	0.25	0.0	0.00	0.12	0.03					
47	15.90	33.528	24.641	5.69	100.9	2.1	0.25	0.0	0.00	0.12	0.03	12.	1.5	1.4	1.5	0.08
59	15.89	33.525	24.641	5.69	100.9	2.1	0.25	0.0	0.00	0.13	0.03					
72	15.85	33.516	24.644	5.70	101.0	2.1	0.26	0.0	0.00	0.14	0.04	3.9	0.88	0.87	0.88	0.06
83	15.73	33.492	24.652	5.71	100.9	2.1	0.26	0.0	0.00	0.23	0.07					
93	15.66	33.477	24.657	5.71	100.7	2.1	0.27	0.0	0.00	0.27	0.09	1.5	0.84	0.86	0.85	0.02
100	15.64	33.473	24.658	5.70	100.5	2.0	0.27	0.0	0.00	0.26	0.10					
112	14.88	33.470	24.823	5.52	95.9	2.9	0.38	1.2	0.12	0.35	0.34					
119	13.97	33.443	24.995	5.32	90.7	4.4	0.54	3.4	0.07	0.22	0.25					
131	12.80	33.454	25.239	4.84	80.5	7.7	0.85	8.0	0.01	0.06	0.08	0.27	0.03	0.03	0.03	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 9804 — STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 10.7 N	122 55.5 W	5/ 4/98	1848 UTC	46 m	01	1215 - 1859 PST	1215 PST	1859 PST	216.9 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	16.84	33.656	24.521	5.60	101.3	2.1	0.25	0.0	0.00	0.07	0.02	97. A	0.58	0.60	0.59	0.05
19	16.84	33.663	24.527	5.59	101.1	2.1	0.24	0.0	0.00	0.08	0.02					
34	16.84	33.664	24.529	5.60	101.3	2.1	0.24	0.0	0.00	0.08	0.02	32.	1.1	1.2	1.2	0.06
49	16.83	33.666	24.533	5.60	101.2	2.0	0.24	0.0	0.00	0.09	0.02					
65	16.82	33.664	24.535	5.60	101.2	2.1	0.24	0.0	0.00	0.11	0.03	11.	1.4		1.4	0.04
81	16.79	33.655	24.535	5.60	101.1	2.1	0.24	0.0	0.00	0.13	0.04					
98	16.34	33.606	24.603	5.63	100.8	2.2	0.25	0.0	0.00	0.25	0.12	3.8	1.8		1.8	0.03
107	16.38	33.627	24.610	5.63	100.9	2.2	0.24	0.0	0.00	0.17	0.05					
115	16.28	33.623	24.630	5.62	100.5	2.1	0.24	0.0	0.00	0.23	0.10					
125	14.44	33.442	24.896	5.45	93.8	3.5	0.45	1.6	0.08	0.35	0.36	1.5	1.7		1.7	0.01
138	13.12	33.445	25.169	5.09	85.2	5.8	0.70	5.3	0.06	0.28	0.32					
151	12.16	33.506	25.403	4.78	78.5	8.0	0.87	8.3	0.03	0.17	0.21					
164	11.45	33.543	25.564	4.59	74.2	10.9	1.05	11.4	0.01	0.10	0.14					
179	10.65	33.641	25.783	4.08	64.9	15.7	1.33	16.0	0.01	0.04	0.05	0.25	0.03	0.02	0.02	0.01

A) INCUBATION LIGHT INTENSITIES WERE 94, 32, 11, 3.8, 1.5, 0.28 PERCENT RESPECTIVELY.

CalCOFI Cruise 9804

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)
67	49	36 49.2	121 59.2	04/21	0222	0244	445	210	135	135
67	50	36 47.7	122 02.9	04/21	0417	0432	314	144	258	258
67	55	36 37.2	122 25.3	04/21	0752	0813	406	213	25	25
67	60	36 26.8	122 45.8	04/21	1229	1250	442	209	27	27
67	65	36 17.1	123 08.8	04/21	1701	1722	439	216	20	20
67	70	36 08.0	123 29.3	04/21	2031	2053	443	213	27	27
67	80	35 46.5	124 11.9	04/22	0157	0219	441	211	36	36
70	51	36 11.3	121 44.5	04/20	1926	1934	177	77	68	68
70	55	36 02.2	122 00.8	04/20	1433	1454	481	203	25	25
70	60	35 52.8	122 22.2	04/20	0839	0901	453	210	22	22
70	65	35 43.1	122 43.5	04/20	0518	0540	464	213	47	47
70	70	35 32.8	123 05.6	04/20	0040	0102	485	204	23	23
70	80	35 13.9	123 47.6	04/19	1825	1847	485	197	21	21
73	50	35 37.5	121 17.1	04/18	0805	0813	152	71	40	40
73	55	35 28.8	121 36.1	04/18	1246	1308	440	211	43	43
73	60	35 18.3	121 59.0	04/18	1712	1734	427	218	28	28
73	65	35 08.5	122 19.5	04/18	2121	2142	488	196	31	31
73	70	34 58.9	122 40.5	04/19	0117	0139	497	199	18	18
73	80	34 38.6	123 22.4	04/19	0821	0842	444	213	20	20
77	49	35 04.9	120 46.4	04/18	0201	0210	147	59	95	95
77	51	35 00.7	120 55.6	04/17	2156	2217	410	203	51	51
77	55	34 51.9	121 10.3	04/17	1831	1852	455	213	31	31
77	60	34 42.6	121 33.3	04/17	1320	1340	451	199	16	16
77	70	34 23.6	122 15.1	04/17	0627	0648	436	209	11	11
77	80	34 02.5	122 56.5	04/17	0026	0048	466	202	30	30
77	90	33 41.9	123 37.6	04/16	1829	1850	431	213	9	9
77	100	33 23.5	124 20.4	04/16	1158	1220	448	206	11	11
80	51	34 27.3	120 31.7	04/14	2054	2100	140	63	136	136
80	55	34 18.6	120 48.3	04/15	0002	0024	431	206	91	91
80	60	34 09.1	121 08.6	04/15	0353	0415	423	212	28	28
80	70	33 48.6	121 51.3	04/15	0843	0905	440	213	30	30
80	80	33 27.4	122 30.1	04/15	1730	1751	421	213	17	17
80	90	33 09.8	123 13.3	04/15	2318	2340	441	215	25	25
80	100	32 49.4	123 54.6	04/16	0504	0526	436	215	21	21
82	47	34 17.0	120 00.9	04/14	1641	1702	415	214	41	41
83	40.6	34 13.2	119 25.2	04/14	0926	0929	72	27	28	28
83	42	34 10.4	119 30.2	04/14	0704	0719	278	142	65	65
83	51	33 53.0	120 09.3	04/14	0022	0030	164	76	79	79
83	55	33 44.4	120 25.2	04/13	2109	2130	413	215	65	65
83	60	33 32.9	120 44.5	04/13	1710	1731	438	217	27	27
83	70	33 14.5	121 26.9	04/13	0834	0856	429	216	21	21
83	80	32 54.2	122 07.5	04/13	0131	0152	436	207	21	21
83	90	32 33.7	122 48.2	04/12	1931	1953	476	213	13	13
83	100	32 15.2	123 30.0	04/12	1249	1310	449	202	7	7
83	110	31 55.4	124 09.8	04/12	0541	0603	456	217	4	4
87	33	33 53.6	118 29.4	04/09	0809	0813	78	33	51	51
87	35	33 49.7	118 37.0	04/09	0947	1009	413	214	46	46
87	40	33 39.1	118 58.0	04/09	1611	1632	415	212	43	43
87	45	33 29.1	119 19.0	04/09	1958	2020	447	205	49	49
87	50	33 19.3	119 40.3	04/09	2328	2335	132	66	30	30
87	55	33 08.9	120 00.0	04/10	0256	0318	445	213	20	20
87	60	32 59.4	120 21.6	04/10	0845	0907	414	217	14	14
87	70	32 39.1	121 02.2	04/10	1717	1739	424	216	17	17
87	80	32 18.5	121 42.9	04/10	2250	2311	443	214	16	16
87	90	31 59.4	122 23.1	04/11	0443	0505	479	208	10	10
87	110	31 20.8	123 44.1	04/11	2050	2112	451	220	4	4

CalCOFI Cruise 9804

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)
90	28	33 29.2	117 46.2	04/08	2336	2341	102	38	59	59
90	30	33 25.0	117 54.1	04/09	0159	0221	421	203	36	36
90	35	33 14.9	118 15.0	04/08	1719	1741	422	212	26	26
90	37	33 10.5	118 21.6	04/08	1456	1517	426	206	35	35
90	45	32 55.4	118 56.2	04/08	0627	0649	425	213	61	38
90	53	32 39.1	119 29.0	04/08	0111	0132	476	207	25	25
90	60	32 25.7	119 58.0	04/07	1949	2010	471	214	15	15
90	70	32 04.7	120 39.5	04/07	1314	1336	470	210	6	6
90	80	31 45.5	121 18.8	04/07	0553	0614	449	212	7	7
90	90	31 25.5	121 59.5	04/07	0016	0038	476	209	13	13
90	100	31 04.6	122 39.2	04/06	1818	1839	474	213	13	13
90	110	30 44.8	123 20.5	04/06	0905	0926	448	216	9	9
90	120	30 24.8	124 00.0	04/06	0058	0120	451	211	38	27
93	26.7	32 57.4	117 18.2	04/02	1604	1613	189	84	90	90
93	28	32 54.3	117 23.3	04/02	1946	2008	431	212	44	44
93	30	32 50.6	117 32.7	04/02	2306	2327	425	212	33	33
93	35	32 41.6	117 52.9	04/03	0322	0344	438	216	30	30
93	40	32 31.0	118 13.6	04/03	0741	0802	391	215	56	56
93	45	32 20.1	118 32.7	04/03	1321	1343	433	212	42	42
93	50	32 11.6	118 53.5	04/03	1854	1916	425	213	33	33
93	55	32 00.6	119 15.2	04/03	2315	2337	436	217	32	32
93	60	31 50.4	119 35.0	04/04	0255	0316	438	213	25	25
93	70	31 31.1	120 14.4	04/04	1155	1217	488	214	10	10
93	80	31 11.1	120 55.0	04/04	1827	1848	445	211	9	9
93	90	30 51.0	121 36.4	04/05	0023	0045	455	210	24	24
93	100	30 31.2	122 16.2	04/05	0554	0615	445	213	13	13
93	110	30 10.9	122 56.2	04/05	1239	1301	446	211	9	9
93	120	29 50.1	123 34.8	04/05	1905	1927	426	212	12	12

FIGURES

Cruise 9805

1. CalCOFI Cruise 9805, 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.

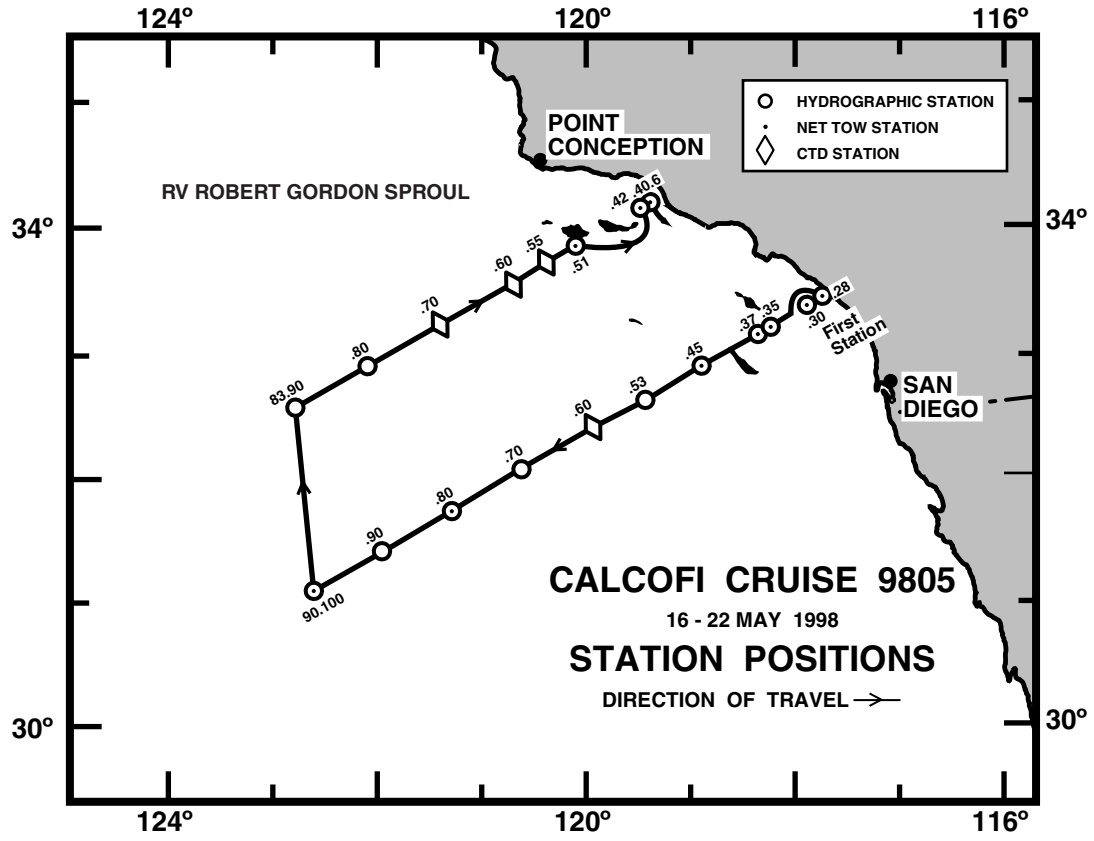


FIGURE 1

CALCOFI CRUISE 9805

16 - 19 MAY 1998

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

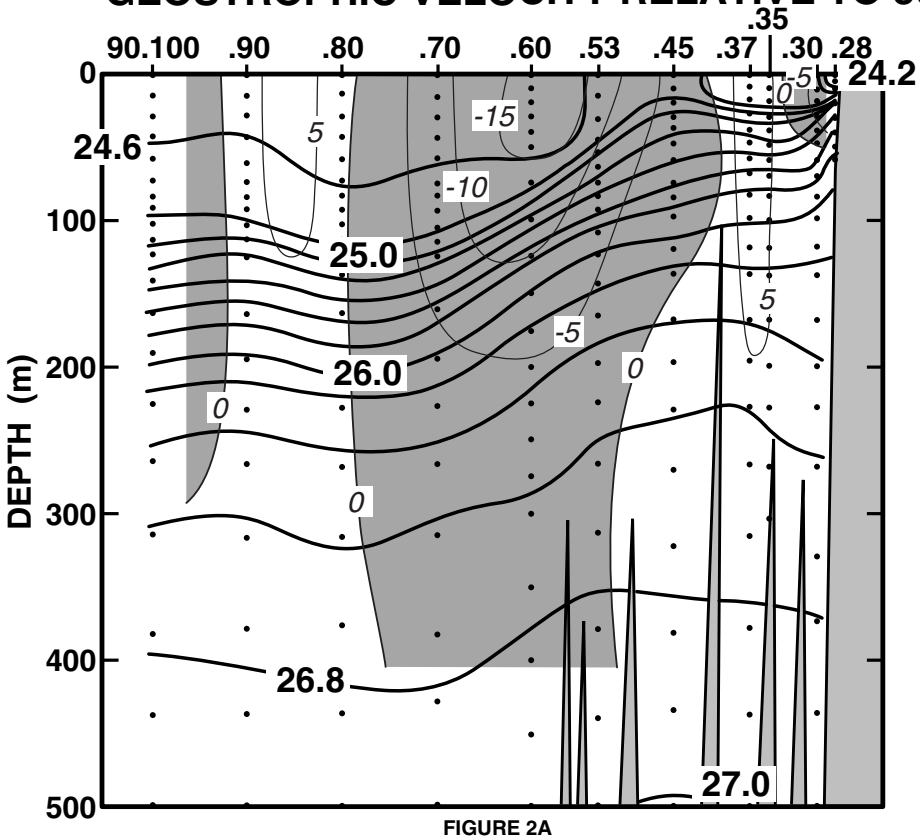


FIGURE 2A

CALCOFI CRUISE 9805

MAY 16 - 19 1998

TEMPERATURE (ºC) ALONG CALCOFI LINE 90

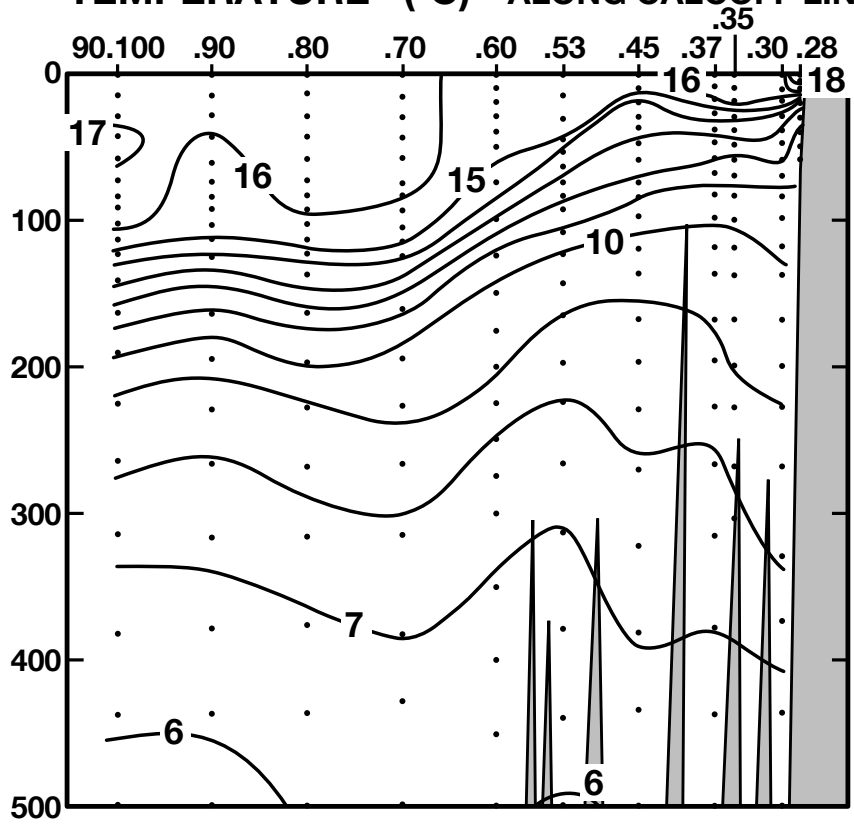


FIGURE 2B

SALINITY ALONG CALCOFI LINE 90

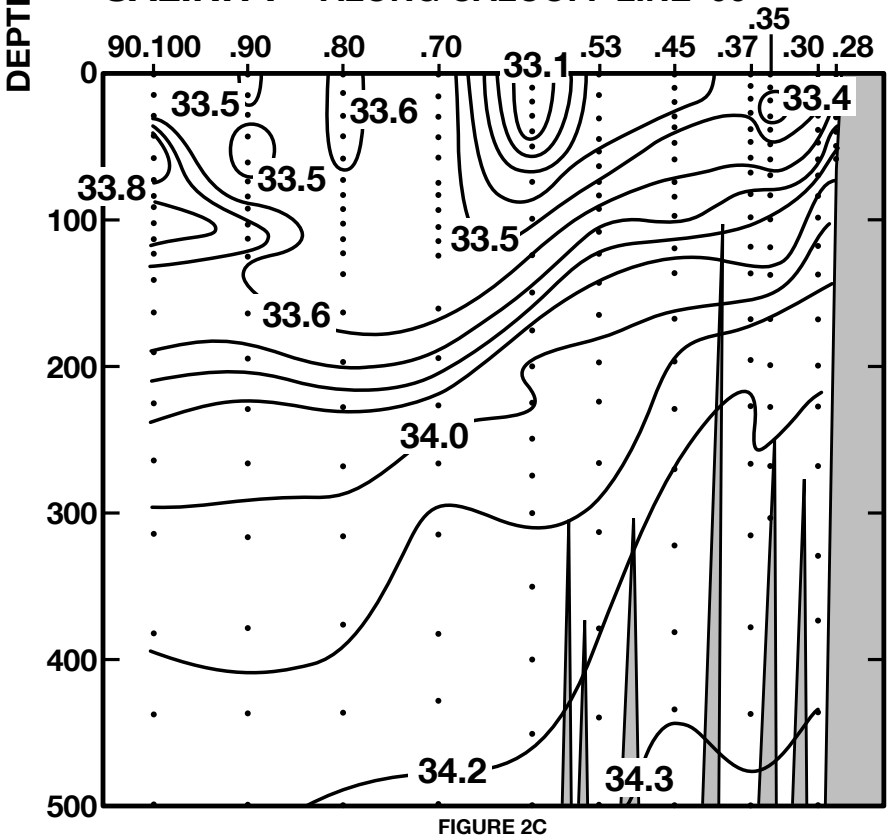


FIGURE 2C

CALCOFI CRUISE 9805

MAY 16 - 19 1998

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

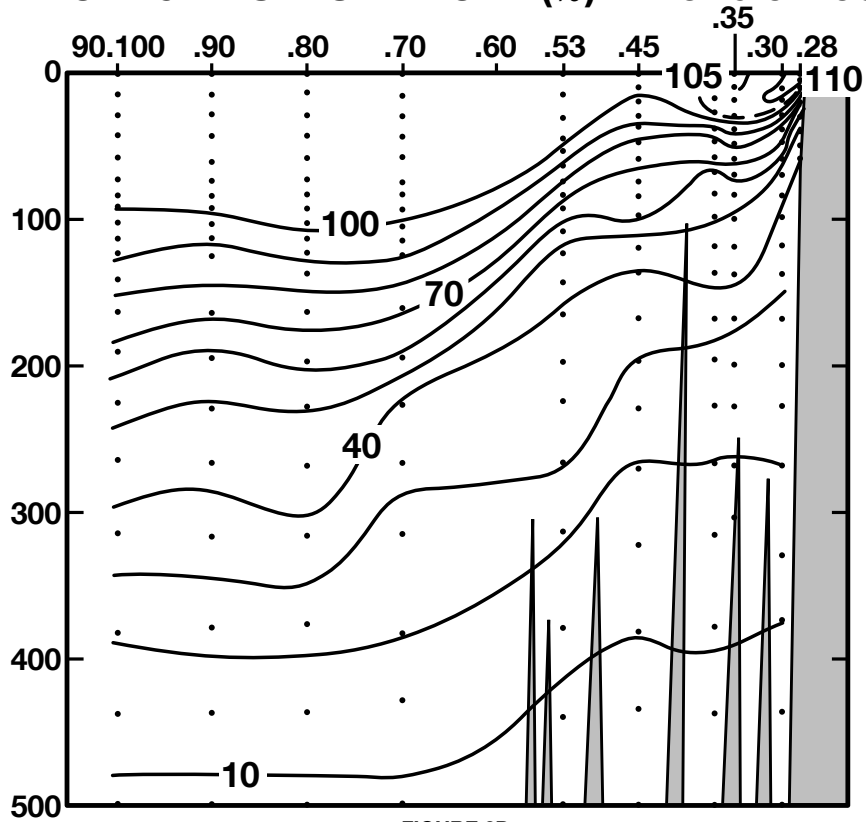


FIGURE 2D

OXYGEN (ml/l) ALONG CALCOFI LINE 90

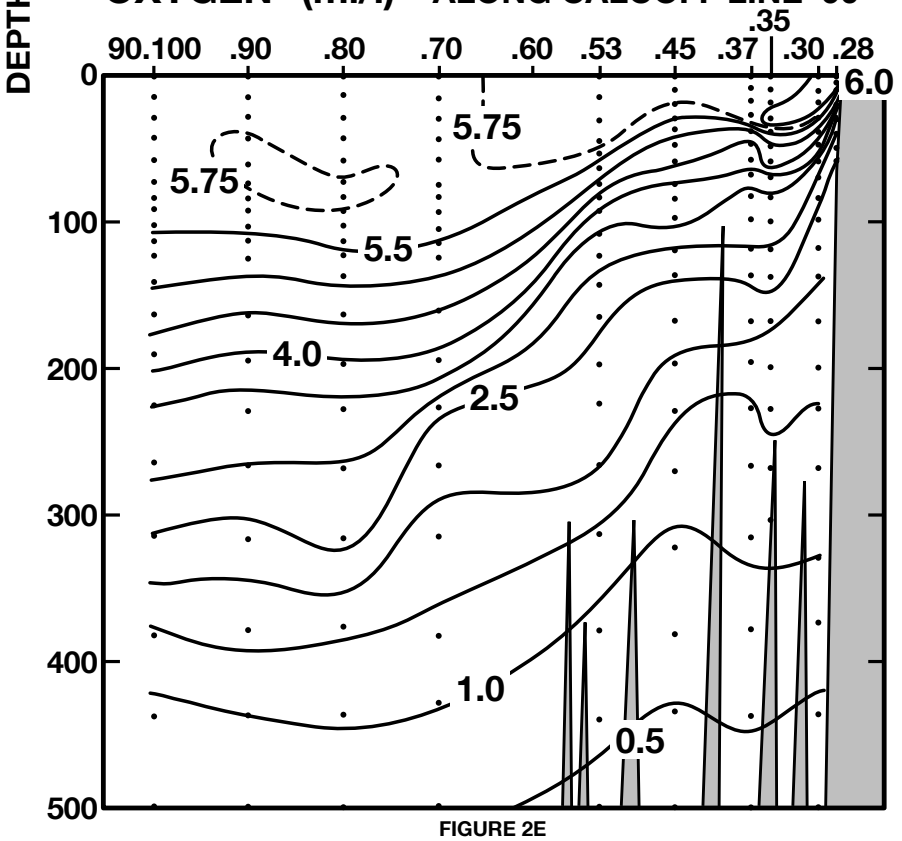


FIGURE 2E

CALCOFI CRUISE 9805

MAY 16 - 19 1998

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

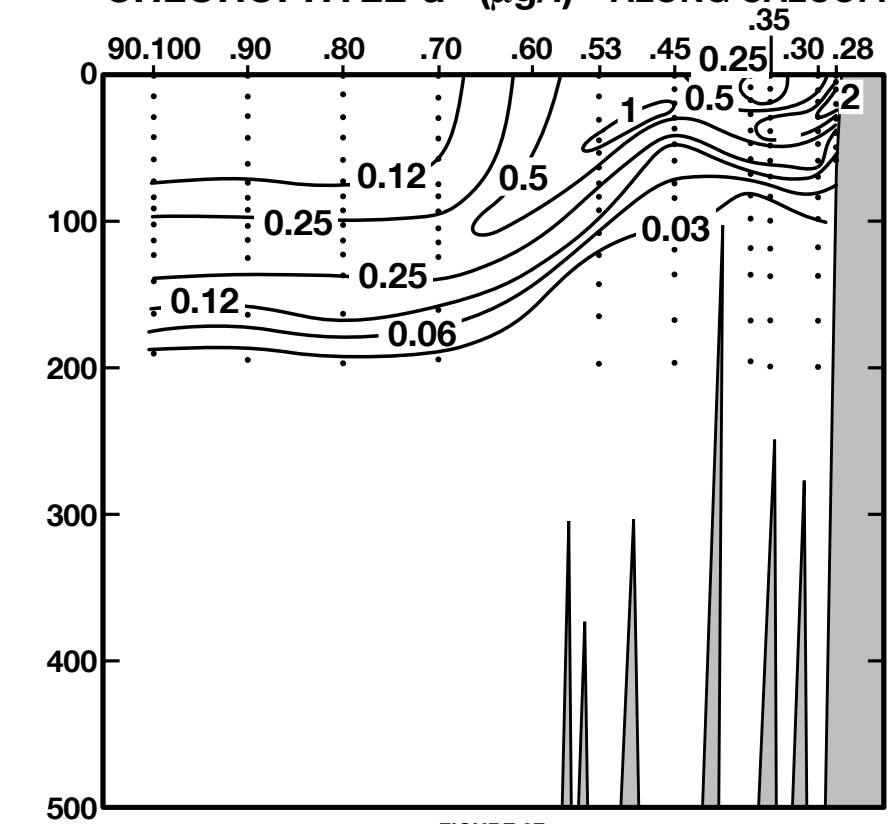


FIGURE 2F

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

DEPTH (m)

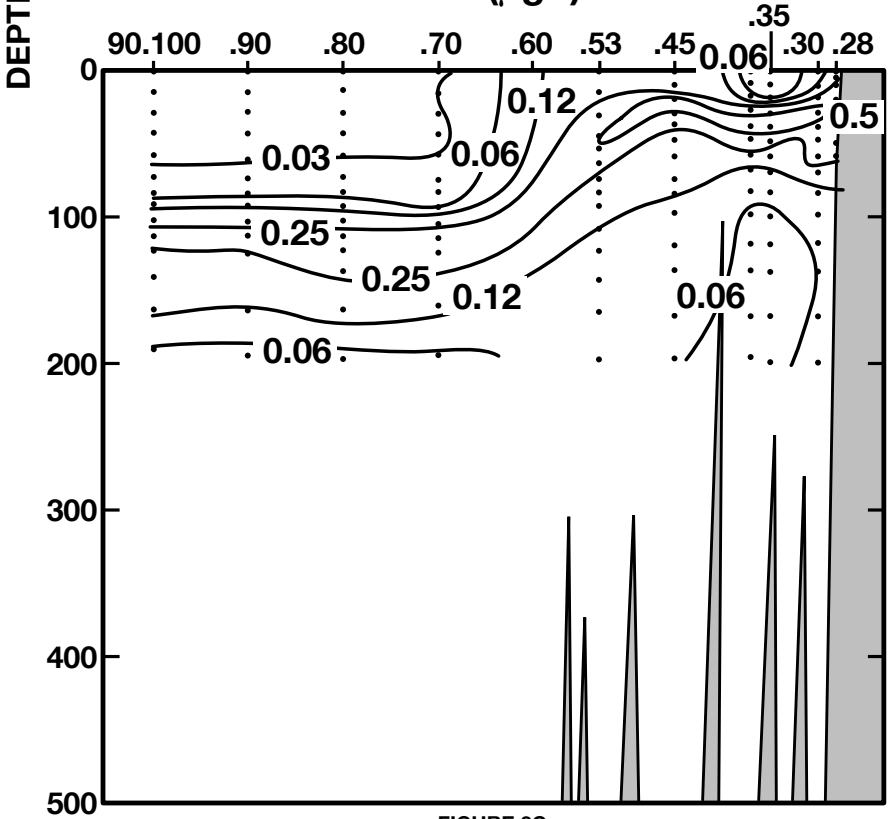


FIGURE 2G

PERSONNEL

CalCOFI Cruise 9805

SHIP'S CAPTAIN

Louis H. Zimm, RV *Robert Gordon Sproul*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

Wilkinson, James R. (Chief Scientist)	Programmer/Analyst, SIO
Ball, Jon J.	Volunteer
Comer, Ron L.	Resident Technician
Cummings, Sherry L.	Staff Research Associate, SIO
Hays, Amy E.	Fishery Biologist, NMFS
Held, Zachary E.	Volunteer
Humphreys, Robb C.	Volunteer
Hyrenbach, K. David	Graduate Student, SIO
Ramirez, Fernando	Staff Research Associate, SIO
Rusk, Steven W.	Marine Technician, SIO
Stone, Charles F.	Volunteer
Swensen, Daryl L.	Biological Technician, NMFS
Venegas, Jeff A.	Volunteer

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 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	21/05/98	1638 UTC	36 m	180 02 kn	300 02 07	1	1020.2 mb	16.5 C	14.9 C		3/8	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	14.90	14.90	33.486	24.827	311.2	0.000	6.45	112.1					2.46	0.82	0	
1	14.90	14.90	33.486	24.827	311.2	0.003	6.45	112.1					2.46	0.82	1	205
5	13.52	13.52	33.530	25.151	280.6	0.015	6.37	107.7					4.18	1.34	5	204
10	13.03	13.03	33.510	25.234	272.8	0.029	5.65	94.5					2.63	1.35	10	203
19	12.26	12.26	33.605	25.457	251.8	0.052	3.97	65.4					1.16	0.67	19	202
20 ISL	12.25	12.25	33.608	25.462	251.4	0.055	3.93	64.7					1.16	0.69	20	
30	12.14	12.14	33.635	25.504	247.6	0.080	3.53	58.0					1.15	0.88	30	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 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	21/05/98	1409 UTC	118 m	260 10 kn	270 03 07	1	1019.4 mb	14.7 C	13.1 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	14.29	14.29	33.505	24.972	297.4	0.000	6.33	108.7					3.21	0.72	0	
1	14.29	14.29	33.505	24.972	297.5	0.003	6.33	108.7					3.21	0.72	1	211
8	14.17	14.17	33.512	25.003	294.7	0.024	6.30	107.9					3.17	0.98	8	210
10 ISL	13.91	13.91	33.522	25.065	288.9	0.030	6.14	104.6					2.94	1.02	10	
18	12.76	12.76	33.573	25.336	263.3	0.052	5.42	90.2					1.82	1.11	18	209
20 ISL	12.63	12.63	33.579	25.366	260.5	0.057	5.31	88.1					1.63	1.13	20	
28	12.38	12.38	33.593	25.425	255.0	0.077	5.00	82.6					1.11	1.20	28	208
30 ISL	12.37	12.37	33.596	25.430	254.7	0.083	4.98	82.2					1.07	1.13	30	
39	12.30	12.29	33.608	25.453	252.7	0.105	4.88	80.4					0.86	0.73	39	207
48	11.50	11.49	33.657	25.641	235.0	0.127	3.61	58.5					0.19	0.42	48	206
50 ISL	11.38	11.37	33.671	25.674	231.9	0.132	3.50	56.6					0.17	0.39	50	
59	11.01	11.00	33.745	25.798	220.3	0.152	3.23	51.8					0.06	0.31	59	205
68	10.79	10.78	33.833	25.906	210.2	0.172	2.84	45.4					0.05	0.27	68	204
75 ISL	10.62	10.61	33.872	25.966	204.6	0.186	2.68	42.7					0.04	0.26	75	
78	10.54	10.53	33.888	25.993	202.2	0.192	2.63	41.8					0.03	0.26	78	203
89	10.24	10.23	33.985	26.121	190.3	0.214	2.34	37.0					0.02	0.14	89	202
99	10.18	10.17	34.016	26.155	187.2	0.233	2.17	34.3					0.02	0.17	100	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 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 8.7 W	21/05/98	0720 UTC	114 m	320 35 kn			1019.1 mb	13.7 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	13.56	13.56	33.513	25.129	282.5	0.000	5.52	93.4					1.92	0.88	0	
2	13.56	13.56	33.513	25.129	282.5	0.006	5.52	93.4					1.92	0.88	2	211
5	13.57	13.57	33.512	25.127	282.9	0.014	5.50	93.1					1.77	0.69	5	210
10	13.56	13.56	33.512	25.129	282.8	0.028	5.48	92.7					1.76	0.76	10	209
20	12.23	12.23	33.588	25.450	252.5	0.055	4.27	70.3					0.62	0.40	20	208
30	11.44	11.44	33.673	25.664	232.4	0.079	3.58	58.0					0.24	0.26	30	207
41	11.07	11.06	33.755	25.795	220.2	0.104	3.24	52.1					0.16	0.22	41	206
49	10.80	10.79	33.801	25.879	212.3	0.121	3.08	49.2					0.10	0.21	49	205
50 ISL	10.79	10.78	33.804	25.883	212.0	0.124	3.07	49.1					0.10	0.21	50	
60	10.69	10.68	33.831	25.922	208.5	0.145	2.91	46.4					0.08	0.20	60	204
68	10.54	10.53	33.867	25.976	203.5	0.161	2.72	43.2					0.04	0.17	68	203
75 ISL	10.43	10.42	33.879	26.005	200.9	0.175	2.71	43.0					0.04	0.17	75	
85	10.32	10.31	33.882	26.026	199.1	0.195	2.69	42.6					0.04	0.18	85	202
100 ISL	10.29	10.28	33.887	26.036	198.5	0.225	2.67	42.2					0.06	0.20	101	
101	10.29	10.28	33.887	26.036	198.6	0.227	2.67	42.2					0.06	0.20	102	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 44.7 N	120 24.9 W	21/05/98	0346 UTC	1019 m	320 28 kn			1019.2 mb	13.9 C	12.1 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	13.42	13.42	33.481	25.133	282.1	0.000									0	
2		13.42	13.42	33.481 D	25.133	282.2	0.006									2	2
10		13.42	13.42	33.484 D	25.135	282.2	0.028									10	2
20		12.98	12.98	33.519 D	25.251	271.4	0.056									20	2
30		12.80	12.80	33.504 D	25.275	269.4	0.083									30	2
40		12.53	12.52	33.515 D	25.336	263.8	0.110									40	2
50		12.12	12.11	33.569 D	25.457	252.6	0.135									50	2
75		10.53	10.52	33.730 D	25.871	213.6	0.194									75	2
100		9.83	9.82	33.736 D	25.996	202.2	0.246									101	2
125		9.01	9.00	33.851 D	26.219	181.4	0.294									126	2
150		8.78	8.76	33.894 D	26.290	175.1	0.338									151	2
175		8.35	8.33	33.966 D	26.412	163.8	0.381									176	2
200		8.08	8.06	33.986 D	26.469	158.8	0.421									201	2
225		7.66	7.64	34.022 D	26.559	150.6	0.460									226	2
250		7.46	7.44	34.035 D	26.598	147.2	0.497									252	2
275		7.06	7.03	34.045 D	26.662	141.3	0.533									277	2
300		6.86	6.83	34.053 D	26.696	138.4	0.568									302	2
350		6.51	6.48	34.101 D	26.781	130.8	0.635									352	2
400		6.48	6.44	34.184 D	26.851	125.0	0.699									403	2
450		6.18	6.14	34.213 D	26.913	119.5	0.760									453	2
500		5.74	5.70	34.245 D	26.994	112.1	0.818									504	2
517		5.70	5.66	34.246 D	27.000	111.7	0.837									521	2

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 34.6 N	120 45.2 W	21/05/98	0022 UTC	1366 m	320 26 kn	320 10 06	1	1019.5 mb	16.1 C	14.1 C		3/8	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	14.76	14.76	32.915	24.417	350.3	0.000									0	
2		14.76	14.76	32.915 D	24.417	350.3	0.007									2	2
10		14.76	14.76	32.914 D	24.417	350.6	0.035									10	2
20		14.76	14.76	32.923 D	24.424	350.2	0.070									20	2
30		14.85	14.85	32.980 D	24.449	348.1	0.105									30	2
40		15.08	15.07	33.077 D	24.474	346.0	0.140									40	2
50		14.88	14.87	33.163 D	24.584	335.9	0.174									50	2
75		14.78	14.77	33.667 D	24.995	297.5	0.253									75	2
100		11.93	11.92	33.507 D	25.446	254.9	0.322									100	2
125		10.38	10.37	33.655 D	25.840	217.7	0.381									126	2
150		9.75	9.73	33.748 D	26.019	201.0	0.433									151	2
175		9.03	9.01	33.864 D	26.227	181.6	0.481									176	2
200		8.52	8.50	33.936 D	26.363	169.0	0.525									201	2
225		8.04	8.02	33.997 D	26.484	157.8	0.566									226	2
250		7.73	7.71	34.017 D	26.545	152.3	0.605									251	2
275		7.48	7.45	34.028 D	26.590	148.4	0.642									277	2
300		7.17	7.14	34.059 D	26.658	142.1	0.679									302	2
350		6.79	6.76	34.104 D	26.746	134.3	0.748									352	2
400		6.36	6.32	34.141 D	26.833	126.6	0.813									403	2
450		6.12	6.08	34.209 D	26.918	119.0	0.874									453	2
500		5.85	5.81	34.247 D	26.982	113.4	0.932									503	2
521		5.77	5.73	34.252 D	26.996	112.2	0.956									525	2

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 14.8 N	121 26.6 W	20/05/98	1824 UTC	3777 m	330 25 kn	330 09 06	1	1021.1 mb	16.1 C	13.7 C		4/8	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	15.77	15.77	33.302	24.494	342.9	0.000									0	
2		15.77	15.77	33.302 D	24.494	343.0	0.007									2	2
10		15.77	15.77	33.303 D	24.495	343.1	0.034									10	2
20		15.76	15.76	33.304 D	24.499	343.1	0.069									20	2
30		15.76	15.76	33.304 D	24.499	343.4	0.103									30	2
40		15.76	15.75	33.306 D	24.501	343.5	0.137									40	2
50		15.67	15.66	33.305 D	24.521	342.0	0.172									50	2
75		14.85	14.84	33.371 D	24.752	320.6	0.254									75	2
100		13.93	13.92	33.677 D	25.183	280.2	0.330									100	2
125		10.67	10.66	33.618 D	25.761	225.3	0.393									126	2
150		9.62	9.60	33.744 D	26.038	199.3	0.446									151	2
175		8.96	8.94	33.861 D	26.236	180.8	0.493									176	2
200		8.52	8.50	33.948 D	26.373	168.1	0.537									201	2
225		8.23	8.21	33.982 D	26.444	161.7	0.578									226	2
250		7.76	7.74	33.996 D	26.524	154.3	0.618									251	2
275		7.54	7.51	34.002 D	26.561	151.1	0.656									277	2
300		7.14	7.11	34.000 D	26.616	146.1	0.693									302	2
350		6.37	6.34	34.010 D	26.727	135.8	0.763									352	2
400		5.85	5.82	34.044 D	26.820	127.2	0.829									403	2
450		5.54	5.50	34.092 D	26.897	120.4	0.891									453	2
500		5.26	5.22	34.130 D	26.960	114.7	0.950									503	2
525		5.16	5.12	34.144 D	26.983	112.7	0.978									529	2

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 54.7 N	122 7.7 W	20/05/98	1129 UTC	4184 m	240 25 kn			1018.5 mb	15.1 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	15.34	15.34	33.081	24.420	350.1	0.000	5.88	102.9					0.18	0.04	0	
1	15.34	15.34	33.081	24.420	350.1	0.004	5.88	102.9					0.18	0.04	1	220
10 ISL	15.35	15.35	33.082	24.418	350.5	0.035	5.85	102.4					0.17	0.03	10	
13	15.35	15.35	33.082	24.419	350.5	0.046	5.84	102.2					0.17	0.03	13	219
20 ISL	15.35	15.35	33.082	24.419	350.7	0.070	5.84	102.2					0.16	0.03	20	
29	15.35	15.35	33.082	24.419	351.0	0.102	5.83	102.0					0.16	0.03	29	218
30 ISL	15.35	15.35	33.083	24.420	350.9	0.105	5.83	102.0					0.16	0.03	30	
43	15.34	15.33	33.093	24.430	350.3	0.151	5.86	102.5					0.17	0.04	43	217
50 ISL	15.24	15.23	33.195	24.531	341.0	0.175	5.86	102.4					0.17	0.05	50	
58	15.13	15.12	33.322	24.653	329.6	0.202	5.86	102.2					0.17	0.06	58	216
74	15.22	15.21	33.412	24.703	325.3	0.254	5.80	101.4					0.23	0.08	74	215
75 ISL	15.24	15.23	33.422	24.707	325.0	0.257	5.79	101.3					0.24	0.09	75	
84	15.38	15.37	33.523	24.754	320.8	0.286	5.72	100.4					0.34	0.19	84	214
95	15.45	15.44	33.663	24.847	312.4	0.321	5.58	98.2					0.31	0.20	95	213
100 ISL	15.35	15.33	33.718	24.911	306.4	0.337	5.50	96.6					0.32	0.19	100	
103	15.25	15.23	33.743	24.953	302.5	0.346	5.46	95.7					0.33	0.19	103	212
114	14.75	14.73	33.744	25.062	292.3	0.379	5.40	93.7					0.28	0.19	114	211
123	12.44	12.42	33.552	25.384	261.4	0.404	4.96	82.0					0.16	0.15	124	210
125 ISL	12.14	12.12	33.537	25.430	257.1	0.409	4.86	79.8					0.14	0.14	126	
138	10.97	10.95	33.528	25.638	237.3	0.441	4.26	68.2					0.08	0.10	139	209
150 ISL	10.38	10.36	33.601	25.798	222.2	0.468	3.99	63.1					0.04	0.06	151	
161	10.07	10.05	33.687	25.918	211.0	0.492	3.84	60.3					0.02	0.04	162	208
192	9.36	9.34	33.831	26.149	189.5	0.554	3.24	50.2					0.00	0.03	193	207
200 ISL	9.17	9.15	33.874	26.213	183.5	0.569	3.11	48.0							201	
228	8.59	8.57	34.008	26.410	165.2	0.618	2.71	41.3							229	206
250 ISL	8.33	8.30	34.059	26.490	157.9	0.654	2.46	37.3							251	
268	8.18	8.15	34.080	26.529	154.5	0.682	2.29	34.6							269	205
300 ISL	7.87	7.84	34.101	26.592	148.9	0.730	2.05	30.7							302	
317	7.70	7.67	34.106	26.620	146.4	0.755	1.93	28.8							319	204
376	6.99	6.95	34.134	26.743	135.2	0.838	1.37	20.1							378	203
400 ISL	6.64	6.60	34.132	26.789	131.0	0.870	1.20	17.5							402	
444	6.06	6.02	34.134	26.866	123.8	0.926	0.92	13.2							447	202
500 ISL	5.74	5.70	34.192	26.952	116.0	0.994	0.60	8.6							503	
520	5.62	5.58	34.213	26.983	113.2	1.017	0.48	6.8							523	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 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 48.7 W	20/05/98	0353 UTC	4270 m	350 23 kn			1021.0 mb	15.2 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	15.64	15.64	33.122	24.385	353.4	0.000	5.82	102.5					0.14	0.02	0	
1	15.64	15.64	33.122	24.385	353.4	0.004	5.82	102.5					0.14	0.02	1	220
10 ISL	15.63	15.63	33.121	24.387	353.5	0.035	5.81	102.3					0.13	0.02	10	
15	15.63	15.63	33.120	24.386	353.7	0.053	5.81	102.3					0.13	0.02	15	219
20 ISL	15.63	15.63	33.120	24.386	353.8	0.071	5.81	102.3					0.13	0.01	20	
29	15.64	15.64	33.119	24.384	354.4	0.103	5.81	102.3					0.14	0.00	29	218
30 ISL	15.63	15.63	33.125	24.390	353.8	0.106	5.81	102.3					0.14	0.00	30	
45	15.43	15.42	33.241	24.524	341.4	0.158	5.86	102.8					0.15	0.04	45	217
50 ISL	15.34	15.33	33.283	24.577	336.6	0.175	5.86	102.6					0.15	0.04	50	
59	15.20	15.19	33.346	24.656	329.3	0.205	5.86	102.4					0.15	0.04	59	216
73	15.13	15.12	33.378	24.697	325.9	0.251	5.80	101.2					0.20	0.09	73	215
75 ISL	15.12	15.11	33.379	24.700	325.7	0.258	5.80	101.2					0.21	0.09	75	
84	15.08	15.07	33.384	24.712	324.7	0.287	5.80	101.1					0.25	0.10	84	214
94	14.99	14.98	33.394	24.740	322.4	0.319	5.72	99.5					0.34	0.23	94	213
100 ISL	14.62	14.61	33.416	24.837	313.3	0.338	5.54	95.7					0.35	0.23	100	
105	14.13	14.11	33.438	24.957	301.9	0.354	5.33	91.2					0.35	0.23	105	212
116	12.47	12.45	33.485	25.326	266.7	0.385	4.66	77.0					0.19	0.16	116	211
125	11.83	11.81	33.532	25.484	251.8	0.408	4.39	71.6					0.12	0.14	126	210
138	11.23	11.21	33.642	25.680	233.4	0.440	3.75	60.4					0.05	0.06	139	209
150 ISL	10.74	10.72	33.706	25.818	220.5	0.467	3.48	55.5					0.02	0.05	151	
163	10.28	10.26	33.756	25.937	209.4	0.495	3.33	52.6					0.00	0.04	164	208
192	9.59	9.57	33.862	26.136	190.9	0.553	2.97	46.2					0.00	0.03	193	207
200 ISL	9.43	9.41	33.892	26.185	186.3	0.568	2.89	44.8							201	
228	8.97	8.95	33.990	26.336	172.3	0.618	2.60	39.9							229	206
250 ISL	8.74	8.71	34.054	26.423	164.5	0.655	2.34	35.8							251	
267	8.58	8.55	34.094	26.479	159.4	0.683	2.15	32.8							268	205
300 ISL	8.18	8.15	34.135	26.573	150.9	0.734	1.83	27.6							302	
319	7.95	7.92	34.147	26.616	147.0	0.762	1.67	25.1							321	204
380	7.30	7.26	34.181	26.737	136.1	0.849	1.21	17.9							382	203
400 ISL	7.12	7.08	34.195	26.774	132.9	0.876	1.06	15.6							402	
435	6.82	6.78	34.216	26.832	127.7	0.921	0.82	12.0							438	202
500 ISL	6.22	6.18	34.231	26.923	119.4	1.001	0.61	8.8							503	
529	5.95	5.90	34.239	26.964	115.6	1.036	0.51	7.3							533	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 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	17/05/98	0230 UTC	66 m	280 03 kn	290 01 04	1	1016.9 mb	17.1 C	15.0 C		2/8	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	18.21	18.21	33.425	24.016	388.5	0.000	5.99	111.1					0.55	0.17	0	
1		18.21	18.21	33.425	24.016	388.6	0.004	5.99	111.1					0.55	0.17	1	208
5		18.09	18.09	33.412	24.035	386.8	0.019	6.07	112.3					0.65	0.17	5	207
10		17.48	17.48	33.462	24.222	369.3	0.038	5.74	105.0					2.15	0.39	10	206
20		13.46	13.46	33.607	25.223	274.1	0.070	3.90	65.9					2.77	0.48	20	205
30		12.60	12.60	33.621	25.405	257.1	0.097	3.55	58.9					0.84	0.38	30	204
40		11.86	11.85	33.729	25.630	235.9	0.122	2.99	48.9					0.19	0.29	40	203
50		11.58	11.57	33.784	25.725	227.1	0.145	2.67	43.4					0.14	0.34	50	202
58		11.27	11.26	33.832	25.819	218.3	0.163	2.50	40.4					0.09	0.28	58	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 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	16/05/98	2322 UTC	616 m	190 06 kn	200 01 08	1	1016.9 mb	17.3 C	16.1 C		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	16.59	16.59	33.448	24.420	350.0	0.000	6.06	108.9					0.39	0.08	0	
1		16.59	16.59	33.448	24.420	350.0	0.004	6.06	108.9					0.39	0.08	1	220
10	ISL	16.32	16.32	33.449	24.483	344.3	0.035	6.16	110.1					0.50	0.12	10	
11		16.27	16.27	33.449	24.495	343.2	0.038	6.17	110.2					0.53	0.12	11	219
19		15.91	15.91	33.453	24.580	335.4	0.065	6.18	109.6					0.83	0.26	19	218
20	ISL	15.73	15.73	33.460	24.625	331.1	0.069	6.16	108.9					0.98	0.33	20	
29		13.98	13.98	33.544	25.068	289.2	0.097	5.74	98.0					1.96	0.88	29	217
30	ISL	13.86	13.86	33.550	25.097	286.4	0.099	5.63	95.8					1.86	0.86	30	
39		13.08	13.07	33.581	25.279	269.2	0.124	4.68	78.4					0.66	0.45	39	216
48		12.40	12.39	33.603	25.430	255.1	0.148	4.24	70.0					0.28	0.26	48	215
50	ISL	12.32	12.31	33.617	25.456	252.7	0.153	4.09	67.4					0.28	0.26	50	
59		12.04	12.03	33.690	25.566	242.4	0.175	3.40	55.8					0.26	0.30	59	214
70		11.59	11.58	33.776	25.717	228.3	0.201	2.93	47.6					0.11	0.17	70	213
75	ISL	11.31	11.30	33.822	25.804	220.1	0.213	2.77	44.8					0.07	0.14	75	
84		10.85	10.84	33.897	25.946	206.8	0.232	2.57	41.1					0.04	0.10	84	212
99		10.64	10.63	33.949	26.023	199.8	0.262	2.43	38.7					0.03	0.08	99	211
100	ISL	10.62	10.61	33.953	26.030	199.2	0.264	2.42	38.6					0.03	0.08	101	
118		10.26	10.25	34.023	26.147	188.4	0.299	2.19	34.6					0.02	0.08	119	210
125	ISL	10.11	10.10	34.044	26.190	184.5	0.312	2.14	33.7					0.02	0.07	126	
138		9.85	9.83	34.078	26.260	178.0	0.336	2.05	32.1					0.01	0.06	139	209
150	ISL	9.72	9.70	34.109	26.306	173.9	0.357	1.93	30.2					0.01	0.06	151	
168		9.60	9.58	34.148	26.357	169.4	0.388	1.77	27.6					0.01	0.07	169	208
199		9.39	9.37	34.177	26.415	164.5	0.439	1.67	25.9					0.01	0.07	200	207
200	ISL	9.38	9.36	34.178	26.417	164.3	0.441	1.66	25.8							201	
228		8.97	8.95	34.212	26.510	155.9	0.486	1.48	22.8							229	206
250	ISL	8.63	8.60	34.220	26.570	150.5	0.520	1.39	21.2							251	
268		8.38	8.35	34.224	26.612	146.8	0.546	1.32	20.0							270	205
300	ISL	8.20	8.17	34.241	26.653	143.4	0.593	1.17	17.7							302	
329		8.04	8.01	34.257	26.690	140.3	0.634	1.00	15.1							331	204
373		7.37	7.33	34.276	26.802	129.9	0.693	0.69	10.2							375	203
400	ISL	7.06	7.02	34.287	26.854	125.2	0.728	0.56	8.2							403	
435		6.74	6.70	34.300	26.908	120.3	0.771	0.45	6.6							438	202
500	ISL	6.29	6.24	34.316	26.981	114.0	0.847	0.34	4.9							503	
527		6.11	6.06	34.324	27.011	111.4	0.877	0.29	4.2							531	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 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 15.0 W	17/05/98	0710 UTC	312 m	280 06 kn			1017.6 mb	16.3 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	ISL	16.53	16.53	33.410	24.405	351.5	0.000	5.83	104.6					0.19	0.03	0	
1		16.53	16.53	33.410	24.405	351.5	0.004	5.83	104.6					0.19	0.03	1	217
10		16.52	16.52	33.408	24.406	351.7	0.035	5.84	104.8					0.20	0.03	10	216
19		16.09	16.09	33.371	24.476	345.3	0.067	5.93	105.5					0.25	0.06	19	215
20	ISL	15.90	15.90	33.366	24.515	341.6	0.070	5.95	105.4					0.33	0.10	20	
30		14.06	14.06	33.371	24.917	303.5	0.102	6.16	105.2					1.17	0.57	30	214
39		13.65	13.64	33.459	25.070	289.2	0.129	5.43	92.0					1.34	0.66	39	213
49		12.93	12.92	33.506	25.251	272.2	0.157	4.85	81.0					0.43	0.27	49	212
50	ISL	12.83	12.82	33.505	25.270	270.4	0.160	4.84	80.6					0.41	0.27	50	
59		11.90	11.89	33.508	25.451	253.3	0.183	4.69	76.6					0.25	0.24	59	211
70		10.90	10.89	33.621	25.722	227.8	0.210	3.94	63.0					0.07	0.09	70	210
75	ISL	10.81	10.80	33.660	25.768	223.5	0.221	3.72	59.4					0.06	0.08	75	
84		10.66	10.65	33.717	25.839	216.9	0.241	3.45	54.9					0.03	0.06	84	209
100		10.15	10.14	33.803	25.994	202.5	0.274	3.13	49.3					0.01	0.06	100	208
119		9.66	9.65	33.859	26.120	190.8	0.312	2.98	46.5					0.01	0.04	120	207
125	ISL	9.51	9.50	33.872	26.155	187.6	0.323	2.96	46.0					0.01	0.04	126	
138		9.26	9.24	33.911	26.227	181.0	0.347	2.86	44.2					0.01	0.03	139	206
150	ISL	9.30	9.28	33.999	26.289	175.3	0.368	2.53	39.2					0.01	0.03	151	
168		9.35	9.33	34.114	26.371	168.0	0.399	2.02	31.3					0.01	0.04	169	205
199		9.01	8.99	34.160	26.463	159.8	0.450	1.80	27.7					0.00	0.03	200	204
200	ISL	8.99	8.97	34.161	26.467	159.5	0.452	1.79	27.5							201	
228		8.51	8.49	34.184	26.560	151.0	0.495	1.64	25.0							229	203
250	ISL	8.29	8.26	34.204	26.609	146.6	0.528	1.45	22.0							251	
268		8.16	8.13	34.216	26.639	144.1	0.554	1.32	19.9							270	202
300	ISL	7.89	7.86	34.209	26.674	141.2	0.600	1.28	19.2							302	
303		7.87	7.84	34.208	26.676	141.0	0.604	1.28	19.2							305	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 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 23.2 W	17/05/98	1056 UTC	1179 m	300 12 kn			1016.8 mb	15.2 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	16.51	16.51	33.455	24.444	347.7	0.000	5.82	104.4					0.25	0.05	0	
1		16.51	16.51	33.455	24.444	347.8	0.003	5.82	104.4					0.25	0.05	1	220
9		16.52	16.52	33.451	24.439	348.5	0.031	5.81	104.3					0.24	0.05	9	219
10	ISL	16.50	16.50	33.449	24.442	348.2	0.035	5.82	104.4					0.24	0.06	10	
18		15.97	15.97	33.442	24.558	337.5	0.062	5.94	105.5					0.27	0.10	18	218
20	ISL	15.64	15.64	33.448	24.636	330.0	0.069	5.93	104.6					0.35	0.18	20	
27		14.44	14.44	33.487	24.927	302.5	0.091	5.90	101.6					0.62	0.46	27	217
30	ISL	14.18	14.18	33.501	24.993	296.3	0.100	5.69	97.5					0.63	0.49	30	
38		13.65	13.64	33.533	25.127	283.7	0.123	4.98	84.4					0.66	0.56	38	216
47		12.85	12.84	33.573	25.319	265.7	0.148	4.33	72.2					0.38	0.31	47	215
50	ISL	12.61	12.60	33.566	25.360	261.8	0.156	4.33	71.8					0.34	0.28	50	
58		12.02	12.01	33.561	25.470	251.5	0.176	4.33	70.9					0.25	0.23	58	214
68		11.31	11.30	33.670	25.686	231.2	0.201	3.64	58.8					0.07	0.11	68	213
75	ISL	11.01	11.00	33.710	25.771	223.2	0.216	3.42	54.9					0.05	0.09	75	
83		10.75	10.74	33.737	25.839	217.0	0.234	3.32	53.0					0.02	0.07	83	212
99		10.13	10.12	33.782	25.981	203.7	0.268	3.23	50.9					0.01	0.05	99	211
100	ISL	10.10	10.09	33.785	25.989	203.0	0.270	3.22	50.7					0.01	0.05	100	
119		9.66	9.65	33.855	26.117	191.1	0.307	2.98	46.5					0.01	0.05	120	210
125	ISL	9.56	9.55	33.882	26.155	187.6	0.319	2.88	44.8					0.01	0.05	126	
137		9.39	9.37	33.938	26.227	181.0	0.341	2.67	41.4					0.01	0.05	138	209
150	ISL	9.25	9.23	34.005	26.302	174.1	0.364	2.44	37.7					0.01	0.04	151	
168		9.08	9.06	34.088	26.394	165.7	0.394	2.14	33.0					0.00	0.03	169	208
196		8.78	8.76	34.162	26.500	156.1	0.439	1.79	27.4					0.00	0.03	197	207
200	ISL	8.74	8.72	34.171	26.514	154.9	0.446	1.73	26.5							201	
227		8.42	8.40	34.212	26.595	147.5	0.486	1.41	21.4							228	206
250	ISL	8.08	8.05	34.212	26.647	142.9	0.520	1.36	20.5							251	
266		7.87	7.84	34.207	26.674	140.5	0.542	1.33	20.0							268	205
300	ISL	7.67	7.64	34.220	26.714	137.2	0.590	1.17	17.5							302	
315		7.60	7.57	34.228	26.731	135.9	0.610	1.09	16.3							317	204
377		7.04	7.00	34.248	26.826	127.5	0.692	0.76	11.2							379	203
400	ISL	6.87	6.83	34.257	26.857	124.8	0.721	0.67	9.8							403	
436		6.64	6.60	34.275	26.902	120.8	0.765	0.54	7.9							439	202
500	ISL	6.28	6.23	34.317	26.983	113.8	0.840	0.36	5.2							503	
520		6.17	6.12	34.331	27.008	111.6	0.863	0.30	4.3							524	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 54.9 N	118 56.3 W	17/05/98	1722 UTC	1665 m	310 15 kn	310 04 08	0	1019.1 mb	15.8 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	15.11	15.11	33.354	24.680	325.2	0.000	5.95	103.8					0.54	0.21	0	
1		15.11	15.11	33.354	24.680	325.3	0.003	5.95	103.8					0.54	0.21	1	220
10		15.06	15.06	33.352	24.690	324.6	0.032	5.94	103.5					0.61	0.18	10	219
20		13.98	13.98	33.375	24.937	301.3	0.064	5.60	95.5					1.00	0.51	20	218
30		13.59	13.59	33.459	25.082	287.8	0.093	5.43	91.9					0.40	0.32	30	217
37		13.40	13.39	33.477	25.135	283.0	0.113	5.28	89.0					0.29	0.27	37	216
48		12.66	12.65	33.552	25.340	263.7	0.143	4.63	76.9					0.10	0.16	48	215
50	ISL	12.63	12.62	33.556	25.349	262.9	0.149	4.60	76.3					0.09	0.16	50	
59		12.52	12.51	33.563	25.376	260.6	0.172	4.51	74.7					0.07	0.15	59	214
75		11.64	11.63	33.620	25.587	240.8	0.212	3.92	63.7					0.05	0.14	75	213
85		11.00	10.99	33.627	25.709	229.4	0.236	3.91	62.7					0.05	0.12	85	212
98		10.41	10.40	33.670	25.846	216.5	0.265	3.80	60.2					0.04	0.09	98	211
100	ISL	10.33	10.32	33.686	25.872	214.1	0.269	3.74	59.1					0.04	0.09	100	
120		9.65	9.64	33.863	26.125	190.4	0.309	2.99	46.6					0.01	0.09	121	210
125	ISL	9.54	9.53	33.896	26.169	186.3	0.319	2.85	44.3					0.01	0.09	126	
137		9.31	9.29	33.961	26.258	178.1	0.341	2.58	39.9					0.01	0.09	138	209
150	ISL	9.06	9.04	33.996	26.325	171.9	0.363	2.45	37.7					0.01	0.09	151	
168		8.77	8.75	34.028	26.396	165.4	0.394	2.33	35.6					0.01	0.09	169	208
197		8.56	8.54	34.114	26.497	156.4	0.440	1.95	29.7					0.01	0.07	198	207
200	ISL	8.54	8.52	34.122	26.506	155.5	0.445	1.91	29.1							201	
229		8.32	8.30	34.181	26.586	148.4	0.489	1.55	23.5							230	206
250	ISL	8.12	8.09	34.194	26.627	144.8	0.520	1.42	21.4							251	
270		7.93	7.90	34.201	26.661	141.9	0.549	1.32	19.8							272	205
300	ISL	7.76	7.73	34.235	26.713	137.4	0.591	1.05	15.7							302	
322		7.64	7.61	34.259	26.750	134.2	0.620	0.87	13.0							324	204
381		7.09	7.05	34.265	26.833	127.0	0.698	0.69	10.2							383	203
400	ISL	6.96	6.92	34.275	26.859	124.7	0.721	0.62	9.1							403	
433		6.74	6.70	34.296	26.905	120.6	0.762	0.49	7.2							436	202
500	ISL	6.09	6.05	34.330	27.018	110.3	0.839	0.32	4.6							503	
515		5.94	5.89	34.339	27.044	107.9	0.856	0.28	4.0							519	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 39.2 N	119 29.0 W	17/05/98	2342 UTC	1319 m	320 22 kn	320 09 04	0	1018.0 mb	16.8 C	15.1 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	15.25	15.25	33.366	24.659	327.3	0.000	5.96	104.3					0.80	0.24	0	
2	15.25	15.25	33.366	24.659	327.3	0.007	5.96	104.3					0.80	0.24	2	220
10 ISL	15.25	15.25	33.366	24.659	327.5	0.033	5.95	104.1					0.78	0.25	10	
15	15.25	15.25	33.367	24.660	327.6	0.049	5.94	103.9					0.76	0.25	15	219
20 ISL	15.24	15.24	33.368	24.663	327.5	0.065	5.94	103.9					0.78	0.25	20	
30 ISL	15.23	15.23	33.369	24.666	327.5	0.098	5.94	103.9					0.81	0.25	30	
31	15.23	15.23	33.369	24.667	327.5	0.102	5.94	103.9					0.81	0.25	31	218
45	15.00	14.99	33.381	24.726	322.2	0.147	5.88	102.3					1.11	0.41	45	217
50 ISL	14.35	14.34	33.397	24.878	307.9	0.163	5.69	97.7					0.94	0.47	50	
54	13.84	13.83	33.413	24.996	296.7	0.175	5.52	93.8					0.76	0.50	54	216
64	13.50	13.49	33.425	25.075	289.4	0.204	5.32	89.8					0.46	0.38	64	215
75	12.77	12.76	33.512	25.288	269.4	0.235	4.77	79.4					0.26	0.24	75	214
84	12.30	12.29	33.562	25.418	257.2	0.259	4.35	71.7					0.23	0.24	84	213
93	11.65	11.64	33.620	25.585	241.4	0.281	3.89	63.2					0.14	0.19	93	212
100 ISL	11.26	11.25	33.673	25.698	230.8	0.298	3.60	58.1					0.09	0.15	100	
109	10.80	10.79	33.736	25.830	218.4	0.318	3.32	53.0					0.04	0.11	110	211
124	9.95	9.94	33.809	26.033	199.3	0.349	3.10	48.6					0.02	0.09	125	210
125 ISL	9.92	9.91	33.815	26.043	198.3	0.351	3.08	48.3					0.02	0.09	126	
144	9.51	9.49	33.914	26.188	184.8	0.387	2.72	42.3					0.01	0.09	145	209
150 ISL	9.37	9.35	33.938	26.230	181.0	0.398	2.65	41.1					0.01	0.09	151	
166	8.99	8.97	33.986	26.329	171.8	0.427	2.53	38.9					0.01	0.09	167	208
198	8.32	8.30	34.015	26.456	160.2	0.480	2.57	38.9					0.01	0.08	199	207
200 ISL	8.29	8.27	34.018	26.463	159.5	0.483	2.56	38.7							201	
225	7.96	7.94	34.051	26.538	152.7	0.522	2.33	35.0							226	206
250 ISL	7.60	7.58	34.062	26.599	147.1	0.559	2.17	32.3							251	
266	7.38	7.35	34.067	26.635	143.9	0.583	2.06	30.5							268	205
300 ISL	7.08	7.05	34.108	26.709	137.3	0.631	1.63	24.0							302	
313	6.99	6.96	34.126	26.736	134.9	0.648	1.45	21.3							315	204
379	6.58	6.55	34.199	26.849	124.9	0.734	0.88	12.8							381	203
400 ISL	6.49	6.45	34.220	26.878	122.4	0.760	0.76	11.0							403	
439	6.33	6.29	34.252	26.925	118.4	0.807	0.58	8.4							442	202
500 ISL	5.94	5.90	34.277	26.995	112.3	0.877	0.42	6.0							503	
517	5.83	5.79	34.284	27.014	110.6	0.896	0.38	5.4							521	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 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 57.7 W	18/05/98	0558 UTC	831 m	320 25 kn			1018.1 mb	14.9 C	13.2 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	15.25	15.25	33.021	24.393	352.6	0.000									0	
2	15.25	15.25	33.021 D	24.393	352.6	0.007									2	2
10	15.25	15.25	33.033 D	24.403	352.0	0.035									10	2
20	15.25	15.25	33.033 D	24.403	352.2	0.070									20	2
30	15.24	15.24	33.032 D	24.405	352.4	0.106									30	2
40	15.14	15.13	33.034 D	24.428	350.4	0.141									40	2
50	15.17	15.16	33.112 D	24.482	345.6	0.176									50	2
75	14.78	14.77	33.346 D	24.748	321.0	0.259									75	2
100	12.27	12.26	33.462 D	25.347	264.4	0.332									100	2
125	10.53	10.52	33.614 D	25.782	223.2	0.393									126	2
150	9.67	9.65	33.708 D	26.001	202.7	0.446									151	2
175	9.46	9.44	33.948 D	26.224	182.1	0.494									176	2
200	9.08	9.06	34.021 D	26.343	171.2	0.539									201	2
225	8.27	8.25	33.990 D	26.444	161.7	0.580									226	2
250	7.98	7.95	34.029 D	26.518	155.0	0.620									251	2
275	7.72	7.69	34.047 D	26.571	150.4	0.658									277	2
300	7.57	7.54	34.096 D	26.631	145.0	0.695									302	2
350	6.93	6.90	34.122 D	26.741	134.9	0.765									352	2
400	6.50	6.46	34.166 D	26.834	126.6	0.830									402	2
450	6.12	6.08	34.189 D	26.902	120.5	0.892									453	2
500	6.04	6.00	34.253 D	26.963	115.4	0.951									503	2
517	5.92	5.87	34.258 D	26.982	113.7	0.970									520	2

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 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 38.1 W	18/05/98	1258	UTC	330	20 kn	330 07 08	1	1016.2 mb	15.2 C	13.9 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	16.46	16.46	33.528	24.511	341.3	0.000	5.70	102.2					0.11	0.02	0	
1		16.46	16.46	33.528	24.511	341.3	0.003	5.70	102.2					0.11	0.02	1	220
10	ISL	16.46	16.46	33.529	24.512	341.5	0.034	5.69	102.1					0.10	0.03	10	
16		16.46	16.46	33.530	24.514	341.6	0.055	5.68	101.9					0.10	0.03	16	219
20	ISL	16.46	16.46	33.530	24.514	341.7	0.068	5.68	101.9					0.10	0.03	20	
30		16.47	16.47	33.530	24.512	342.3	0.103	5.67	101.7					0.11	0.02	30	218
44		16.47	16.46	33.529	24.511	342.7	0.150	5.68	101.9					0.11	0.02	44	217
50	ISL	16.42	16.41	33.555	24.543	339.9	0.171	5.70	102.2					0.11	0.02	50	
58		16.34	16.33	33.591	24.589	335.7	0.198	5.72	102.4					0.12	0.03	58	216
75		16.17	16.16	33.592	24.630	332.5	0.255	5.71	101.9					0.14	0.04	75	215
84		16.03	16.02	33.575	24.649	330.9	0.285	5.71	101.6					0.16	0.04	84	214
94		15.86	15.85	33.568	24.682	328.0	0.318	5.69	100.9					0.19	0.06	94	213
100	ISL	15.77	15.75	33.581	24.712	325.3	0.337	5.67	100.3					0.31	0.14	100	
105		15.65	15.63	33.592	24.748	322.1	0.353	5.65	99.7					0.41	0.22	105	212
115		15.07	15.05	33.591	24.875	310.2	0.385	5.48	95.6					0.47	0.36	115	211
125		14.35	14.33	33.607	25.042	294.5	0.415	5.32	91.5					0.41	0.36	126	210
132		13.41	13.39	33.566	25.204	279.0	0.435	5.12	86.3					0.32	0.31	133	209
150	ISL	11.76	11.74	33.531	25.497	251.2	0.483	4.71	76.7					0.17	0.20	151	
161		11.08	11.06	33.544	25.631	238.5	0.510	4.50	72.2					0.11	0.14	162	208
194		9.64	9.62	33.712	26.010	202.8	0.583	3.82	59.5					0.02	0.05	195	207
200	ISL	9.52	9.50	33.763	26.070	197.2	0.595	3.58	55.6							201	
227		9.15	9.13	33.973	26.294	176.4	0.645	2.57	39.6							228	206
250	ISL	8.76	8.73	34.039	26.408	165.9	0.685	2.41	36.9							251	
267		8.48	8.45	34.059	26.467	160.5	0.712	2.29	34.8							268	205
300	ISL	8.03	8.00	34.117	26.581	150.1	0.764	1.88	28.3							302	
315		7.84	7.81	34.136	26.624	146.1	0.786	1.70	25.5							317	204
382		7.07	7.03	34.132	26.731	136.6	0.880	1.41	20.8							384	203
400	ISL	6.88	6.84	34.139	26.762	133.7	0.905	1.27	18.6							402	
428		6.61	6.57	34.156	26.812	129.2	0.942	1.04	15.1							431	202
500	ISL	6.10	6.06	34.214	26.925	119.1	1.031	0.63	9.1							503	
515		5.99	5.94	34.226	26.948	116.9	1.049	0.55	7.9							518	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 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	18/05/98	2009	UTC	320	18 kn	330 06 08	1	1019.4 mb	17.6 C	15.5 C		2/8	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	16.84	16.84	33.621	24.495	342.9	0.000	5.64	102.0					0.08	0.01	0	
1		16.84	16.84	33.621	24.495	342.9	0.003	5.64	102.0					0.08	0.01	1	220
10	ISL	16.80	16.80	33.620	24.504	342.4	0.034	5.63	101.7					0.08	0.01	10	
15		16.77	16.77	33.620	24.511	341.9	0.051	5.62	101.5					0.08	0.01	15	219
20	ISL	16.76	16.76	33.620	24.513	341.8	0.068	5.62	101.4					0.08	0.01	20	
30		16.74	16.74	33.620	24.518	341.6	0.103	5.63	101.6					0.09	0.01	30	218
44		16.72	16.71	33.618	24.522	341.8	0.150	5.65	101.9					0.09	0.02	44	217
50	ISL	16.65	16.64	33.613	24.535	340.7	0.171	5.66	101.9					0.09	0.02	50	
59		16.52	16.51	33.605	24.559	338.7	0.202	5.67	101.8					0.10	0.03	59	216
74		16.35	16.34	33.594	24.590	336.2	0.252	5.78	103.5					0.12	0.04	74	215
75	ISL	16.34	16.33	33.594	24.592	336.0	0.256	5.78	103.4					0.12	0.04	75	
84		16.24	16.23	33.591	24.613	334.3	0.286	5.80	103.6					0.14	0.05	84	214
94		16.13	16.12	33.588	24.636	332.4	0.319	5.71	101.8					0.20	0.08	94	213
100	ISL	15.88	15.86	33.572	24.681	328.4	0.339	5.70	101.1					0.29	0.15	100	
104		15.71	15.69	33.563	24.712	325.5	0.352	5.69	100.5					0.35	0.20	104	212
114		15.65	15.63	33.569	24.730	324.0	0.384	5.64	99.5					0.36	0.26	114	211
124		14.50	14.48	33.506	24.932	304.9	0.416	5.35	92.2					0.40	0.34	125	210
125	ISL	14.41	14.39	33.507	24.952	303.0	0.419	5.33	91.7					0.39	0.34	126	
138		13.39	13.37	33.544	25.192	280.4	0.457	5.14	86.6					0.24	0.29	139	209
150	ISL	12.47	12.45	33.538	25.368	263.6	0.489	4.90	81.0					0.17	0.23	151	
164		11.51	11.49	33.535	25.547	246.8	0.525	4.60	74.5					0.13	0.16	165	208
197		10.04	10.02	33.686	25.923	211.3	0.601	3.95	62.0					0.02	0.05	198	207
200	ISL	9.90	9.88	33.707	25.963	207.5	0.607	3.89	60.9							201	
229		8.80	8.78	33.897	26.290	176.6	0.663	3.35	51.2							230	206
250	ISL	8.45	8.42	33.949	26.385	167.9	0.699	3.13	47.5							251	
269		8.26	8.23	33.967	26.428	164.0	0.730	2.98	45.0							270	205
300	ISL	7.83	7.80	34.017	26.531	154.6	0.780	2.76	41.3							302	
316		7.61	7.58	34.039	26.581	150.0	0.804	2.62	39.0							318	204
376		6.87	6.83	34.089	26.724	136.9	0.890	1.61	23.6							378	203
400	ISL	6.67	6.63	34.111	26.768	132.9	0.923	1.35	19.7							402	
436		6.44	6.40	34.144	26.825	127.9	0.970	1.05	15.2							439	202
500	ISL	6.08	6.04	34.205	26.920	119.5	1.049	0.64	9.2							503	
511		6.02	5.98	34.216	26.936	118.0	1.062	0.57	8.2							514	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 25.2 N	121 59.7 W	19/05/98	0323 UTC		330 22 kn	340 07 04	1	1018.9 mb	16.1 C	14.1 C		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	16.71	16.71	33.497	24.430	349.1	0.000	5.68	102.4					0.08	0.01	0	
2	16.71	16.71	33.497	24.430	349.1	0.007	5.68	102.4					0.08	0.01	2	220
10 ISL	16.71	16.71	33.498	24.431	349.3	0.035	5.66	102.0					0.08	0.01	10	
15	16.71	16.71	33.498	24.431	349.5	0.052	5.65	101.8					0.08	0.01	15	219
20 ISL	16.71	16.71	33.504	24.436	349.2	0.070	5.65	101.8					0.08	0.01	20	
29	16.70	16.70	33.516	24.448	348.3	0.101	5.65	101.8					0.09	0.01	29	218
30 ISL	16.64	16.64	33.512	24.459	347.3	0.105	5.66	101.9					0.09	0.01	30	
44	15.80	15.79	33.453	24.605	333.7	0.152	5.80	102.6					0.08	0.02	44	217
50 ISL	15.74	15.73	33.467	24.630	331.6	0.172	5.80	102.5					0.08	0.02	50	
62	15.62	15.61	33.468	24.658	329.3	0.212	5.79	102.1					0.10	0.03	62	216
75	15.59	15.58	33.522	24.706	325.1	0.255	5.75	101.3					0.13	0.04	75	215
85	15.71	15.70	33.580	24.724	323.7	0.287	5.72	101.1					0.16	0.05	85	214
93	15.81	15.80	33.648	24.755	321.1	0.313	5.67	100.4					0.18	0.08	93	213
100 ISL	15.79	15.77	33.705	24.803	316.7	0.335	5.61	99.4					0.26	0.17	100	
104	15.78	15.76	33.760	24.848	312.6	0.348	5.56	98.5					0.32	0.22	104	212
114	14.88	14.86	33.758	25.045	294.0	0.378	5.32	92.6					0.40	0.27	114	211
125 ISL	13.56	13.54	33.625	25.219	277.4	0.409	5.12	86.6					0.32	0.24	126	
126	13.45	13.43	33.613	25.232	276.2	0.412	5.11	86.3					0.31	0.24	127	210
138	12.63	12.61	33.599	25.385	261.8	0.444	4.99	82.8					0.24	0.22	139	209
150 ISL	11.72	11.70	33.602	25.560	245.3	0.475	4.77	77.6					0.16	0.17	151	
165	10.65	10.63	33.634	25.778	224.6	0.510	4.43	70.5					0.08	0.10	166	208
195	9.33	9.31	33.757	26.096	194.6	0.573	3.81	58.9					0.01	0.04	196	207
200 ISL	9.17	9.15	33.783	26.142	190.3	0.583	3.71	57.2							201	
230	8.42	8.40	33.922	26.368	169.1	0.637	3.21	48.7							231	206
250 ISL	8.08	8.05	33.965	26.453	161.2	0.670	3.07	46.2							251	
267	7.85	7.82	33.985	26.503	156.7	0.697	2.98	44.6							268	205
300 ISL	7.43	7.40	34.016	26.588	148.9	0.747	2.59	38.4							302	
317	7.24	7.21	34.027	26.624	145.7	0.772	2.36	34.9							319	204
379	6.57	6.54	34.070	26.749	134.3	0.859	1.68	24.4							381	203
400 ISL	6.39	6.35	34.090	26.788	130.8	0.887	1.42	20.6							402	
437	6.11	6.07	34.127	26.854	124.8	0.934	1.00	14.4							440	202
500 ISL	5.74	5.70	34.193	26.953	116.0	1.010	0.63	9.0							503	
528	5.58	5.54	34.223	26.996	112.1	1.042	0.47	6.7							531	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9805 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 39.7 W	19/05/98	1024 UTC	4008 m	340 17 kn			1019.9 mb	15.6 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	16.84	16.84	33.588	24.469	345.3	0.000	5.65	102.1					0.09	0.01	0	
1	16.84	16.84	33.588	24.469	345.3	0.003	5.65	102.1					0.09	0.01	1	220
10 ISL	16.84	16.84	33.589	24.470	345.5	0.035	5.65	102.1					0.09	0.01	10	
15	16.84	16.84	33.589	24.471	345.7	0.052	5.65	102.1					0.11U	-0.02 U	15	219
20 ISL	16.84	16.84	33.589	24.471	345.8	0.069	5.64	102.0					0.10	0.01	20	
29	16.85	16.85	33.588	24.468	346.4	0.100	5.63	101.8					0.10	0.01	29	218
30 ISL	16.88	16.88	33.607	24.476	345.7	0.104	5.63	101.9					0.10	0.01	30	
43	17.21	17.20	33.863	24.595	334.8	0.148	5.62	102.5					0.10	0.02	43	217
50 ISL	17.17	17.16	33.874	24.613	333.4	0.171	5.62	102.4					0.10	0.02	50	
58	17.12	17.11	33.872	24.623	332.6	0.198							0.10	0.02	58	216
73	16.72	16.71	33.817	24.676	328.1	0.248	5.64	101.8					0.12	0.04	73	215
75 ISL	16.65	16.64	33.804	24.682	327.5	0.254	5.64	101.7					0.13	0.04	75	
84	16.39	16.38	33.777	24.722	324.0	0.283	5.64	101.1					0.17	0.05	84	214
92	16.37	16.36	33.838	24.774	319.4	0.309	5.61	100.6					0.20	0.09	92	213
100 ISL	16.27	16.25	33.865	24.818	315.4	0.335	5.56	99.5					0.27	0.18	100	
103	16.20	16.18	33.867	24.835	313.8	0.344	5.54	99.0					0.30	0.21	103	212
114	15.62	15.60	33.841	24.946	303.5	0.378	5.41	95.6					0.40	0.30	114	211
124	14.71	14.69	33.758	25.082	290.7	0.408	5.26	91.2					0.31	0.24	125	210
125 ISL	14.61	14.59	33.749	25.096	289.4	0.411	5.25	90.8					0.30	0.24	126	
142	13.02	13.00	33.636	25.337	266.6	0.458	5.06	84.7					0.23	0.21	143	209
150 ISL	12.44	12.42	33.618	25.436	257.2	0.479	4.94	81.7					0.19	0.18	151	
164	11.55	11.53	33.620	25.605	241.2	0.514	4.71	76.4					0.11	0.13	165	208
191	10.02	10.00	33.703	25.940	209.6	0.575	4.33	68.0					0.02	0.05	192	207
200 ISL	9.65	9.63	33.745	26.034	200.6	0.593	4.11	64.0							201	
226	8.86	8.84	33.864	26.255	179.9	0.642	3.50	53.6							227	206
250 ISL	8.37	8.34	33.934	26.385	167.8	0.684	3.24	49.1							251	
265	8.12	8.09	33.964	26.447	162.1	0.709	3.12	47.0							266	205
300 ISL	7.51	7.48	34.007	26.570	150.7	0.764	2.69	40.0							302	
315	7.28	7.25	34.019	26.612	146.9	0.786	2.48	36.7							317	204
383	6.51	6.48	34.086	26.769	132.4	0.881	1.45	21.1							385	203
400 ISL	6.37	6.33	34.103	26.801	129.5	0.903	1.26	18.2							402	
438	6.09	6.05	34.140	26.867	123.6	0.951	0.92	13.2							441	202
500 ISL	5.73	5.69	34.191	26.953	116.0	1.026	0.62	8.8							503	
521	5.61	5.57	34.208	26.981	113.5	1.050	0.52	7.4							524	201

CalCOFI Cruise 9805

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 13.3	119 25.3	05/21	0919	0921	49	21	41	41
83	42	34 10.3	119 31.0	05/21	0710	0725	312	152	173	173
83	51	33 53.0	120 10.2	05/21	0029	0041	265	110	113	113
90	28	33 28.9	117 46.5	05/16	1927	1936	179	86	151	117
90	30	33 25.2	117 54.7	05/16	1647	1708	440	227	75	52
90	35	33 15.3	118 15.4	05/17	0030	0052	465	207	56	47
90	37	33 11.2	118 23.7	05/17	0429	0450	437	208	46	46
90	45	32 55.3	118 57.0	05/17	1043	1105	453	211	26	26
90	80	31 45.1	121 20.2	05/18	1335	1357	468	214	9	9
90	100	31 05.5	122 40.0	05/19	0406	0428	476	207	11	11

PERSONNEL

CalCOFI Cruise 9806

SHIP'S CAPTAIN

Louis H. Zimm, RV *Robert Gordon Sproul*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

Hayward, Thomas L. (Chief Scientist)	Research Oceanographer, SIO
Baiz, Shad L.	Resident Technician, SIO
Carver, Brian R.	Volunteer
Dotson, Ronald C.	Research Fishery Biologist, NMFS
Gruber, Dennis W.	Staff Research Associate, SIO
Hyrenbach, K. David	Graduate Student, SIO
Lopez, Leonard T.	Marine Technician, SIO
McGinnis, Jean L.	Staff Research Associate, SIO
Miller, Shanley R.	Volunteer
Orr, David T.	Volunteer
Ramirez, Fernando	Staff Research Associate, SIO
Swensen, Daryl L.	Biological Technician, NMFS

FIGURES

Cruise 9806

1. CalCOFI Cruise 9806, 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.

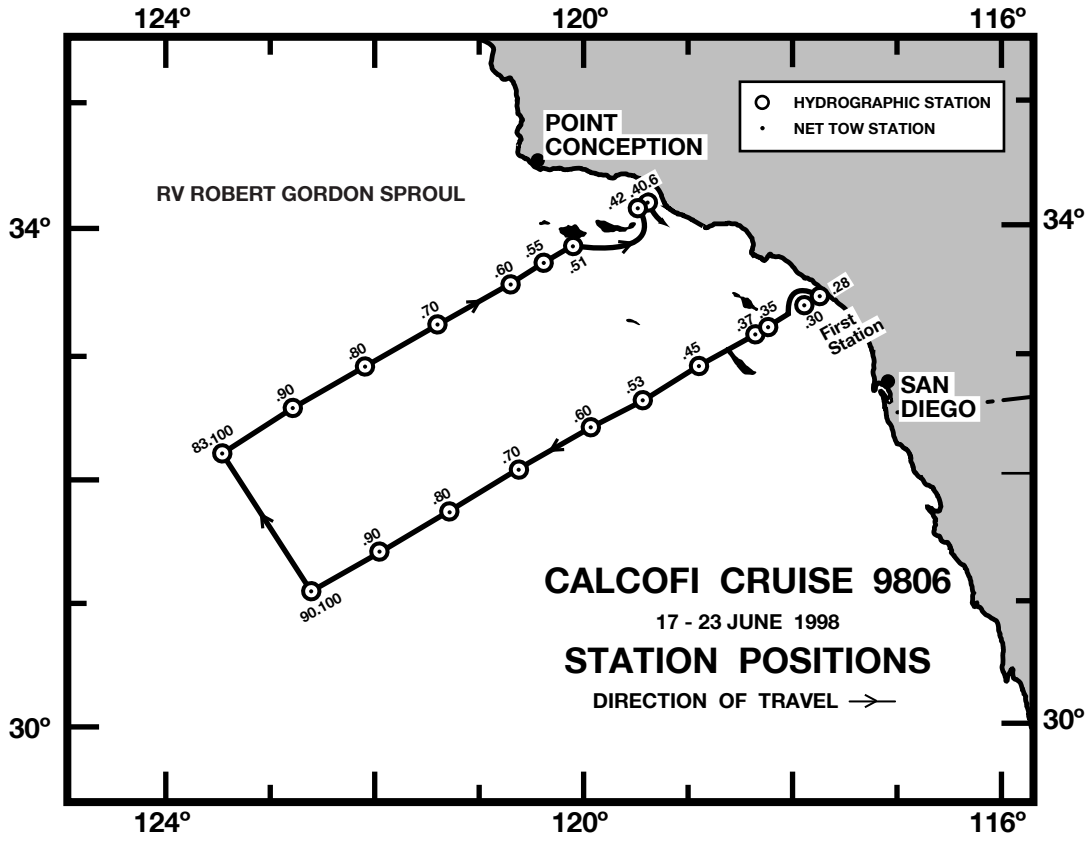


FIGURE 1

CALCOFI CRUISE 9806

17 - 19 JUNE 1998

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

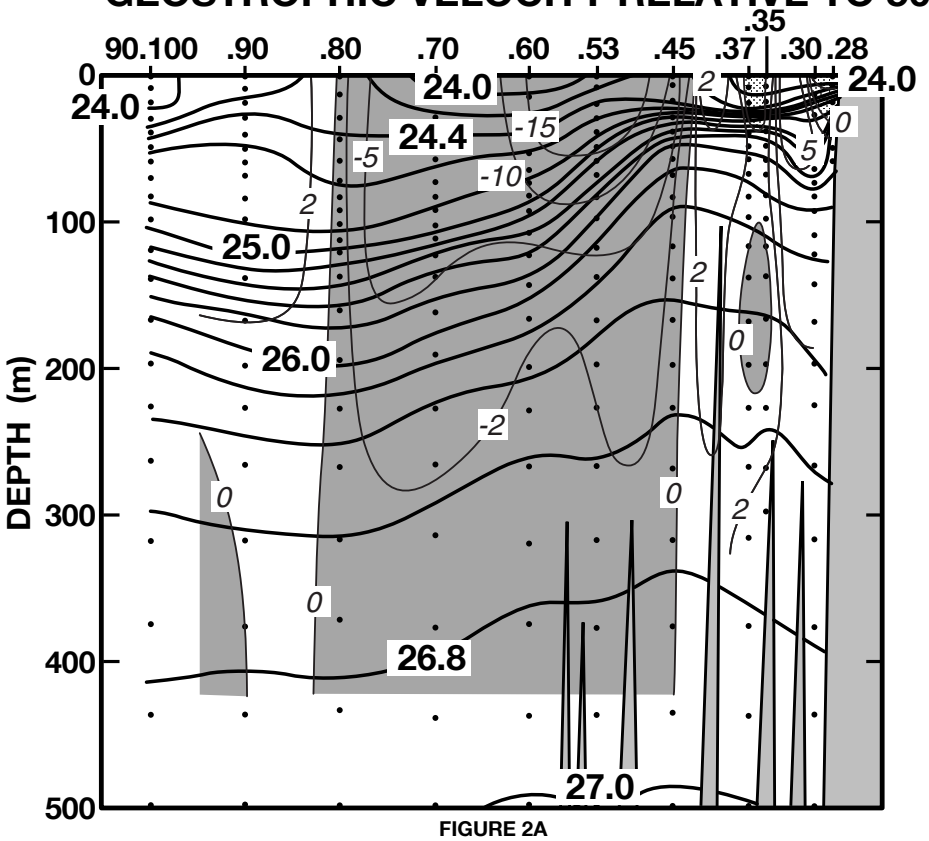


FIGURE 2A

CALCOFI CRUISE 9806

17 - 19 JUNE 1998

TEMPERATURE (°C) ALONG CALCOFI LINE 90

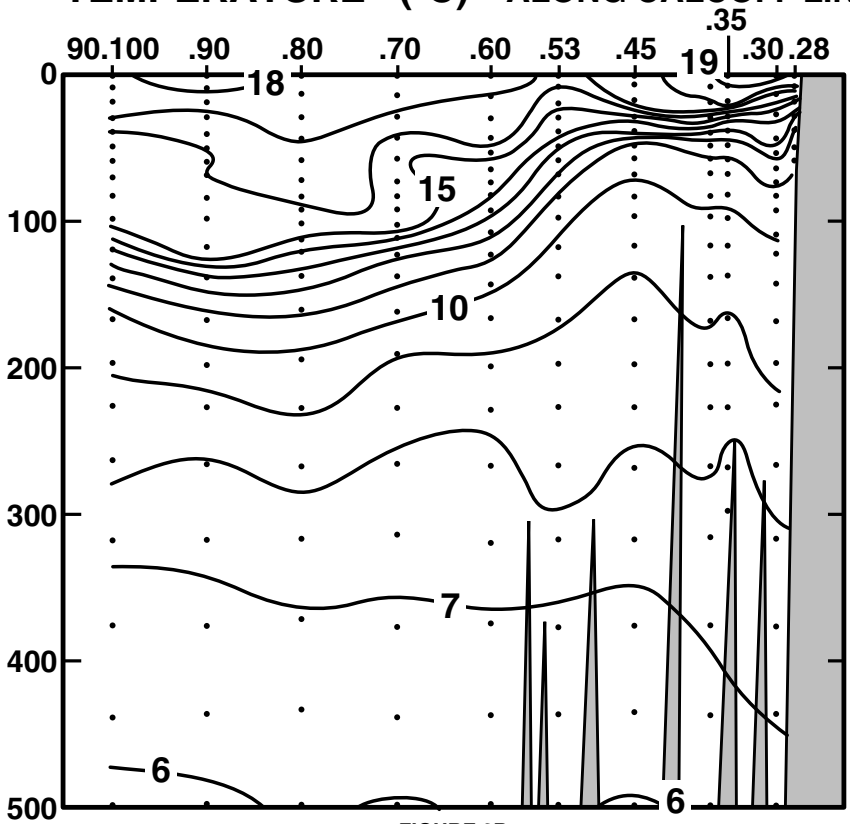


FIGURE 2B

SALINITY ALONG CALCOFI LINE 90

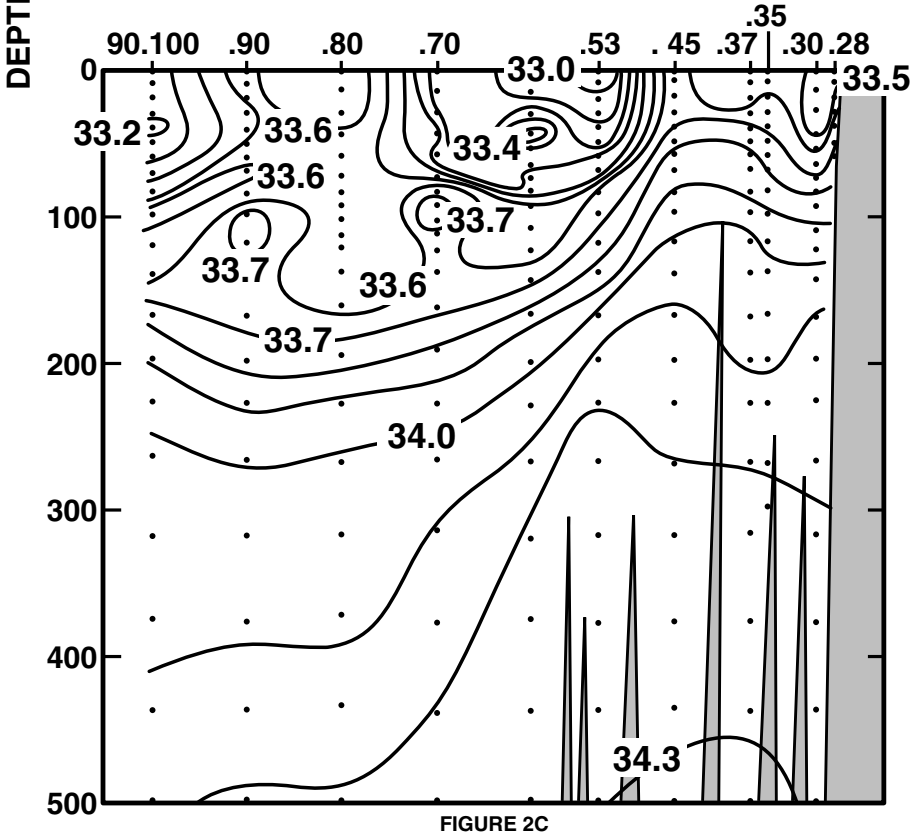


FIGURE 2C

CALCOFI CRUISE 9806

17 - 19 JUNE 1998

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

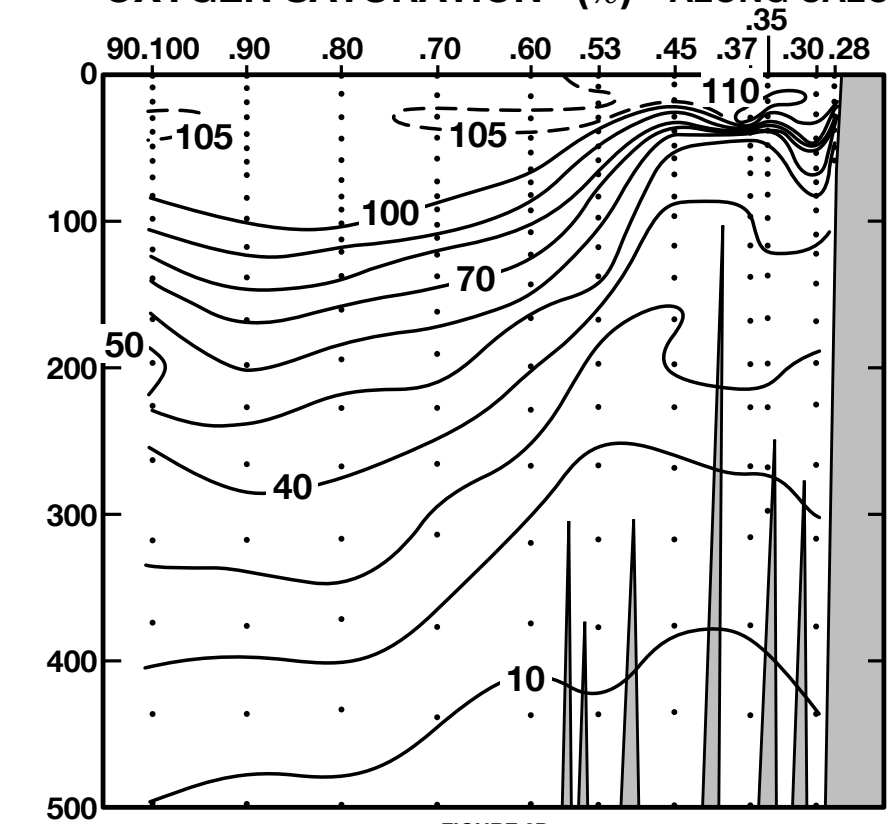


FIGURE 2D

OXYGEN (ml/l) ALONG CALCOFI LINE 90

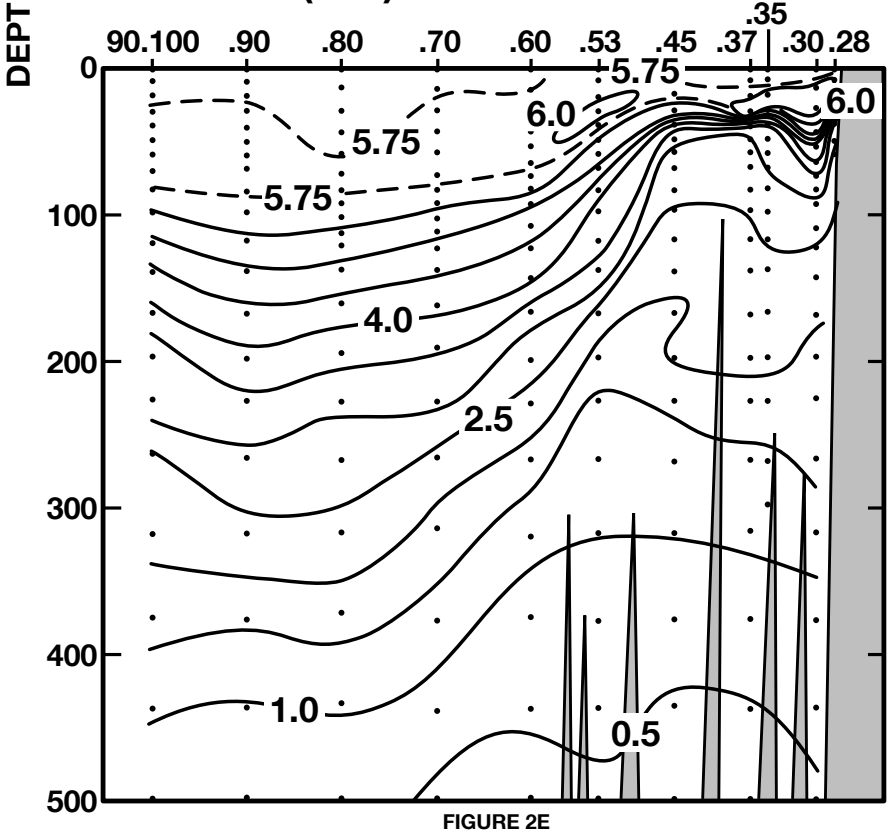


FIGURE 2E

CALCOFI CRUISE 9806

17 - 19 JUNE 1998

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

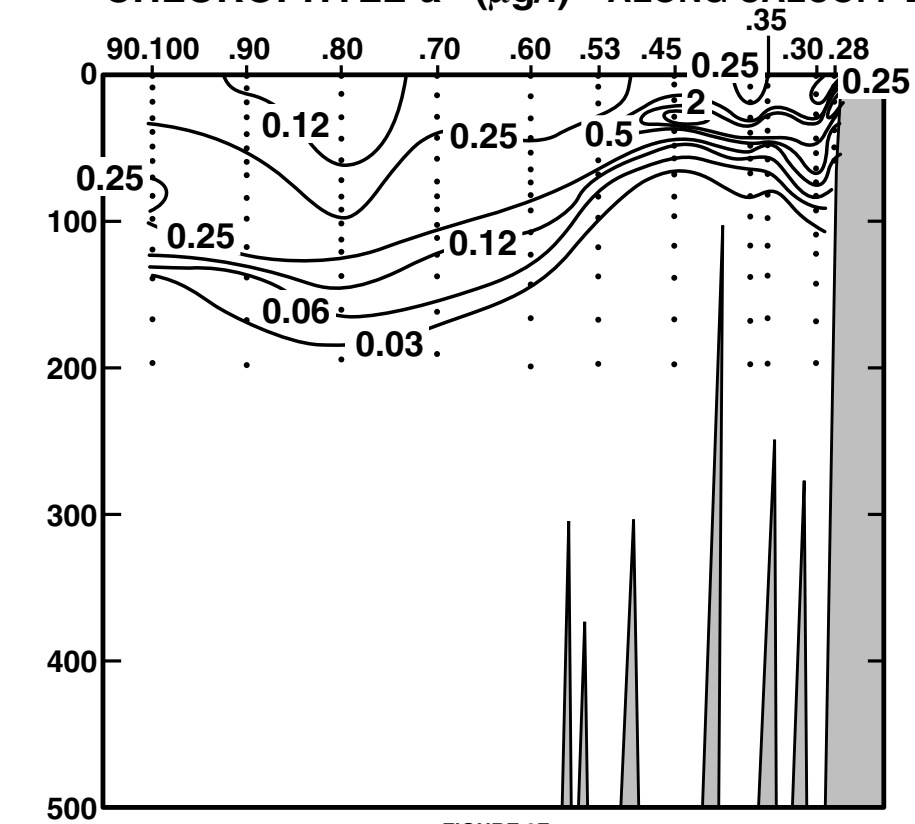


FIGURE 2F

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

DEPTH (m)

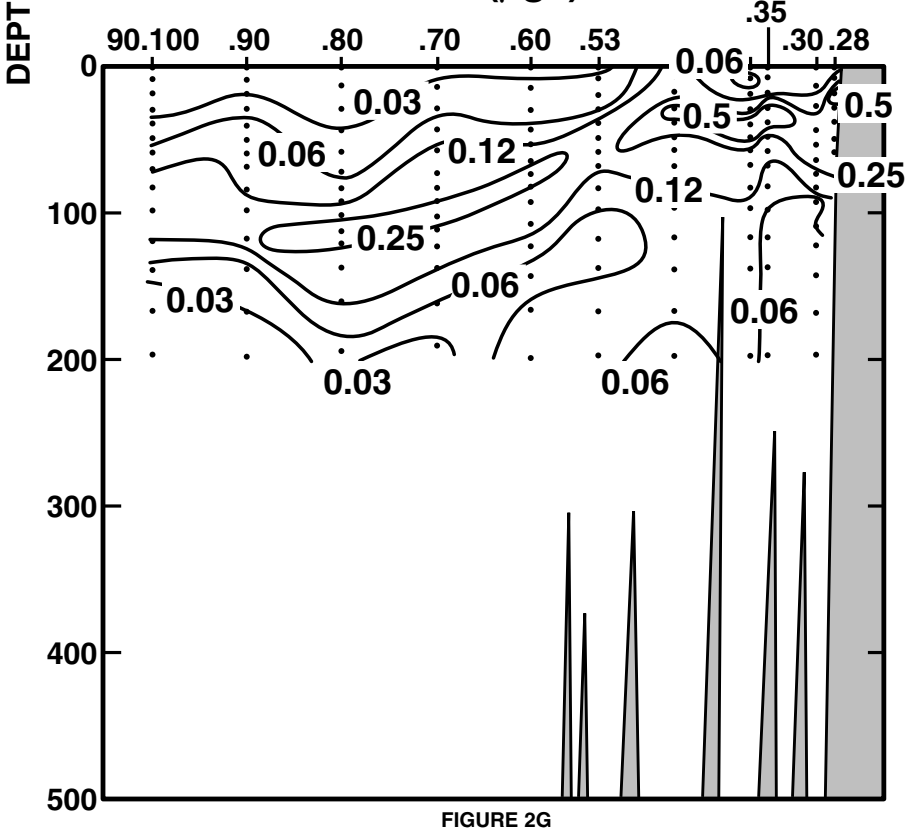


FIGURE 2G

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 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 24.7 W	22/06/98	1446 UTC	35 m	090 01 kn	310 01 06	1	1015.7 mb	16.0 C	18.3 C		2/8	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	17.39	17.39	33.609	24.355	356.2	0.000	6.21	113.5					0.68	0.22	0	
1	17.39	17.39	33.609	24.355	356.2	0.004	6.21	113.5					0.68	0.22	1	205
4	17.28	17.28	33.613	24.385	353.5	0.014	6.26	114.2					0.75	0.25	4	204
9	15.28	15.28	33.667	24.884	306.1	0.031	5.79	101.5					2.28	0.89	9	203
10 ISL	14.91	14.91	33.658	24.958	299.1	0.034	5.66	98.5					2.24	0.88	10	
20	12.40	12.40	33.554	25.391	258.1	0.062	4.54	75.0					1.89	0.81	20	202
26	12.24	12.24	33.565	25.430	254.5	0.077	4.25	70.0					1.51	0.75	26	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 10.4 N	119 30.5 W	22/06/98	1205 UTC	160 m	260 13 kn			1015.5 mb	16.1 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	16.69	16.69	33.693	24.585	334.3	0.000	6.17	111.3					0.47	0.15	0	
2	16.69	16.69	33.693	24.585	334.4	0.007	6.17	111.3					0.47	0.15	2	212
9	16.66	16.66	33.693	24.592	333.9	0.030	6.15	110.9					0.47	0.17	9	211
10 ISL	16.53	16.53	33.688	24.618	331.4	0.033	6.12	110.0					0.58	0.21	10	
19	14.97	14.97	33.645	24.935	301.5	0.062	5.70	99.3					1.51	0.56	19	210
20 ISL	14.82	14.82	33.644	24.967	298.5	0.065	5.63	97.8					1.50	0.55	20	
30	13.40	13.40	33.624	25.248	272.0	0.093	4.84	81.7					1.06	0.50	30	209
39	12.11	12.10	33.558	25.450	253.0	0.117	4.17	68.4					0.74	0.54	39	208
49	11.67	11.66	33.628	25.587	240.2	0.142	3.76	61.2					0.49	0.47	49	207
50 ISL	11.62	11.61	33.640	25.605	238.4	0.144	3.67	59.6					0.47	0.45	50	
60	11.19	11.18	33.758	25.776	222.4	0.167	2.81	45.3					0.25	0.26	60	206
70	10.86	10.85	33.806	25.873	213.4	0.189	2.67	42.7					0.09	0.20	70	205
75 ISL	10.70	10.69	33.826	25.917	209.4	0.199	2.67	42.6					0.07	0.17	75	
83	10.50	10.49	33.854	25.974	204.1	0.216	2.66	42.2					0.04	0.13	83	204
99	10.37	10.36	33.895	26.028	199.2	0.248	2.52	39.9					0.04	0.15	100	203
100 ISL	10.35	10.34	33.899	26.035	198.7	0.250	2.51	39.7					0.04	0.15	101	
118	9.90	9.89	33.968	26.166	186.5	0.285	2.39	37.5					0.02	0.11	119	202
125 ISL	9.86	9.85	33.978	26.180	185.3	0.298	2.36	37.0					0.02	0.11	126	
146	9.74	9.72	34.007	26.223	181.6	0.336	2.28	35.6					0.01	0.09	147	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 52.5 N	120 8.8 W	22/06/98	0423 UTC	114 m	320 20 kn			1016.3 mb	15.9 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	15.77	15.77	33.564	24.696	323.7	0.000	5.82	103.0					1.05	0.31	0	
2	15.77	15.77	33.564	24.696	323.8	0.006	5.82	103.0					1.05	0.31	2	210
10	15.44	15.44	33.560	24.767	317.3	0.032	5.80	102.0					1.13	0.13	10	209
20	14.29	14.29	33.545	25.004	295.0	0.063	5.49	94.3					1.02	0.22	20	208
30	12.19	12.19	33.567	25.442	253.5	0.090	4.33	71.2					1.03	0.22	30	207
39	12.19	12.18	33.575	25.448	253.2	0.113	4.30	70.7					1.00	0.34	39	206
49	12.15	12.14	33.594	25.471	251.3	0.138	4.28	70.3					0.98	0.28	49	205
50 ISL	12.07	12.06	33.602	25.492	249.2	0.141	4.22	69.2					0.98	0.29	50	
59	11.25	11.24	33.692	25.714	228.3	0.162	3.58	57.7					0.98	0.38	59	204
69	10.77	10.76	33.787	25.874	213.3	0.184	3.10	49.5					0.41	0.24	69	203
75 ISL	10.72	10.71	33.801	25.894	211.5	0.197	3.04	48.5					0.34	0.13	75	
85	10.64	10.63	33.823	25.925	208.8	0.218	2.95	47.0					0.22	0.02	85	202
100 ISL	10.47	10.46	33.850	25.976	204.2	0.249	2.84	45.1					0.22	0.24	101	
103	10.44	10.43	33.856	25.986	203.4	0.255	2.82	44.7					0.22	0.28	104	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 45.1 N	120 24.9 W	22/06/98	0034 UTC	1008 m	300 12 kn	300 06 05		1016.9 mb	18.7 C	16.8 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	16.58	16.58	33.557	24.506	341.8	0.000	5.86	105.4					0.30	0.11	0	
1		16.58	16.58	33.557	24.506	341.8	0.003	5.86	105.4					0.30	0.11	1	220
10		16.44	16.44	33.557	24.539	339.0	0.034	5.86	105.1					0.31	0.12	10	219
20		14.56	14.56	33.555	24.954	299.8	0.066	5.76	99.5					0.43	0.26	20	218
30		12.84	12.84	33.574	25.321	265.0	0.094	4.83	80.5					0.45	0.31	30	217
39		12.08	12.07	33.600	25.488	249.3	0.117	4.24	69.6					0.93	0.53	39	216
49		11.45	11.44	33.655	25.648	234.3	0.142	3.71	60.1					0.42	0.36	49	215
50	ISL	11.37	11.36	33.664	25.670	232.2	0.144	3.66	59.2					0.38	0.34	50	
59		10.77	10.76	33.746	25.842	216.1	0.164	3.25	51.9					0.15	0.18	59	214
69		10.65	10.64	33.778	25.888	211.9	0.185	3.11	49.5					0.09	0.19	69	213
75	ISL	10.54	10.53	33.803	25.927	208.4	0.198	3.02	48.0					0.07	0.18	75	
85		10.26	10.25	33.832	25.998	201.8	0.219	2.95	46.6					0.06	0.16	85	212
100		9.61	9.60	33.810	26.090	193.3	0.248	3.24	50.4					0.03	0.15	101	211
119		9.17	9.16	33.860	26.201	183.0	0.284	3.12	48.1					0.01	0.08	120	210
125	ISL	9.06	9.05	33.885	26.238	179.6	0.295	3.02	46.5					0.01	0.08	126	
139		8.87	8.86	33.947	26.317	172.4	0.319	2.76	42.3					0.01	0.09	140	209
150	ISL	8.82	8.80	33.985	26.354	169.0	0.338	2.60	39.8					0.01	0.09	151	
169		8.75	8.73	34.032	26.403	164.8	0.370	2.38	36.4					0.01	0.08	170	208
200		8.31	8.29	34.061	26.493	156.6	0.420	2.23	33.8					0.01	0.09	201	207
227		8.06	8.04	34.098	26.560	150.7	0.461	1.99	30.0							228	206
250	ISL	7.95	7.92	34.138	26.608	146.5	0.495	1.72	25.8							252	
269		7.89	7.86	34.171	26.643	143.5	0.523	1.49	22.4							271	205
300	ISL	7.76	7.73	34.217	26.699	138.7	0.567	1.16	17.4							302	
318		7.66	7.63	34.238	26.730	136.0	0.591	1.00	14.9							320	204
379		7.10	7.06	34.277	26.841	126.2	0.671	0.64	9.4							381	203
400	ISL	7.01	6.97	34.286	26.860	124.6	0.698	0.58	8.5							403	
438		6.87	6.83	34.294	26.886	122.6	0.745	0.53	7.8							441	202
500	ISL	6.32	6.27	34.285	26.953	116.7	0.819	0.47	6.8							504	
516		6.18	6.13	34.283	26.969	115.2	0.837	0.45	6.5							520	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 35.1 N	120 45.2 W	21/06/98	2016 UTC	1348 m	310 10 kn	310 06 05	2	1018.0 mb	18.4 C	15.2 C		8/8	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	16.36	16.36	33.545	24.547	337.9	0.000	5.82	104.2					0.27	0.12	0	
2		16.36	16.36	33.545	24.547	337.9	0.007	5.82	104.2					0.27	0.12	2	220
9		16.19	16.19	33.543	24.585	334.6	0.030	5.84	104.2					0.30	0.13	9	219
10	ISL	16.18	16.18	33.543	24.587	334.4	0.034	5.84	104.2					0.30	0.13	10	
19		16.06	16.06	33.542	24.614	332.1	0.064	5.85	104.1					0.29 A	0.13 A	19	218
20	ISL	15.99	15.99	33.541	24.629	330.7	0.067	5.85	104.0					0.30	0.14	20	
29		15.02	15.02	33.526	24.833	311.5	0.096	5.81	101.3					0.40	0.21	29	217
30	ISL	14.83	14.83	33.520	24.870	308.1	0.099	5.75	99.8					0.40	0.20	30	
40		13.07	13.06	33.501	25.220	275.0	0.128	5.02	84.0					0.42	0.14	40	216
49		12.52	12.51	33.560	25.373	260.6	0.152	4.61	76.3					0.40	0.23	49	215
50	ISL	12.48	12.47	33.565	25.385	259.5	0.155	4.58	75.8					0.41	0.25	50	
59		12.04	12.03	33.610	25.504	248.3	0.178	4.21	69.0					0.48	0.37	59	214
69		11.06	11.05	33.700	25.754	224.7	0.201	3.44	55.2					0.20	0.22	69	213
75	ISL	10.83	10.82	33.700	25.796	220.9	0.215	3.52	56.3					0.16	0.22	75	
84		10.64	10.63	33.687	25.819	218.8	0.234	3.63	57.8					0.10	0.23	84	212
99		9.96	9.95	33.778	26.007	201.2	0.266	3.22	50.5					0.04	0.17	99	211
100	ISL	9.91	9.90	33.782	26.018	200.1	0.268	3.22	50.5					0.04	0.17	101	
120		9.11	9.10	33.855	26.207	182.5	0.306	3.28	50.5					0.02	0.14	121	210
125	ISL	8.98	8.97	33.875	26.243	179.1	0.315	3.23	49.6					0.02	0.14	126	
138		8.73	8.72	33.922	26.319	172.1	0.338	3.06	46.7					0.02	0.13	139	209
150	ISL	8.52	8.50	33.954	26.377	166.8	0.358	2.94	44.7					0.02	0.11	151	
169		8.24	8.22	33.992	26.449	160.2	0.389	2.77	41.9					0.01	0.08	170	208
198		7.86	7.84	34.028	26.534	152.5	0.435	2.55	38.2					0.01	0.09	199	207
200	ISL	7.84	7.82	34.029	26.538	152.2	0.438	2.54	38.0							201	
228		7.68	7.66	34.056	26.583	148.4	0.480	2.30	34.3							229	206
250	ISL	7.73	7.71	34.117	26.624	144.9	0.512	1.82	27.2							251	
267		7.76	7.73	34.167	26.659	141.9	0.537	1.45	21.7							269	205
300	ISL	7.17	7.14	34.145	26.726	135.7	0.582	1.38	20.4							302	
316		6.84	6.81	34.126	26.756	132.9	0.604	1.34	19.6							318	204
376		6.48	6.45	34.167	26.837	125.9	0.682	0.96	13.9							378	203
400	ISL	6.28	6.24	34.178	26.872	122.8	0.711	0.84	12.1							403	
438		5.95	5.91	34.198	26.930	117.5	0.757	0.66	9.5							441	202
500	ISL	5.58	5.54	34.263	27.028	108.8	0.827	0.37	5.3							503	
513		5.50	5.46	34.277	27.048	106.9	0.841	0.31	4.4							517	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 9806 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 26.5 W	21/06/98	1339 UTC	3801 m	320 14 kn	320 06 08	2	1016.9 mb	17.0 C	14.1 C		8/8	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	16.75	16.75	33.034	24.065	383.8	0.000	5.75	103.4					0.19	0.04	0	
2		16.75	16.75	33.034	24.065	383.9	0.008	5.75	103.4					0.19	0.04	2	221
10	ISL	16.70	16.70	33.033	24.076	383.1	0.038	5.74	103.1					0.18	0.05	10	
14		16.68	16.68	33.033	24.081	382.8	0.054	5.74	103.1					0.18	0.05	14	220
20	ISL	16.38	16.38	33.023	24.143	377.1	0.076	5.80	103.5					0.21	0.05	20	
29		15.81	15.81	33.017	24.267	365.5	0.110	5.91	104.3					0.28	0.06	29	219
30	ISL	15.75	15.75	33.019	24.282	364.1	0.114	5.92	104.4					0.28	0.06	30	
44		14.98	14.97	33.065	24.487	344.9	0.163	5.98	103.8					0.35	0.11	44	218
50	ISL	14.77	14.76	33.084	24.547	339.4	0.184	5.98	103.4					0.39	0.16	50	
54		14.64	14.63	33.096	24.584	336.0	0.197	5.98	103.1					0.41	0.20	54	217
65		14.14	14.13	33.122	24.710	324.3	0.234	5.84	99.7					0.43	0.35	65	216
73		13.74	13.73	33.130	24.799	316.0	0.259	5.70	96.5					0.30	0.25	73	215
75	ISL	13.68	13.67	33.143	24.821	313.9	0.265	5.66	95.7					0.26	0.22	75	
83		13.43	13.42	33.199	24.915	305.1	0.290	5.50	92.6					0.14	0.12	83	214
95		12.64	12.63	33.220	25.088	288.9	0.326	5.26	87.1					0.10	0.10	95	213
100	ISL	12.48	12.47	33.274	25.161	282.1	0.340	5.12	84.5					0.08	0.08	100	
108		12.27	12.26	33.372	25.277	271.2	0.362	4.87	80.1					0.06	0.05	108	212
123		11.51	11.49	33.486	25.508	249.5	0.401	4.42	71.6					0.04	0.05	124	211
125	ISL	11.43	11.41	33.502	25.535	246.9	0.406	4.36	70.5					0.04	0.05	126	
144		10.71	10.69	33.644	25.775	224.4	0.451	3.92	62.4					0.02	0.04	145	210
150	ISL	10.45	10.43	33.683	25.850	217.3	0.464	3.84	60.8					0.02	0.04	151	
167		9.77	9.75	33.782	26.043	199.2	0.500	3.65	57.0					0.01	0.04	168	209
198		9.20	9.18	33.901	26.229	181.9	0.559	3.24	50.0					0.00	0.03	199	208
200	ISL	9.17	9.15	33.905	26.237	181.2	0.562	3.23	49.8							201	
227		8.82	8.80	33.967	26.342	171.7	0.610	2.92	44.7							228	207
250	ISL	8.88	8.85	34.085	26.425	164.3	0.649	2.14	32.8							251	
268		8.93	8.90	34.173	26.487	158.9	0.678	1.54	23.7							269	206
300	ISL	8.49	8.46	34.202	26.578	150.6	0.727	1.44	21.9							302	
316		8.21	8.18	34.198	26.618	147.0	0.751	1.39	21.0							318	204
376		7.57	7.53	34.239	26.745	135.6	0.836	0.97	14.5							378	203
400	ISL	7.40	7.36	34.250	26.778	132.7	0.868	0.86	12.8							402	
438		7.11	7.07	34.261	26.828	128.4	0.918	0.72	10.6							441	202
500	ISL	6.33	6.28	34.262	26.933	118.5	0.994	0.56	8.1							503	
510		6.20	6.15	34.263	26.951	116.9	1.006	0.54	7.8							513	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.7 N	122 7.7 W	21/06/98	0707 UTC	4192 m	310 14 kn			1018.0 mb	17.1 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	ISL	17.17	17.17	33.086	24.007	389.4	0.000	5.67	102.8					0.13	0.02	0	
1		17.17	17.17	33.086	24.007	389.4	0.004	5.67	102.8					0.13	0.02	1	220
10	ISL	17.18	17.18	33.087	24.005	389.8	0.039	5.70	103.4					0.16	0.02	10	
15		17.18	17.18	33.087	24.006	390.0	0.058	5.73	104.0					0.17	0.02	15	219
20	ISL	17.07	17.07	33.210	24.126	378.7	0.078	5.77	104.5					0.15	0.02	20	
29		16.77	16.77	33.417	24.355	357.1	0.111	5.84	105.3					0.11	0.02	29	218
30	ISL	16.72	16.72	33.413	24.364	356.3	0.114	5.84	105.2					0.11	0.02	30	
44		16.02	16.01	33.308	24.444	349.1	0.164	5.88	104.4					0.13	0.01	44	217
50	ISL	15.81	15.80	33.348	24.522	341.8	0.184	5.89	104.2					0.15	0.03	50	
59		15.61	15.60	33.440	24.638	331.1	0.215	5.91	104.2					0.19	0.06	59	216
75		15.63	15.62	33.550	24.719	323.9	0.267	5.75	101.4					0.28	0.05	75	215
84		16.08	16.07	33.770	24.787	317.7	0.296	5.70	101.6					0.34	0.14	84	214
93		16.17	16.16	33.847	24.826	314.3	0.324	5.67	101.3					0.36	0.18	93	213
100	ISL	15.84	15.82	33.828	24.887	308.8	0.346	5.62	99.7					0.33	0.24	100	
105		15.47	15.45	33.794	24.943	303.5	0.362	5.56	97.9					0.29	0.28	105	212
114		14.73	14.71	33.735	25.060	292.6	0.388	5.43	94.2					0.24	0.25	114	211
124		13.80	13.78	33.665	25.201	279.2	0.417	5.28	89.8					0.24	0.23	125	210
125	ISL	13.68	13.66	33.660	25.222	277.2	0.420	5.26	89.2					0.23	0.23	126	
137		12.31	12.29	33.631	25.471	253.5	0.452	4.99	82.3					0.14	0.19	138	209
150	ISL	11.31	11.29	33.637	25.662	235.4	0.483	4.70	75.8					0.09	0.13	151	
163		10.59	10.57	33.666	25.813	221.2	0.513	4.43	70.4					0.06	0.07	164	208
194		9.28	9.26	33.810	26.145	189.9	0.577	3.87	59.8					0.01	0.02	195	207
200	ISL	9.13	9.11	33.835	26.189	185.8	0.588	3.81	58.7							201	
228		8.61	8.59	33.928	26.344	171.4	0.638	3.56	54.2							229	206
250	ISL	8.23	8.20	33.977	26.440	162.5	0.675	3.15	47.6							251	
267		7.96	7.93	34.003	26.501	156.9	0.702	2.83	42.5							268	205
300	ISL	7.47	7.44	34.024	26.589	148.9	0.752	2.52	37.4							302	
316		7.25	7.22	34.028	26.623	145.8	0.776	2.40	35.5							318	204
379		6.55	6.52	34.067	26.749	134.3	0.864	1.60	23.3							381	203
400	ISL	6.36	6.32	34.082	26.786	130.9	0.892	1.38	20.0							402	
437		6.07	6.03	34.112	26.847	125.4	0.939	1.05	15.1							440	202
500	ISL	5.71	5.67	34.171	26.939	117.2	1.016	0.67	9.6							503	
510		5.65	5.61	34.181	26.954	115.9	1.028	0.61	8.7							513	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 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 48.7 W	21/06/98	0021	UTC	4263 m	330	13 kn	330 08 07	2	1017.2 mb	17.9 C	15.0 C		8/8	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	17.47	17.47	33.444	24.210	370.0	0.000	5.62	102.8					0.09	0.01	0	
2		17.47	17.47	33.444	24.210	370.1	0.007	5.62	102.8					0.09	0.01	2	220
10		17.46	17.46	33.446	24.214	370.0	0.037	5.62	102.7					0.09	0.02	10	219
20		17.37	17.37	33.439	24.231	368.7	0.074	5.61	102.4					0.10	0.01	20	218
30		17.07	17.07	33.416	24.284	363.9	0.111	5.68	103.0					0.12	0.02	30	217
39		16.17	16.16	33.382	24.467	346.8	0.143	5.88	104.8					0.12	0.02	39	216
50		15.98	15.97	33.485	24.590	335.4	0.180	5.86	104.1					0.14	0.03	50	215
58		15.84	15.83	33.527	24.654	329.6	0.207	5.85	103.6					0.15	0.04	58	214
70		15.84	15.83	33.607	24.716	324.1	0.246	5.79	102.6					0.17	0.05	70	213
75	ISL	15.89	15.88	33.644	24.733	322.6	0.262	5.77	102.4					0.19	0.07	75	
85		15.95	15.94	33.726	24.783	318.2	0.294	5.71	101.5					0.24	0.10	85	212
100		15.70	15.68	33.876	24.955	302.2	0.341	5.51	97.5					0.31	0.31	100	211
119		14.05	14.03	33.739	25.207	278.6	0.396	5.22	89.3					0.22	0.25	120	210
125	ISL	13.54	13.52	33.713	25.292	270.6	0.412	5.15	87.2					0.19	0.23	126	
139		12.41	12.39	33.675	25.486	252.2	0.449	4.95	81.8					0.14	0.18	140	209
150	ISL	11.58	11.56	33.648	25.621	239.4	0.476	4.68	76.0					0.11	0.14	151	
169		10.40	10.38	33.645	25.830	219.7	0.520	4.21	66.6					0.06	0.07	170	208
198		9.39	9.37	33.791	26.113	193.1	0.579	3.82	59.2					0.01	0.03	199	207
200	ISL	9.32	9.30	33.802	26.133	191.2	0.583	3.79	58.6							201	
227		8.57	8.55	33.949	26.366	169.3	0.632	3.29	50.1							228	206
250	ISL	8.36	8.33	34.030	26.462	160.5	0.670	2.72	41.2							251	
265		8.30	8.27	34.065	26.499	157.3	0.694	2.37	35.9							266	205
300	ISL	7.94	7.91	34.102	26.582	149.9	0.747	2.03	30.5							302	
317		7.75	7.72	34.109	26.616	146.9	0.773	1.93	28.9							319	204
377		7.12	7.08	34.163	26.748	134.9	0.857	1.26	18.6							379	203
400	ISL	6.89	6.85	34.173	26.788	131.3	0.888	1.08	15.8							402	
437		6.55	6.51	34.187	26.844	126.2	0.935	0.86	12.5							440	202
500	ISL	6.17	6.13	34.236	26.933	118.4	1.012	0.56	8.1							503	
517		6.07	6.02	34.250	26.957	116.2	1.032	0.48	6.9							520	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 14.4 N	123 29.8 W	20/06/98	1744	UTC	4163 m	320	13 kn	330 04 06	2	1019.0 mb	17.8 C	15.0 C		8/8	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	17.46	17.46	33.392	24.172	373.6	0.000	5.68	103.8					0.15	0.03	0	
1		17.46	17.46	33.392	24.172	373.6	0.004	5.68	103.8					0.15	0.03	1	221
10	ISL	17.45	17.45	33.391	24.174	373.8	0.037	5.64	103.0					0.14	0.03	10	
14		17.45	17.45	33.391	24.175	373.9	0.052	5.62	102.7					0.14	0.03	14	220
20	ISL	17.45	17.45	33.391	24.175	374.1	0.075	5.63	102.9					0.14	0.03	20	
29		17.44	17.44	33.390	24.177	374.2	0.108	5.64	103.0					0.15	0.03	29	219
30	ISL	17.34	17.34	33.377	24.191	372.9	0.112	5.66	103.2					0.15	0.03	30	
44		15.79	15.78	33.227	24.434	350.1	0.163	5.92	104.6					0.19	0.04	44	218
50	ISL	15.66	15.65	33.277	24.501	343.8	0.184	5.93	104.5					0.19	0.04	50	
60		15.44	15.43	33.322	24.585	336.1	0.218	5.94	104.3					0.19	0.05	60	217
74		15.27	15.26	33.372	24.661	329.3	0.264	5.86	102.5					0.23	0.08	74	216
75	ISL	15.26	15.25	33.373	24.664	329.0	0.267	5.86	102.5					0.23	0.08	75	
84		15.20	15.19	33.391	24.692	326.7	0.297	5.82	101.7					0.24	0.12	84	215
94		15.22	15.21	33.477	24.754	321.1	0.329	5.70	99.7					0.31	0.29	94	214
100	ISL	15.15	15.13	33.502	24.789	318.0	0.349	5.64	98.5					0.33	0.33	100	
105		15.09	15.07	33.550	24.839	313.3	0.364	5.56	97.0					0.35	0.37	105	213
115		14.14	14.12	33.569	25.056	292.8	0.395	5.17	88.5					0.25	0.23	115	212
125		13.18	13.16	33.528	25.221	277.2	0.423	4.91	82.4					0.19	0.18	126	211
138		12.27	12.25	33.536	25.405	259.8	0.458	4.63	76.2					0.13	0.12	139	210
150	ISL	11.55	11.53	33.570	25.566	244.6	0.488	4.36	70.7					0.09	0.09	151	
163		10.89	10.87	33.628	25.731	229.1	0.519	4.03	64.4					0.05	0.06	164	209
193		9.79	9.77	33.821	26.071	197.1	0.583	3.13	48.9					0.00	0.02	194	208
200	ISL	9.62	9.60	33.858	26.128	191.8	0.597	3.00	46.7							201	
229		9.07	9.05	33.980	26.313	174.7	0.650	2.63	40.5							230	207
250	ISL	8.73	8.70	34.033	26.408	165.9	0.686	2.47	37.7							251	
266		8.50	8.47	34.061	26.466	160.6	0.712	2.36	35.9							267	206
300	ISL	8.10	8.07	34.112	26.566	151.5	0.765	2.03	30.6							302	
317		7.92	7.89	34.131	26.608	147.7	0.790	1.85	27.8							319	204
376		7.29	7.25	34.172	26.731	136.6	0.874	1.27	18.8							378	203
400	ISL	7.06	7.02	34.190	26.778	132.4	0.906	1.07	15.7							402	
436		6.75	6.71	34.216	26.841	126.7	0.953	0.82	12.0							439	202
500	ISL	6.28	6.24	34.246	26.927	119.1	1.032	0.55	8.0							503	
515		6.17	6.12	34.253	26.947	117.3	1.049	0.49	7.1							518	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 28.9 N	117 46.0 W	18/06/98	0225 UTC	67 m	220 05 kn	220 01 06	0	1015.5 mb	19.8 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	18.95	18.95	33.496	23.886	400.9	0.000	5.66	106.5					0.17	0.05	0	
1		18.95	18.95	33.496	23.886	401.0	0.004	5.66	106.5					0.17	0.05	1	207
9		17.55	17.55	33.492	24.228	368.6	0.035	6.00	109.9					0.60	0.16	9	206
10	ISL	17.26	17.26	33.490	24.296	362.2	0.038	5.98	108.9					0.86	0.22	10	
19		14.51	14.51	33.511	24.931	301.9	0.068	5.84	100.7					2.71	0.66	19	205
20	ISL	14.24	14.24	33.517	24.992	296.1	0.071	5.66	97.1					2.58	0.65	20	
29		12.38	12.38	33.589	25.422	255.4	0.096	3.92	64.7					0.85	0.44	29	204
30	ISL	12.27	12.27	33.598	25.450	252.7	0.099	3.80	62.6					0.77	0.43	30	
39		11.66	11.66	33.665	25.617	237.0	0.121	3.11	50.6					0.40	0.37	39	203
50		11.44	11.43	33.696	25.682	231.1	0.146	3.00	48.6					0.29	0.49	50	202
59		11.19	11.18	33.734	25.757	224.2	0.167	2.80	45.1					0.24	0.37	59	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 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	17/06/98	2252 UTC	619 m	220 08 kn	220 01 06	0	1015.1 mb	19.9 C	17.4 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.16	19.16	33.496	23.833	406.0	0.000	5.69	107.5					0.26	0.06	0	
1		19.16	19.16	33.496	23.833	406.0	0.004	5.69	107.5					0.26	0.06	1	220
10	ISL	17.75	17.75	33.467	24.160	375.1	0.039	5.91	108.7					0.21	0.07	10	
14		16.79	16.79	33.457	24.381	354.2	0.054	6.04	109.0					0.20	0.07	14	219
20	ISL	15.59	15.59	33.447	24.647	329.0	0.074	6.05	106.6					0.28	0.11	20	
28		14.24	14.24	33.453	24.943	301.0	0.099	6.07	104.1					0.46	0.19	28	218
30	ISL	14.13	14.13	33.454	24.967	298.8	0.105	6.00	102.6					0.57	0.23	30	
44		13.45	13.44	33.488	25.133	283.3	0.146	5.51	93.0					1.06	0.39	44	217
50	ISL	12.62	12.61	33.550	25.346	263.2	0.163	4.67	77.5					0.83	0.33	50	
54		12.10	12.09	33.593	25.479	250.5	0.173	4.15	68.1					0.65	0.29	54	216
65		11.85	11.84	33.619	25.547	244.4	0.200	3.99	65.1					0.55	0.29	65	215
74		11.11	11.10	33.705	25.750	225.3	0.221	3.43	55.1					0.31	0.22	74	214
75	ISL	11.05	11.04	33.714	25.767	223.6	0.224	3.39	54.4					0.29	0.21	75	
84		10.63	10.62	33.784	25.896	211.5	0.243	3.11	49.5					0.11	0.16	84	213
94		10.32	10.31	33.853	26.004	201.4	0.264	2.87	45.4					0.05	0.05	94	212
100	ISL	10.21	10.20	33.878	26.042	197.9	0.276	2.78	43.9					0.03	0.05	100	
110		10.08	10.07	33.914	26.093	193.3	0.295	2.65	41.7					0.02	0.06	111	211
123		9.93	9.92	33.980	26.170	186.2	0.320	2.45	38.5					0.01	0.05	124	210
125	ISL	9.91	9.90	33.985	26.177	185.6	0.324	2.44	38.3					0.01	0.05	126	
143		9.73	9.71	34.019	26.234	180.5	0.357	2.36	36.9					0.01	0.04	144	209
150	ISL	9.67	9.65	34.041	26.262	178.1	0.369	2.28	35.6					0.01	0.04	151	
169		9.53	9.51	34.101	26.332	171.8	0.402	2.04	31.8					0.01	0.05	170	208
198		9.28	9.26	34.142	26.405	165.4	0.451	1.90	29.4					0.01	0.05	199	207
200	ISL	9.25	9.23	34.145	26.412	164.7	0.455	1.88	29.1							201	
227		8.76	8.74	34.183	26.520	154.8	0.498	1.69	25.9							228	206
250	ISL	8.42	8.39	34.177	26.568	150.5	0.533	1.68	25.5							251	
267		8.22	8.19	34.170	26.594	148.4	0.558	1.67	25.2							269	205
300	ISL	7.98	7.95	34.203	26.656	142.9	0.606	1.37	20.6							302	
317		7.87	7.84	34.224	26.689	140.1	0.630	1.19	17.9							319	204
378		7.28	7.24	34.248	26.793	130.8	0.713	0.84	12.4							380	203
400	ISL	7.18	7.14	34.255	26.813	129.2	0.742	0.77	11.4							403	
437		7.04	7.00	34.266	26.841	127.0	0.789	0.67	9.9							440	202
500	ISL	6.58	6.53	34.292	26.924	119.7	0.867	0.45	6.6							503	
531		6.35	6.30	34.306	26.966	116.0	0.903	0.34	4.9							535	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 15.3 N	118 15.7 W	18/06/98	0702 UTC	301 m	290 06 kn			1016.1 mb	18.5 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	19.12	19.12	33.595	23.918	397.8	0.000	5.61	106.0					0.26	0.07	0	
1		19.12	19.12	33.595	23.918	397.9	0.004	5.61	105.9					0.26	0.07	1	217
8		18.95	18.95	33.598	23.964	393.8	0.032	5.66	106.6					0.26	0.07	8	216
10	ISL	18.85	18.85	33.601	23.992	391.2	0.040	5.77	108.4					0.28	0.08	10	
19		18.39	18.39	33.617	24.119	379.4	0.074	6.08	113.3					0.38	0.12	19	215
20	ISL	18.02	18.02	33.616	24.209	370.8	0.078	6.06	112.1					0.51	0.17	20	
29		14.40	14.40	33.663	25.072	288.8	0.108	5.40	93.0					1.56	0.60	29	214
30	ISL	14.14	14.14	33.665	25.128	283.5	0.111	5.20	89.1					1.51	0.60	30	
39		12.44	12.43	33.680	25.482	250.0	0.135	3.49	57.7					1.07	0.58	39	213
49		11.28	11.27	33.751	25.754	224.3	0.158	3.07	49.6					0.19	0.24	49	212
50	ISL	11.21	11.20	33.750	25.766	223.1	0.160	3.08	49.6					0.18	0.23	50	
59		10.77	10.76	33.742	25.839	216.4	0.180	3.25	51.9					0.11	0.18	59	211
69		10.54	10.53	33.798	25.923	208.6	0.201	3.05	48.5					0.04	0.11	69	210
75	ISL	10.41	10.40	33.817	25.960	205.2	0.214	2.99	47.4					0.03	0.09	75	
83		10.23	10.22	33.838	26.008	200.8	0.230	2.94	46.4					0.02	0.08	83	209
99		9.76	9.75	33.903	26.138	188.7	0.261	2.82	44.1					0.02	0.06	99	208
100	ISL	9.74	9.73	33.906	26.144	188.2	0.263	2.81	43.9					0.02	0.06	101	
118		9.47	9.46	33.959	26.230	180.4	0.296	2.58	40.1					0.01	0.05	119	207
125	ISL	9.37	9.36	33.988	26.269	176.8	0.309	2.48	38.4					0.01	0.05	126	
138		9.19	9.17	34.037	26.336	170.6	0.331	2.32	35.8					0.01	0.05	139	206
150	ISL	9.05	9.03	34.054	26.372	167.4	0.352	2.26	34.8					0.01	0.05	151	
167		8.87	8.85	34.063	26.408	164.3	0.380	2.21	33.9					0.01	0.04	168	205
198		8.58	8.56	34.092	26.476	158.3	0.430	2.09	31.8					0.01	0.04	199	204
200	ISL	8.55	8.53	34.094	26.483	157.7	0.433	2.08	31.7							201	
228		8.11	8.09	34.126	26.575	149.3	0.476	1.87	28.2							229	203
250	ISL	7.87	7.84	34.160	26.637	143.7	0.508	1.60	24.0							251	
269		7.72	7.69	34.188	26.681	139.8	0.535	1.37	20.5							271	202
299		7.57	7.54	34.218	26.727	135.9	0.577	1.12	16.7							301	201

RV ROBERT GORDON SPROUL | CALCOFI CRUISE 9806 | 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	18/06/98	0950 UTC	1177 m	280 06 kn			1015.9 mb	17.7 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	18.84	18.84	33.528	23.938	396.0	0.000	5.66	106.3					0.17	0.06	0	
1		18.84	18.84	33.528	23.938	396.0	0.004	5.66	106.3					0.17	0.06	1	220
9		18.59	18.59	33.514	23.990	391.3	0.035	5.73	107.1					0.17	0.05	9	219
10	ISL	18.57	18.57	33.512	23.994	391.0	0.039	5.74	107.2					0.17	0.05	10	
19		17.98	17.98	33.507	24.136	377.8	0.074	5.92	109.3					0.25	0.08	19	218
20	ISL	17.79	17.79	33.514	24.187	372.9	0.078	5.96	109.7					0.27	0.09	20	
30		15.33	15.33	33.613	24.832	311.7	0.112	6.33	111.1					0.46	0.19	30	217
40		12.69	12.68	33.717	25.462	251.9	0.140	3.37	56.0					1.54	0.98	40	216
49		11.61	11.60	33.784	25.719	227.6	0.162	2.81	45.7					0.39	0.60	49	215
50	ISL	11.52	11.51	33.788	25.739	225.7	0.164	2.81	45.6					0.36	0.55	50	
59		10.87	10.86	33.814	25.877	212.8	0.184	2.82	45.1					0.10	0.23	59	214
68		10.51	10.50	33.826	25.950	206.0	0.203	2.88	45.7					0.05	0.16	68	213
75	ISL	10.33	10.32	33.853	26.002	201.2	0.217	2.82	44.6					0.04	0.13	75	
84		10.14	10.13	33.895	26.067	195.2	0.235	2.69	42.4					0.03	0.12	84	212
98		9.83	9.82	33.950	26.163	186.4	0.261	2.55	39.9					0.02	0.12	98	211
100	ISL	9.81	9.80	33.959	26.173	185.4	0.265	2.52	39.4					0.02	0.12	101	
118		9.63	9.62	34.032	26.261	177.5	0.298	2.29	35.7					0.01	0.09	119	210
125	ISL	9.53	9.52	34.055	26.295	174.3	0.310	2.22	34.6					0.01	0.08	126	
139		9.33	9.31	34.089	26.355	168.9	0.334	2.11	32.7					0.01	0.08	140	209
150	ISL	9.22	9.20	34.100	26.381	166.6	0.353	2.10	32.5					0.01	0.08	151	
169		9.03	9.01	34.101	26.413	164.0	0.384	2.08	32.0					0.01	0.09	170	208
199		8.57	8.55	34.087	26.474	158.5	0.432	2.14	32.6					0.01	0.09	200	207
200	ISL	8.56	8.54	34.088	26.476	158.3	0.434	2.13	32.4							201	
228		8.42	8.40	34.137	26.537	153.1	0.477	1.85	28.1							229	206
250	ISL	8.26	8.23	34.173	26.590	148.4	0.511	1.60	24.2							251	
268		8.12	8.09	34.198	26.630	144.8	0.537	1.41	21.3							270	205
300	ISL	7.89	7.86	34.226	26.687	139.9	0.583	1.16	17.4							302	
316		7.76	7.73	34.236	26.714	137.6	0.605	1.06	15.9							318	204
377		7.16	7.12	34.259	26.818	128.3	0.686	0.73	10.8							379	203
400	ISL	6.92	6.88	34.271	26.861	124.4	0.715	0.61	9.0							403	
438		6.56	6.52	34.291	26.925	118.6	0.761	0.45	6.6							441	202
500	ISL	6.13	6.09	34.317	27.002	111.8	0.833	0.33	4.8							503	
511		6.05	6.00	34.322	27.016	110.5	0.845	0.31	4.5							515	201

RV ROBERT GORDON SPROUL | CALCOFI CRUISE 9806 | 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	18/06/98	1507 UTC	1708 m	150 05 kn	280 01 10	2	1017.2 mb	18.2 C	16.1 C		8/8 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	17.75	17.75	33.636	24.289	362.4	0.000	5.73	105.5					0.51	0.16	0	
1		17.75	17.75	33.636	24.290	362.5	0.004	5.73	105.5					0.51	0.16	1	220
8		17.42	17.42	33.625	24.361	355.9	0.029	5.75	105.1					0.41	0.17	8	219
10	ISL	17.39	17.39	33.626	24.369	355.2	0.036	5.76	105.3					0.45	0.18	10	
18		17.27	17.27	33.628	24.399	352.6	0.064	5.78	105.4					0.60 A	0.22 A	18	218
20	ISL	16.78	16.78	33.619	24.508	342.3	0.071	5.71	103.1					0.93	0.32	20	
29		14.15	14.15	33.622	25.093	286.8	0.099	5.05	86.5					2.01	0.66	29	217
30	ISL	13.91	13.91	33.629	25.148	281.6	0.102	4.91	83.7					1.89	0.64	30	
39		12.14	12.13	33.703	25.557	242.8	0.126	3.69	60.7					0.48	0.31	39	216
49		10.86	10.85	33.758	25.835	216.5	0.149	3.19	51.0					0.11	0.22	49	215
50	ISL	10.81	10.80	33.768	25.851	215.0	0.151	3.14	50.2					0.10	0.21	50	
58		10.54	10.53	33.840	25.955	205.3	0.168	2.80	44.5					0.05	0.17	58	214
69		10.01	10.00	33.875	26.074	194.2	0.190	2.71	42.6					0.01	0.13	69	213
75	ISL	9.80	9.79	33.887	26.118	190.1	0.201	2.69	42.1					0.01	0.12	75	
84		9.58	9.57	33.909	26.172	185.1	0.218	2.65	41.3					0.01	0.12	84	212
98		9.48	9.47	33.974	26.240	179.0	0.244	2.41	37.5					0.01	0.10	99	211
100	ISL	9.46	9.45	33.980	26.248	178.3	0.247	2.39	37.1					0.01	0.10	101	
118		9.28	9.27	34.011	26.301	173.5	0.279	2.28	35.3					0.01	0.09	119	210
125	ISL	9.16	9.15	34.012	26.321	171.7	0.291	2.31	35.6					0.01	0.09	126	
139		8.95	8.94	34.020	26.361	168.2	0.315	2.35	36.1					0.01	0.08	140	209
150	ISL	8.95	8.93	34.060	26.393	165.4	0.333	2.16	33.2					0.01	0.08	151	
168		8.94	8.92	34.123	26.444	160.9	0.363	1.85	28.4					0.01	0.08	169	208
199		8.44	8.42	34.118	26.518	154.3	0.411	2.02	30.7					0.00	0.03	200	207
200	ISL	8.43	8.41	34.120	26.521	154.0	0.413	2.01	30.5							201	
228		8.24	8.22	34.175	26.594	147.6	0.455	1.63	24.7							229	206
250	ISL	7.99	7.96	34.193	26.646	143.0	0.487	1.43	21.5							252	
269		7.77	7.74	34.202	26.685	139.5	0.514	1.29	19.3							271	205
300	ISL	7.52	7.49	34.219	26.735	135.1	0.557	1.10	16.4							302	
318		7.37	7.34	34.227	26.763	132.7	0.581	1.01	15.0							320	204
377		6.64	6.61	34.235	26.870	123.0	0.656	0.70	10.2							379	203
400	ISL	6.48	6.44	34.249	26.902	120.1	0.684	0.59	8.6							403	
436		6.30	6.26	34.275	26.947	116.3	0.727	0.45	6.5							439	202
500	ISL	5.99	5.95	34.323	27.025	109.5	0.799	0.30	4.3							503	
515		5.92	5.87	34.335	27.043	107.9	0.815	0.26	3.7							519	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 9806 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 39.0 N	119 28.7 W	18/06/98	2048	UTC	1308 m		00 kn	340 03 06	1	1018.0 mb	18.7 C	15.6 C		4/8	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	16.65	16.65	32.941	24.017	388.4	0.000	5.89	105.7					0.12	0.02	0	
2		16.65	16.65	32.941	24.017	388.5	0.008	5.89	105.7					0.12	0.02	2	220
9		15.79	15.79	32.986	24.247	366.8	0.034	5.97	105.3					0.17	0.04	9	219
10	ISL	15.73	15.73	32.998	24.270	364.6	0.038	5.97	105.2					0.17	0.04	10	
20		15.18	15.18	33.086	24.459	346.9	0.073	5.99	104.5					0.18	0.05	20	218
30		14.18	14.18	33.021	24.622	331.6	0.107	6.17	105.4					0.27	0.08	30	217
39		14.06	14.05	33.198	24.784	316.4	0.137	5.79	98.8					0.45	0.18	39	216
50		12.40	12.39	33.144	25.074	289.0	0.170	5.31	87.5					0.43	0.19	50	215
59		12.38	12.37	33.309	25.206	276.7	0.195	5.21	85.9					0.38	0.20	59	214
69		11.85	11.84	33.349	25.337	264.4	0.222	4.84	78.9					0.12	0.13	69	213
75	ISL	11.34	11.33	33.460	25.517	247.4	0.238	4.49	72.4					0.09	0.11	75	
84		10.62	10.61	33.629 D	25.777	222.8	0.259	4.02	63.9					0.05	0.09	84	212
99		10.24	10.23	33.644	25.855	215.7	0.292	3.94	62.1					0.03	0.06	99	211
100	ISL	10.20	10.19	33.649	25.866	214.7	0.294	3.93	61.9					0.03	0.06	100	
119		9.47	9.46	33.764	26.077	194.8	0.333	3.62	56.2					0.01	0.04	120	210
125	ISL	9.33	9.32	33.784	26.116	191.3	0.344	3.55	54.9					0.01	0.04	126	
139		9.13	9.11	33.832	26.186	184.9	0.371	3.34	51.4					0.00	0.04	140	209
150	ISL	9.11	9.09	33.911	26.251	178.9	0.391	2.94	45.3					0.00	0.06	151	
168		9.09	9.07	34.037	26.353	169.6	0.422	2.24	34.5					0.01	0.09	169	208
199		8.72	8.70	34.153	26.503	155.9	0.473	1.63	24.9					0.01	0.09	200	207
200	ISL	8.72	8.70	34.155	26.504	155.8	0.474	1.62	24.8							201	
228		8.67	8.65	34.199	26.547	152.3	0.517	1.40	21.4							229	206
250	ISL	8.52	8.49	34.215	26.583	149.2	0.550	1.31	19.9							251	
268		8.35	8.32	34.223	26.615	146.4	0.577	1.25	19.0							270	205
300	ISL	8.01	7.98	34.241	26.681	140.6	0.623	1.08	16.3							302	
318		7.77	7.74	34.245 D	26.720	137.1	0.648	1.00	15.0							320	204
378		6.73	6.70	34.197	26.828	127.0	0.727	0.92	13.4							380	203
400	ISL	6.54	6.50	34.203	26.858	124.3	0.755	0.83	12.1							403	
437		6.34	6.30	34.229	26.905	120.3	0.800	0.66	9.6							440	202
500	ISL	6.12	6.08	34.295	26.986	113.3	0.874	0.41	5.9							503	
516		6.06	6.01	34.312	27.007	111.5	0.892	0.35	5.0							520	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 24.5 N	119 57.8 W	19/06/98	0122	UTC	881 m	210	05 kn	280 03 05	1	1016.8 mb	17.9 C	15.0 C		1/8	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	17.49	17.49	33.061	23.912	398.5	0.000	5.73	104.6					0.17	0.03	0	
1		17.49	17.49	33.061	23.912	398.5	0.004	5.73	104.6					0.17	0.03	1	220
10	ISL	17.21	17.21	33.044	23.965	393.7	0.040	5.74	104.2					0.17	0.03	10	
15		16.98	16.98	33.053	24.027	388.0	0.059	5.75	103.9					0.17	0.03	15	219
20	ISL	16.85	16.85	33.120	24.109	380.3	0.078	5.79	104.4					0.19	0.04	20	
30		16.62	16.62	33.282	24.287	363.7	0.116	5.87	105.5					0.23	0.05	30	218
44		16.30	16.29	33.436	24.479	345.8	0.165	5.83	104.2					0.24	0.07	44	217
50	ISL	15.58	15.57	33.331	24.561	338.2	0.186	5.88	103.5					0.30	0.10	50	
54		15.11	15.10	33.259	24.609	333.7	0.199	5.91	103.0					0.35	0.12	54	216
65		14.80	14.79	33.278	24.691	326.2	0.236	5.84	101.2					0.40	0.21	65	215
74		14.58	14.57	33.364	24.804	315.6	0.264	5.67	97.8					0.37	0.31	74	214
75	ISL	14.52	14.51	33.356	24.811	315.0	0.268	5.66	97.5					0.37	0.31	75	
83		13.95	13.94	33.307	24.892	307.4	0.292	5.53	94.2					0.31	0.25	83	213
94		13.26	13.25	33.504	25.185	279.7	0.325	5.03	84.5					0.18	0.19	94	212
100	ISL	12.81	12.80	33.519	25.286	270.2	0.341	4.88	81.3					0.14	0.18	100	
109		12.13	12.12	33.505	25.407	258.9	0.365	4.72	77.5					0.11	0.16	109	211
124		11.14	11.12	33.558	25.631	237.7	0.402	4.40	70.7					0.08	0.10	125	210
125	ISL	11.08	11.06	33.562	25.645	236.4	0.405	4.38	70.3					0.08	0.10	126	
144		10.14	10.12	33.665	25.889	213.4	0.447	4.02	63.3					0.03	0.06	145	209
150	ISL	9.93	9.91	33.713	25.962	206.5	0.460	3.79	59.4					0.02	0.06	151	
168		9.45	9.43	33.856	26.153	188.6	0.496	3.08	47.8					0.01	0.07	169	208
200		8.80	8.78	33.989	26.362	169.3	0.553	2.62	40.1					0.01	0.08	201	207
230		8.10	8.08	34.048	26.515	155.0	0.601	2.38	35.9							231	206
250	ISL	7.89	7.86	34.091	26.580	149.1	0.632	2.09	31.3							251	
268		7.80	7.77	34.128	26.623	145.4	0.658	1.80	26.9							269	205
300	ISL	7.72	7.69	34.192	26.685	140.0	0.704	1.34	20.0							302	
321		7.65	7.62	34.223	26.720	137.0	0.733	1.10	16.4							323	204
376		6.93	6.89	34.225	26.823	127.6	0.806	0.86	12.6							378	203
400	ISL	6.76	6.72	34.244	26.861	124.3	0.836	0.74	10.8							402	
438		6.55	6.51	34.281	26.919	119.2	0.882	0.55	8.0							441	202
500	ISL	6.05	6.01	34.325	27.019	110.2	0.954	0.33	4.7							503	
510		5.97	5.93	34.333	27.035	108.7	0.964	0.30	4.3							513	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 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 38.4 W	19/06/98	0848 UTC		300 11 kn			1016.9 mb	18.1 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	17.86	17.86	33.173	23.908	398.8	0.000	5.64	103.7					0.16	0.03	0	
1		17.86	17.86	33.173	23.908	398.8	0.004	5.64	103.7					0.16	0.03	1	220
10	ISL	17.61	17.61	33.159	23.958	394.4	0.040	5.66	103.6					0.14	0.03	10	
14		17.42	17.42	33.155	24.001	390.4	0.055	5.67	103.4					0.14	0.03	14	219
20	ISL	17.14	17.14	33.168	24.077	383.3	0.079	5.76	104.5					0.16	0.03	20	
29		16.67	16.67	33.207	24.218	370.3	0.113	5.90	106.0					0.21	0.04	29	218
30	ISL	16.62	16.62	33.216	24.236	368.5	0.116	5.90	105.9					0.21	0.04	30	
44		15.89	15.88	33.310	24.475	346.1	0.166	5.90	104.5					0.28	0.08	44	217
50	ISL	15.47	15.46	33.266	24.535	340.6	0.187	5.90	103.6					0.33	0.11	50	
58		15.06	15.05	33.224	24.593	335.3	0.214	5.90	102.7					0.37	0.14	58	216
74		15.59	15.58	33.474	24.669	328.6	0.267	5.80	102.2					0.30	0.14	74	215
75	ISL	15.63	15.62	33.491	24.674	328.2	0.270	5.79	102.1					0.30	0.14	75	
84		15.88	15.87	33.639	24.732	323.0	0.300	5.70	101.1					0.30	0.15	84	214
93		15.88	15.87	33.776	24.838	313.2	0.328	5.57	98.9					0.27	0.24	93	213
100	ISL	15.66	15.64	33.800	24.906	307.0	0.350	5.47	96.7					0.27	0.27	100	
104		15.35	15.33	33.780	24.959	301.9	0.362	5.39	94.7					0.27	0.28	104	212
113		13.83	13.81	33.656	25.188	280.1	0.388	5.13	87.3					0.18	0.21	113	211
124		12.02	12.00	33.600	25.502	250.2	0.417	4.80	78.6					0.11	0.17	125	210
125	ISL	11.94	11.92	33.599	25.516	248.9	0.420	4.78	78.2					0.11	0.17	126	
139		11.27	11.25	33.614	25.651	236.2	0.454	4.58	73.8					0.09	0.12	140	209
150	ISL	10.69	10.67	33.635	25.771	224.9	0.479	4.36	69.4					0.07	0.09	151	
163		10.05	10.03	33.674	25.912	211.6	0.508	4.08	64.1					0.04	0.06	164	208
192		9.00	8.98	33.807	26.188	185.7	0.565	3.58	55.0					0.01	0.02	193	207
200	ISL	8.79	8.77	33.843	26.249	180.0	0.580	3.48	53.2							201	
228		8.25	8.23	33.953	26.418	164.2	0.628	3.12	47.1							229	206
250	ISL	7.99	7.96	34.014	26.505	156.3	0.663	2.71	40.7							251	
267		7.84	7.81	34.048	26.554	151.9	0.689	2.39	35.8							268	205
300	ISL	7.57	7.54	34.093	26.629	145.2	0.739	1.97	29.3							302	
315		7.45	7.42	34.105	26.655	142.9	0.760	1.82	27.0							317	204
378		6.76	6.73	34.130	26.771	132.4	0.847	1.28	18.7							380	203
400	ISL	6.60	6.56	34.155	26.812	128.7	0.876	1.07	15.6							402	
439		6.37	6.33	34.202	26.880	122.7	0.925	0.74	10.7							442	202
500	ISL	5.99	5.95	34.243	26.961	115.5	0.997	0.49	7.0							503	
512		5.91	5.87	34.251	26.978	114.0	1.011	0.44	6.3							515	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 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 18.8 W	19/06/98	1508 UTC		340 11 kn	340 03 07	2	1017.3 mb	17.1 C	15.0 C		8/8	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	17.93	17.93	33.667	24.269	364.4	0.000	5.54	102.3					0.10	0.02	0	
1		17.93	17.93	33.667	24.270	364.4	0.004	5.54	102.3					0.10	0.02	1	220
10	ISL	17.94	17.94	33.666	24.267	365.0	0.036	5.55	102.5					0.09	0.02	10	
13		17.94	17.94	33.666	24.267	365.1	0.047	5.56	102.7					0.09	0.02	13	219
20	ISL	17.90	17.90	33.663	24.275	364.6	0.073	5.56	102.6					0.09	0.02	20	
29		17.84	17.84	33.659	24.286	363.7	0.106	5.56	102.5					0.09	0.02	29	218
30	ISL	17.79	17.78	33.654	24.295	363.0	0.109	5.57	102.6					0.09	0.02	30	
44		17.02	17.01	33.581	24.423	351.2	0.159	5.71	103.6					0.11	0.03	44	217
50	ISL	16.91	16.90	33.576	24.446	349.3	0.180	5.72	103.5					0.12	0.04	50	
59		16.76	16.75	33.572	24.478	346.5	0.212	5.73	103.4					0.14	0.05	59	216
73		16.16	16.15	33.536	24.589	336.3	0.259	5.78	103.0					0.15	0.05	73	215
75	ISL	16.13	16.12	33.537	24.597	335.6	0.266	5.78	103.0					0.16	0.05	75	
84		16.04	16.03	33.551	24.628	332.9	0.296	5.76	102.4					0.19	0.07	84	214
93		15.94	15.93	33.567	24.663	329.8	0.326	5.72	101.5					0.23	0.11	93	213
100	ISL	15.92	15.90	33.578	24.676	328.8	0.349	5.70	101.2					0.26	0.13	100	
103		15.91	15.89	33.582	24.682	328.3	0.359	5.69	101.0					0.27	0.15	103	212
114		14.53	14.51	33.528	24.943	303.6	0.394	5.38	92.8					0.31	0.34	114	211
122		13.85	13.83	33.522	25.080	290.6	0.418	5.16	87.8					0.26	0.28	123	210
125	ISL	13.60	13.58	33.517	25.128	286.1	0.426	5.10	86.3					0.24	0.26	126	
139		12.52	12.50	33.508	25.335	266.5	0.465	4.87	80.6					0.16	0.21	140	209
150	ISL	11.74	11.72	33.537	25.506	250.4	0.493	4.61	75.0					0.11	0.17	151	
162		11.01	10.99	33.587	25.677	234.2	0.522	4.32	69.2					0.07	0.13	163	208
195		9.89	9.87	33.735	25.987	205.2	0.595	3.70	57.9					0.02	0.04	196	207
200	ISL	9.75	9.73	33.764	26.033	200.8	0.605	3.60	56.2							201	
229		9.02	9.00	33.918	26.272	178.5	0.660	3.11	47.8							230	206
250	ISL	8.61	8.58	33.984	26.388	167.7	0.696	2.88	43.9							251	
269		8.29	8.26	34.021	26.466	160.5	0.728	2.72	41.2							270	205
300	ISL	7.82	7.79	34.051	26.560	151.9	0.776	2.49	37.3							302	
318		7.57	7.54	34.057	26.601	148.2	0.803	2.36	35.1							320	204
373		6.86	6.83	34.077	26.716	137.6	0.882	1.79	26.2							375	203
400	ISL	6.60	6.56	34.099	26.768	132.9	0.918	1.46	21.2							402	
434		6.35	6.31	34.133	26.828	127.5	0.962	1.08	15.6							437	202
500	ISL	6.04	6.00	34.209	26.928	118.6	1.044	0.64	9.2							503	
513		5.98	5.94	34.224	26.948	116.9	1.059	0.55	7.9							516	201

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 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	19/06/98	2213 UTC	3926 m	310 13 kn	310 04 04	2	1018.1 mb	18.8 C	16.0 C		8/8	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	18.20	18.20	33.565	24.125	378.1	0.000	5.55	103.0					0.11	0.03	0	
1		18.20	18.20	33.565	24.125	378.1	0.004	5.55	103.0					0.11	0.03	1	220
9		18.17	18.17	33.598	24.158	375.3	0.034	5.57	103.3					0.11	0.01	9	219
10	ISL	18.12	18.12	33.595	24.168	374.3	0.038	5.58	103.4					0.11	0.01	10	
19		17.42	17.42	33.543	24.298	362.2	0.071	5.69	104.0					0.13	0.03	19	218
20	ISL	17.31	17.31	33.534	24.318	360.4	0.074	5.71	104.1					0.13	0.03	20	
29		16.39	16.39	33.471	24.485	344.8	0.106	5.84	104.6					0.16	0.05	29	217
30	ISL	16.34	16.34	33.468	24.494	343.9	0.110	5.84	104.5					0.16	0.05	30	
40		16.10	16.09	33.475	24.554	338.5	0.144	5.83	103.8					0.18	0.07	40	216
50		16.06	16.05	33.559	24.628	331.8	0.177	5.80	103.2					0.23	0.07	50	215
59		15.74	15.73	33.522	24.672	327.8	0.207	5.82	102.9					0.28	0.10	59	214
69		16.00	15.99	33.641	24.706	325.0	0.240	5.75	102.3					0.25	0.09	69	213
75	ISL	15.92	15.91	33.628	24.714	324.4	0.259	5.75	102.1					0.25	0.09	75	
85		15.72	15.71	33.590	24.730	323.2	0.291	5.76	101.8					0.26	0.10	85	212
99		15.88	15.86	33.704	24.782	318.7	0.336	5.65	100.3					0.26 A	0.16 A	99	211
100	ISL	15.86	15.84	33.703	24.786	318.3	0.340	5.64	100.0					0.26	0.17	100	
119		15.42	15.40	33.787	24.949	303.3	0.399	5.41	95.2					0.26	0.24	119	210
125	ISL	14.73	14.71	33.739	25.063	292.6	0.416	5.29	91.7					0.20	0.19	126	
139		12.89	12.87	33.630	25.358	264.5	0.455	4.97	82.9					0.05 A	0.04 A	140	209
150	ISL	11.81	11.79	33.633	25.567	244.6	0.483	4.75	77.5					0.04	0.04	151	
168		10.50	10.48	33.692	25.849	217.8	0.525	4.42	70.1					0.03	0.03	169	208
199		9.46	9.44	33.772	26.087	195.6	0.589	3.93	61.0					0.01	0.01	200	207
200	ISL	9.43	9.41	33.776	26.095	194.8	0.591	3.91	60.6							201	
228		8.62	8.60	33.888	26.311	174.6	0.643	3.42	52.1							229	206
250	ISL	8.20	8.17	33.952	26.425	163.9	0.680	3.13	47.2							251	
267		7.95	7.92	33.988	26.491	157.9	0.707	2.94	44.1							268	205
300	ISL	7.54	7.51	34.022	26.577	150.0	0.758	2.59	38.5							302	
318		7.34	7.31	34.032	26.614	146.8	0.785	2.40	35.5							320	204
378		6.65	6.62	34.084	26.749	134.3	0.869	1.57	22.9							380	203
400	ISL	6.52	6.48	34.111	26.788	130.9	0.898	1.33	19.3							402	
437		6.35	6.31	34.157	26.847	125.7	0.946	0.99	14.3							440	202
500	ISL	5.93	5.89	34.213	26.945	116.9	1.022	0.62	8.9							503	
516		5.82	5.78	34.227	26.970	114.7	1.041	0.52	7.4							519	201

A) SECOND FLUOROMETER READINGS NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENTS CALCULATED WITH ASSUMED ACID RATIOS INTERPOLATED FROM ADJACENT LEVELS.

RV ROBERT GORDON SPROUL CALCOFI CRUISE 9806 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 39.9 W	20/06/98	0457 UTC	4028 m	340 15 kn			1018.2 mb	17.8 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	17.93	17.93	33.277	23.971	392.8	0.000	5.62	103.6					0.17	0.02	0	
1		17.93	17.93	33.277	23.971	392.8	0.004	5.62	103.6					0.17	0.02	1	220
9		17.94	17.94	33.283	23.974	392.9	0.035	5.61	103.4					0.16	0.02	9	219
10	ISL	17.94	17.94	33.282	23.973	393.0	0.039	5.61	103.4					0.16	0.02	10	
19		17.91	17.91	33.275	23.975	393.1	0.075	5.60	103.2					0.20	0.03	19	218
20	ISL	17.85	17.85	33.276	23.990	391.7	0.079	5.62	103.4					0.20	0.03	20	
30		16.95	16.95	33.260	24.193	372.6	0.117	5.85	105.8					0.22	0.02	30	217
39		15.93	15.92	33.184	24.369	356.1	0.150	5.96	105.6					0.30	0.04	39	216
49		15.28	15.27	33.234	24.552	338.9	0.184	5.96	104.2					0.30	0.03	49	215
50	ISL	15.25	15.24	33.240	24.563	337.9	0.188	5.96	104.2					0.30	0.04	50	
59		15.09	15.08	33.292	24.639	331.0	0.218	5.91	103.0					0.25	0.09	59	214
70		15.15	15.14	33.351	24.671	328.2	0.254	5.83	101.7					0.25	0.11	70	213
75	ISL	15.19	15.18	33.390	24.693	326.3	0.270	5.80	101.3					0.23	0.16	75	
83		15.22	15.21	33.465	24.744	321.7	0.296	5.73	100.2					0.21	0.23	83	212
99		15.12	15.11	33.660	24.917	305.7	0.347	5.46	95.4					0.26	0.18	99	211
100	ISL	15.04	15.02	33.656	24.931	304.4	0.350	5.44	94.9					0.26	0.18	100	
120		12.87	12.85	33.531	25.284	270.9	0.407	4.93	82.2					0.13	0.12	120	210
125	ISL	12.36	12.34	33.532	25.384	261.5	0.420	4.79	79.0					0.09	0.10	126	
140		11.03	11.01	33.585	25.672	234.2	0.458	4.37	70.1					0.00	0.04	141	209
150	ISL	10.47	10.45	33.647	25.819	220.3	0.480	4.17	66.1					0.00	0.03	151	
168		9.81	9.79	33.766	26.024	201.0	0.518	3.83	59.9					0.01	0.01	169	208
198		9.10	9.08	33.896	26.242	180.8	0.576	3.08	47.4					0.00	0.01	199	207
200	ISL	9.05	9.03	33.900	26.253	179.7	0.579	3.09	47.5							201	
227		8.53	8.51	33.938	26.364	169.5	0.626	3.31	50.3							228	206
250	ISL	8.29	8.26	34.010	26.457	161.0	0.664	2.82	42.7							251	
264		8.16	8.13	34.051	26.509	156.3	0.686	2.46	37.1							265	205
300	ISL	7.52	7.49	34.057	26.608	147.2	0.741	2.24	33.3							302	
319		7.18	7.15	34.045	26.646	143.6	0.769	2.21	32.6							321	204
376		6.60	6.57	34.063	26.739	135.2	0.848	1.70	24.7							378	203
400	ISL	6.45	6.41	34.084	26.776	132.0	0.880	1.44	20.9							402	
438		6.24	6.20	34.121	26.833	127.0	0.929	1.06	15.3							441	202
500	ISL	5.83	5.79	34.171	26.924	118.8	1.006	0.70	10.0							503	
519		5.70	5.66	34.187	26.953	116.1	1.028	0.59	8.4							522	201

CalCOFI Cruise 9806

MACROZOOPLANKTON BIOMASS
Net Mesh Size: 0.505mm

Line	Sta.	Latitude N	Longitude W	Date	Time (PST)		Water Volume	Max. Tow	Volume per 1000 m^3 Strained	
				Mo/Day	Start	End	Strained (m^3)	Depth (m)	Total (cm^3)	Small (cm^3)
83	40.6	34 13.6	119 25.8	06/22	0725	0728	82	20	36	36
83	42	34 10.2	119 31.1	06/22	0458	0517	387	175	338	338
83	51	33 52.6	120 10.3	06/21	2116	2136	421	191	501	501
83	55	33 45.4	120 25.7	06/21	1742	1803	401	215	90	90
83	60	33 35.7	120 45.7	06/21	1327	1348	384	206	117	117
83	70	33 15.1	121 27.2	06/21	0653	0714	463	211	30	30
83	80	32 55.3	122 08.0	06/21	0019	0041	498	206	32	32
83	90	32 35.0	122 48.7	06/20	1735	1756	452	213	11	11
83	100	32 14.7	123 30.1	06/20	1053	1114	483	208	12	12
90	28	33 28.9	117 46.4	06/17	1919	1926	148	70	108	108
90	30	33 24.8	117 55.0	06/17	1635	1656	423	213	21	21
90	35	33 15.1	118 14.8	06/18	0009	0029	415	205	84	63
90	37	33 11.4	118 23.0	06/18	0255	0316	426	212	113	113
90	45	32 55.1	118 56.6	06/18	0812	0833	450	209	91	64
90	53	32 39.0	119 28.8	06/18	1412	1432	398	213	60	60
90	60	32 24.5	119 58.5	06/18	1945	2006	421	212	43	43
90	70	32 05.4	120 38.8	06/19	0153	0214	455	215	26	26
90	80	31 45.6	121 18.9	06/19	0815	0836	460	214	13	13
90	90	31 25.6	121 59.7	06/19	1531	1552	437	215	11	11
90	100	31 04.7	122 40.5	06/19	2214	2235	464	215	26	26

FIGURES

Avifauna Observations

CalCOFI Cruise 9802

1a. Leach's Storm Petrel distribution.

1b. Black-vented Shearwater distribution.

1c. Red and Red-necked Phalarope distribution.

1d. Northern Fulmar distribution.

1e. Western Gull distribution.

1f. Brown Pelican distribution.

CalCOFI Cruise 9803

2a. Cassin's Auklet distribution.

2b. Northern Fulmar distribution.

2c. Red and Red-necked Phalarope distribution.

2d. Pink-footed Shearwater distribution.

2e. California Gull distribution.

2f. Western Gull distribution.

CalCOFI Cruise 9804

3a. Cook's Petrel distribution.

3b. Northern Fulmar distribution.

3c. Red and Red-necked Phalarope distribution.

3d. Sooty Shearwater distribution.

3e. Brown Pelican distribution.

3f. Western Gull distribution.

CalCOFI Cruise 9805

4a. Cook’s Petrel distribution.

4b. Black Storm Petrel distribution.

4c. Sooty Shearwater distribution.

4d. Pink-footed Shearwater distribution.

4e. Brown Pelican distribution.

4f. Western Gull distribution.

CalCOFI Cruise 9806

5a. Sooty Shearwater distribution.

5b. Western Gull distribution.

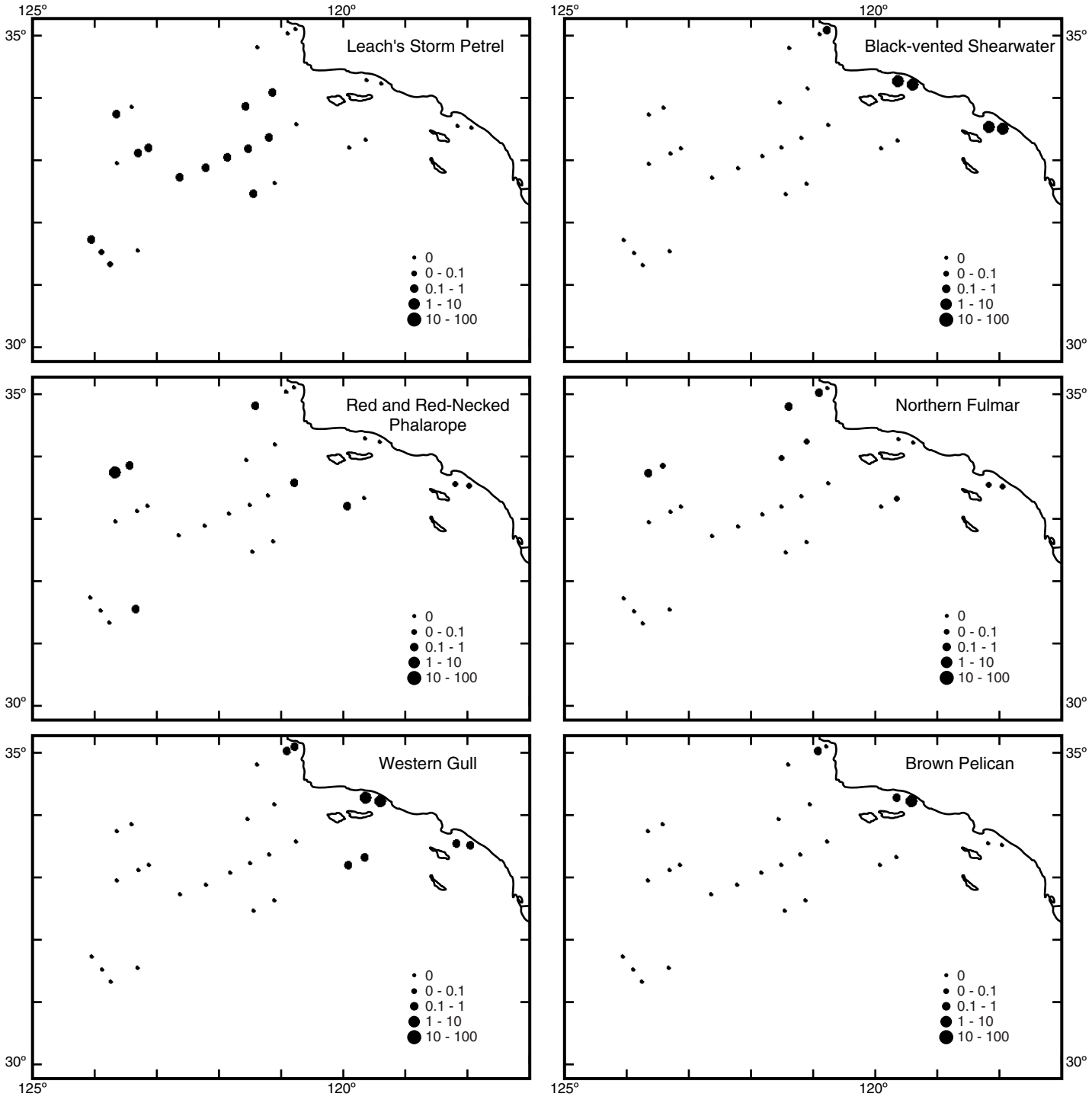
5c. Pink-footed Shearwater distribution.

5d. Leach’s Storm Petrel distribution.

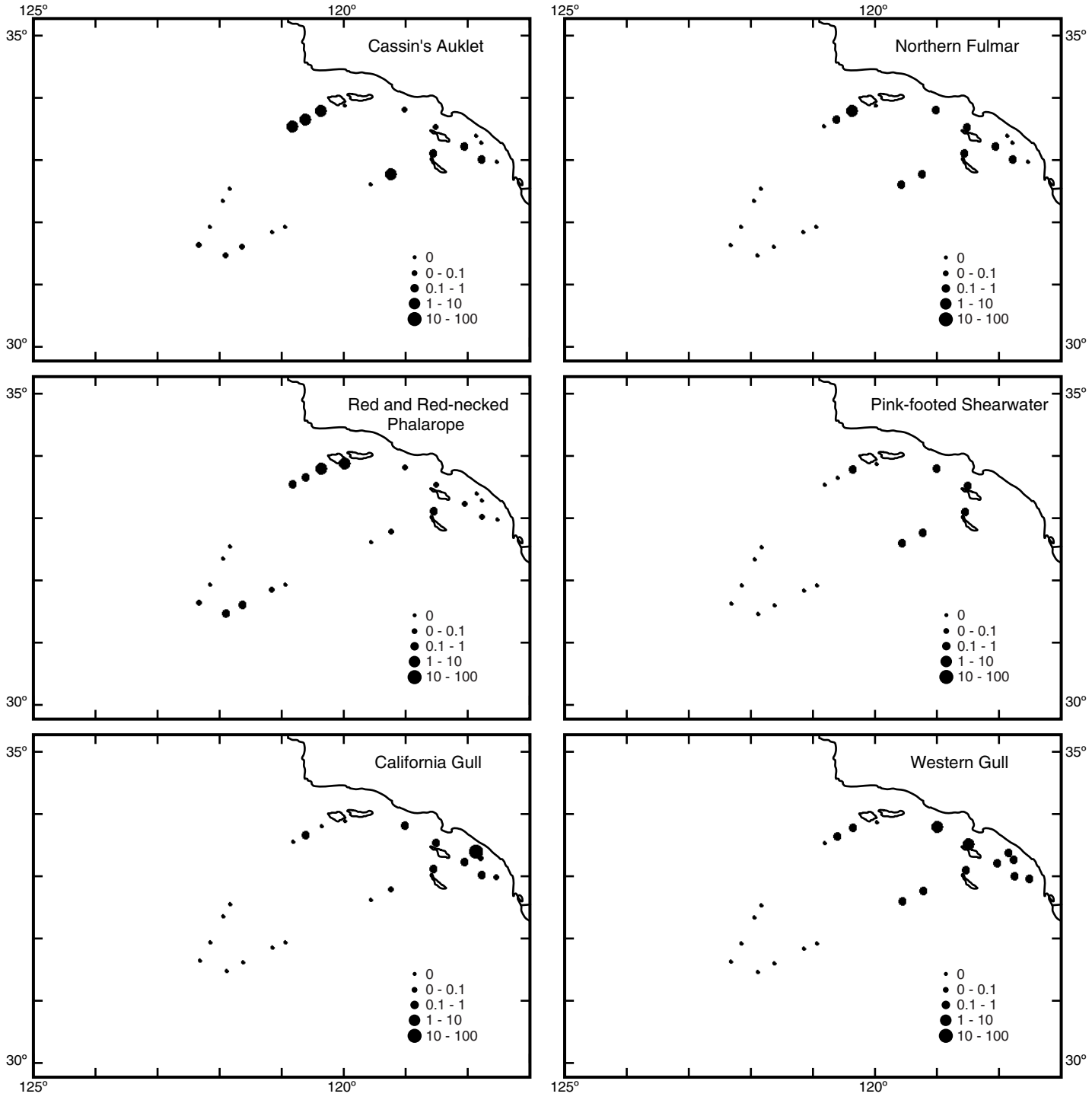
5e. Black Storm Petrel distribution.

5f. Brown Pelican distribution.

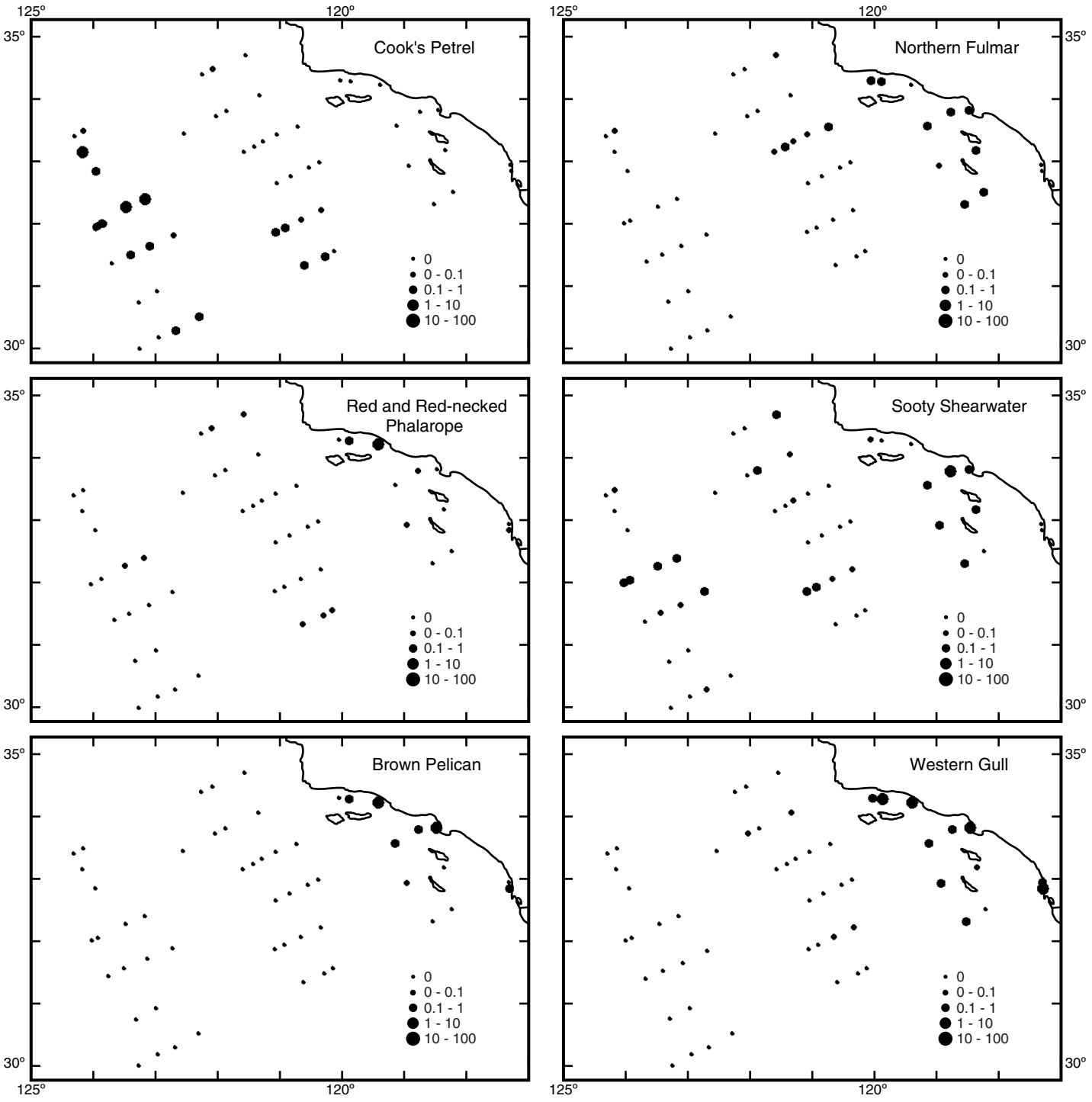
CalCOFI Cruise 9802



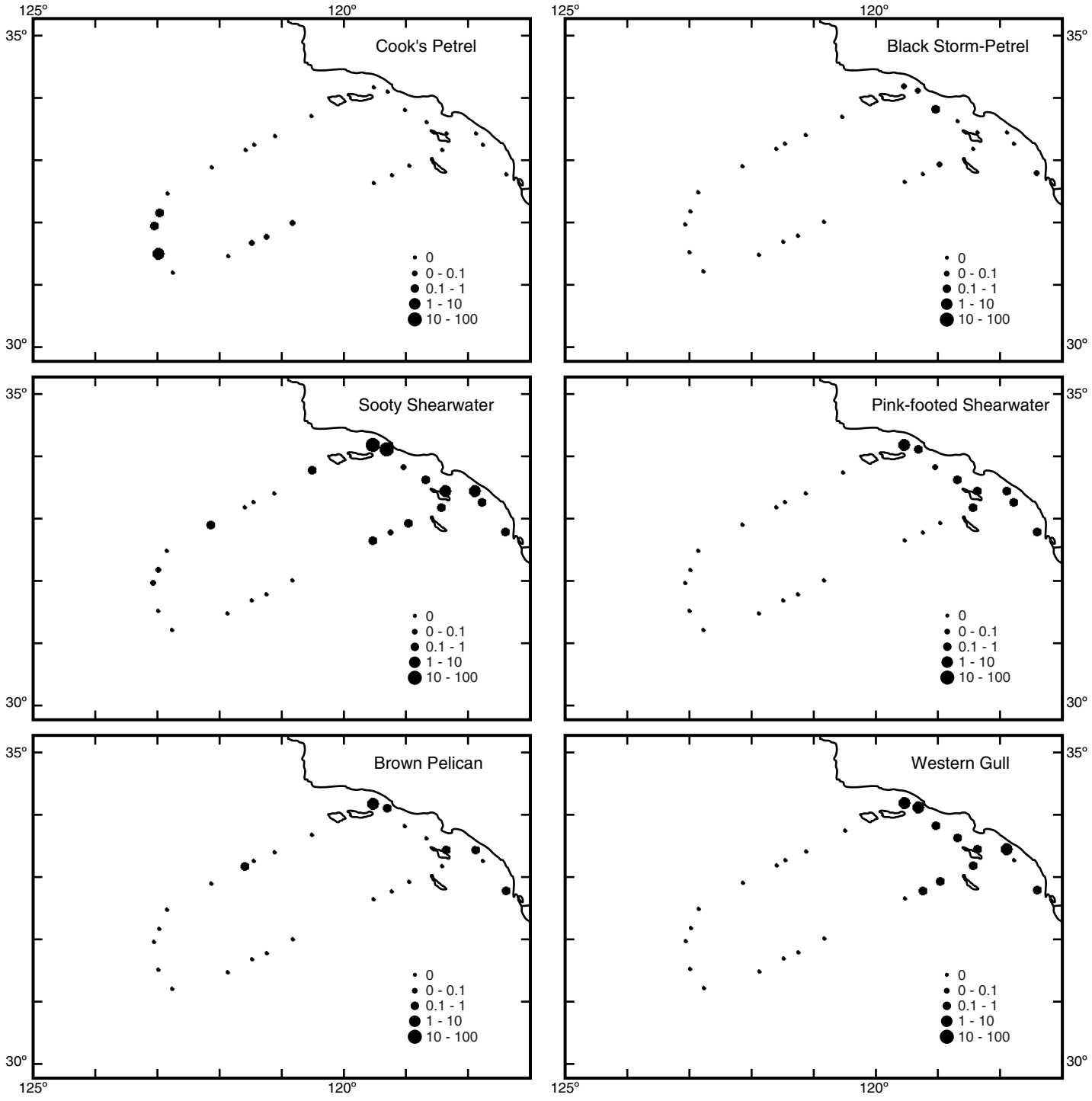
CalCOFI Cruise 9803



CalCOFI Cruise 9804



CalCOFI Cruise 9805



CalCOFI Cruise 9806